Department of Health & Social Care

Tobacco and Vapes Bill

Impact assessment

5 November 2024

Introduction

1. Tobacco is the single most important, entirely preventable cause of ill health, disability, and death in this country[1]. Smoking kills two-thirds of its users[2] and is responsible for around 80,000 deaths in the UK each year:

    - 64,000 deaths per year in England[3]
    - 8,900 deaths per year in Scotland[4]
    - 3,800 deaths per year in Wales[5]
    - 2,200 deaths per year in Northern Ireland[6]

2. In the UK, 11.9% of the population smoke which equates to 6.0 million people, and in some parts of the country prevalence is over 20%[7]. Smoking causes harm throughout people's lives, not only for the smoker but for those around them – there is no safe level of exposure. It is a major risk factor for poor maternal and infant outcomes[8], significantly increasing the chance of stillbirth, and can trigger asthma in children. Smoking causes around 1 in 4 of all UK cancer deaths[9] and is responsible for the great majority of lung cancer cases[10]. Smoking is also a major cause of heart disease, stroke, and heart failure[11], and increases the risk of dementia in the elderly[12]. Smokers lose an average of 10 years of life expectancy, or around 1 year for every 4 smoking years[13].

3. Non-smokers are exposed to second-hand smoke (passive smoking) which means that through no choice of their own many come to harm - in particular children, pregnant women, and their babies. Passive smoking increases the risk of a range of health issues, both immediate (for example, asthma attacks) and longer term, including lung cancer and heart disease. There were 1,200 fewer emergency admissions for heart attacks in the first year in England following the 2007 public indoor smoking ban[14].

4. Smoking puts significant pressure on the NHS. In England, almost every minute of every day someone is admitted to hospital because of smoking and up to 75,000 GP appointments could be attributed to smoking each month - equivalent to over 100 appointments every hour[15].

[1] PHE. 2021. Health Profile for England 2021.
[2] Tobacco smoking and all-cause mortality in a large Australian cohort study: findings from a mature epidemic with current low smoking prevalence | BMC Medicine | Full Text (biomedcentral.com)
[3] OHID. Local Tobacco Control Profiles - Data.
[4] The Scottish Public Health Observatory. Tobacco use: smoking attributable deaths.
[5] Public Health Wales. Smoking in Wales.
[6] Department of Health, Northern Ireland. 2020. Ten year tobacco control strategy for Northern Ireland.
[7] ONS. 2024. Adult smoking habits in the UK - Office for National Statistics (ons.gov.uk)
[8] NHS. What are the health risks of smoking?
[9] Cancer Research UK. Tobacco statistics.
[10] NHS. Lung cancer - Causes - NHS (www.nhs.uk)
[11] Global Burden of Disease. VizHub - GBD Results (healthdata.org)
[12] Livingston and others. 2020. Dementia prevention, intervention, and care: 2020 report of the Lancet Commission - The Lancet.
[13] Royal College of Physicians. 2018. Hiding in plain sight: Treating tobacco dependency in the NHS | RCP London.
[14] Impact of smokefree legislation in England: Evidence review (publishing.service.gov.uk)
[15] Cancer Research UK. 2023. Ending smoking could free up 75,000 GP appointments each month.

5. Smoking drives socioeconomic and geographic inequalities in health outcomes. 230,000 households live in smoking-induced poverty[16]. Children of smokers are 3 times as likely to start to smoke[17], perpetuating the cycle of disadvantage.

6. Smoking also has wider costs to the economy, including a cost on productivity through smoking related lost earnings, unemployment, and early death. Action on Smoking and Health (ASH) estimate that the total costs of smoking to society in England are £21.8bn, including an over £18 billion cost to productivity[18].

7. Previous tobacco control measures have been imperative to lowering adult smoking prevalence, which is now the lowest on record in England. A comprehensive approach which has spanned multiple governments has been critical to success including a history of legislation on display, plain packaging, flavours, smokefree places, restricting advertising and promotion, funding to stop smoking services, and impactful stop-smoking campaigns.

8. In recent years there has also been a sharp increase in the number of young people that vape. Data from NHS Digital's report, 'Smoking, drinking and drug use among young people in England 2021[19],' showed a recent doubling of regular vape use for 11 to 15 year olds; from 2% in 2018 to 4% in 2021. Analysis by ASH shows that in Great Britain, current vaping prevalence among 16 to 17 year olds increased from 5% in 2018 to 14% in 2024[20].

9. Although vapes can be an effective tool to help smokers to quit, vaping is never recommended for children or non-smokers as it carries risk of harm and addiction.

10. The active ingredient in most vapes (apart from nicotine-free vapes) is nicotine which, when inhaled, is a highly addictive drug. The addictive nature of nicotine means that a user can become dependent on vapes, especially if they use them regularly. Giving up nicotine can be very difficult because the body has to get used to functioning without it. Withdrawal symptoms can include cravings, irritability, anxiety, trouble concentrating, headaches and other mental and physical symptoms. Over half of cigarette smokers want to quit but cannot[21]. Evidence suggests that in adolescence, the brain is more sensitive to the effects of nicotine, so there could be additional risks for young people than for adults[22]. There are also some health risks associated with the other ingredients in vapes. For example, propylene glycol and glycerine (components of e-liquids) can produce toxic compounds if they are overheated[23].

11. The government committed in their manifesto to "take preventative public health measures to tackle the biggest killers and support people to live longer, healthier lives". This includes phasing out the sale of tobacco products and banning vapes from being advertised to appeal to children.

[16] Langley and others. 2020. The effect of tobacco and alcohol consumption on poverty in the UK | Request PDF (researchgate.net)
[17] ASH. 2024. Young people and smoking - ASH
[18] Action on Smoking and Health. 2024. Latest figures show cost of smoking in England up 25% to at least £21.8 billion - ASH.
[19] NHS Digital. 2022. Smoking, Drinking and Drug Use among Young People in England, 2021.
[20] Action on Smoking and Health. 2024. Use of vapes (e-cigarettes) among young people in Great Britain - ASH
[21] ONS. 2024. Adult smoking habits in the UK - Office for National Statistics (ons.gov.uk)
[22] Leslie F. 2020. Unique, long-term effects of nicotine on adolescent brain.
[23] Komura M and others. 2022. Propylene glycol, a component of electronic cigarette liquid, damages epithelial cells in human small airways.

12. Under the previous government, the Department of Health and Social Care launched a UK wide consultation[24] which ran from 12 October to 6 December 2023. The consultation asked for views on the proposals to raise the age of sale of tobacco products, measures approach to tackle youth vaping, and ensure appropriate enforcement of the new rules[25].

13. In the consultation, 63.2% of respondents agreed that the age of sale for tobacco products should be changed so that anyone born on or after 1 January 2009 will never be legally sold tobacco products. 32.2% disagreed and 4.6% said that they did not know. When questioned on prohibiting proxy sales, 73.7% of those that responded to the question were in favour, 20.0% did not agree and 6.3% said that they did not know. Respondents were largely in support of changing the warning notices in retail premises with 71.8% in favour, 22.6% disagreeing and 5.6% of the view that they did not know. The consultation also asked respondents for their views on the scope of products to be included. 63.8% of question respondents were in favour of the legislation including all tobacco products, cigarette papers and herbal smoking products, 30.7% disagreed and 5.5% said that they did not know.

14. The consultation asked respondents whether non-nicotine vapes should be regulated under a similar regulatory framework as nicotine vapes. 59.6% of respondents who answered the question were in favour of a similar regulatory framework, 32.7% were not in favour and 7.8% did not know.

15. In a YouGov/Action on Smoking and Health (ASH) poll in April 2024, 71% of adults supported the goal of a smokefree Britain[26]. ASH polling from 2022 also shows that 89% of the public support making children's play areas smokefree, 62% support banning smoking in seating areas outside restaurants, pubs, and cafes[27].

16. Health policy is a devolved matter in Scotland, Wales, and Northern Ireland. The territorial extent of the measures in the Bill have been discussed with the devolved administrations and is set out in the 'Policies' section of this impact assessment.

[24] DHSC. 2023. Stopping the start: our new plan to create a smokefree generation - GOV.UK (www.gov.uk)
[25] DHSC. Department of Health (Northern Ireland), Scottish Government, Welsh Government. 2024. Creating a smokefree generation and tackling youth vaping: government response.
[26] ASH. 2024. Support-for-Stopping-the-Start-Report.pdf (ash.org.uk)
[27] ASH. 2022. Fifteen-smokefree-years.pdf (ash.org.uk)

Policies

17. The Tobacco and Vapes Bill will be a landmark step in creating a smoke-free UK and stopping the next generation from becoming addicted to tobacco and nicotine. The Bill will be the biggest public health intervention since the ban on smoking in indoor public places in 2007. The Bill is a key pillar of the Government's Health Mission to help people stay healthier for longer, reduce the number of premature deaths from the biggest killers like cancer, and raise the healthiest generation of children in our history. The core measures in the Bill will:

- Create a smoke-free generation, gradually ending the sale of tobacco products across the country - breaking the cycle of addiction and disadvantage.

- Strengthen the existing ban of smoking in public places to reduce the harms of passive smoking, particularly around children and the vulnerable.

- Ban vaping and nicotine products from being deliberately branded and advertised to children to stop the next generation from becoming addicted to nicotine.

- Strengthen enforcement activity to support the implementation of the above measures.

18. More specifically, on tobacco, the Bill will:

- Make it an offence to sell tobacco products, herbal smoking products and cigarette papers to anyone born on or after 1 January 2009, replacing the current age of sale restriction of 18 for these products. As well as changing the age of sale, the Bill will also make it an offence for someone over 18 years old to buy tobacco products on behalf of someone born on or after 1 January 2009 ('proxy purchasing') and require retailers to update age of sale warning notices for tobacco to align with the new age of sale restrictions.

- Provide regulation making powers to expand existing smoke-free places legislation from indoor to outdoor public places and provide powers to create heated tobacco-free places.

- Provide regulation making powers to extend measures in the Bill to other products such as devices that are used for smoking.

19. On vaping and nicotine products, the Bill will:

- Prohibit advertising and sponsorship agreements for vaping and nicotine products. A total ban on the advertising and sponsorship of tobacco products is already in place.

- Ban the sale of non-nicotine vapes and nicotine products to under 18s. The Bill will also ban the purchase of these products on behalf of someone under 18.

- Ban vending machines for the sale of vaping or nicotine products. Vending machines for the sale of tobacco and herbal smoking products are currently banned.

- Ban the free distribution of vaping and nicotine products to people of all ages, with exemptions for arrangements made by public authorities.

- Provide regulation making powers to:

  (i) Regulate the contents and flavours of vaping and nicotine products – and any accessories to vaping products which impact flavour

  (ii) Regulate packaging and product requirements of vaping and nicotine products

  (iii) Regulate the display of vaping and nicotine products in retail premises

- Provide regulation making powers to establish a new registration system which will include registering and reporting requirements for vaping products, nicotine products, tobacco products, herbal smoking products and cigarette papers. This builds on the notification system currently in place for nicotine vapes and tobacco products.

- Provide regulation making powers to create vape-free places.

20. On enforcement, the Bill will:

- Give enforcement authorities in England and Wales the ability to issue Fixed Penalty Notices of £200 for breaches of age of sale and display requirements in the Bill.

- Provide regulation making powers to create a licensing scheme for the retail sale of tobacco products, herbal smoking products, cigarette papers, vaping products, and nicotine products.

21. In addition to the above measures, the Bill modifies, amends, extends and re-enacts several existing tobacco and vaping control measures to create a consistent legislative framework and aid enforcement. Accordingly, the Bill creates some new criminal penalties whilst replacing other existing penalties as part of that consolidation. Consolidating existing legislation serves an important function in helping to ensure that the law is effectively interpreted, applied and enforced. Where there are no substantial policy changes arising from the consolidation and re-enactment of existing legislation, the impact of those measures has not been considered in this impact assessment.

22. The majority of vaping and nicotine product measures in the Bill also extend to herbal smoking products and cigarette papers including measures to prohibit advertising and sponsorship, prohibit the free distribution of products and regulation making powers to prohibit flavours, packaging and displays of products. The ban on vending machines also extends to cigarette papers; herbal smoking product vending machines are already prohibited. While herbal smoking products do not contain nicotine or tobacco, they do

contain cancer causing chemicals, tar and carbon monoxide, similar to a tobacco cigarette. Cigarette papers have also been included as they are burnt with the tobacco.

23. While these restrictions and regulations will also apply to nicotine products, herbal smoking products and cigarette papers, the analysis of these measures only considers nicotine and non-nicotine vaping products. This is in part due to limited evidence on evidence and data on these products. However, the evidence that we do have suggests that the market for these products and use of them among the population is relatively small compared to nicotine and non-nicotine vapes.

24. Several of the measures in the Bill provide regulation making powers for Ministers to introduce policy changes via secondary legislation. The impact of these measures will be subject to the detail of any secondary legislation that is brought forward and therefore a full cost / benefit analysis has not been included in the impact assessment. Secondary legislation will be subject to consultation and, where proportionate, further impact assessments will be completed to assess the costs of benefits of these measures.

Territorial extent of the Bill

25. The Bill is UK wide, the countries that the powers in the Bill will apply to varies between the different policies.

26. Table 1 sets out the expected position on the territorial extent of each measure in the Bill.

Table 1: Territorial extent of powers in the Bill

Policy	Territorial extent
Tackling the harms of tobacco	
Banning the **sale of tobacco products, herbal smoking products and cigarette papers** to anyone born on or after 1 January 2009 (includes changes to existing offences re. proxy purchasing and age of sale notices)	UK-wide
Powers to **extend smoke-free places legislation** from indoor to outdoor public places	UK-wide *Powers will be devolved to each UK nation*
Powers to create **heated tobacco-free places**	UK-wide *Powers will be devolved to each UK nation*
Powers to extend measures in the Bill to **other products (devices)**	UK-wide *Powers will either be reserved or devolved depending on the devolution position of the clause which they amend*
Reducing the appeal of vapes and nicotine products to children	
Banning the **sale of non-nicotine vaping and nicotine products** to under 18s	UK-wide
Banning the sale of vaping products, nicotine products and cigarette papers from **vending machines**	UK-wide
Banning the **advertising and sponsorship** of vaping products, nicotine products, herbal smoking products and cigarette papers	UK-wide
Banning the **free distribution** of vaping products, nicotine products, herbal smoking products and cigarette papers to all ages	UK-wide
Powers to regulate the **flavours and packaging** of products	UK-wide *Powers will allow the UK Government to regulate on behalf of the whole of the UK with consent from the devolved administrations*
Powers to regulate the **display** of products	UK-wide *Powers will be devolved to each UK nation*
Powers to create **vape-free places**	UK-wide

	Powers will be devolved to each UK nation
Powers to establish a new **registration** system for tobacco products, tobacco related devices, herbal smoking products, vaping products and nicotine products.	UK-wide *Powers will allow the UK Government to regulate on behalf of the whole of the UK and may require consent from the devolved administrations*
Enforcement	
Enabling trading standards to issue **fixed penalty notices (FPNs)** for breaches of age of sale, proxy sale, free distribution, tobacco notice, and display restrictions	England and Wales
Powers to create a **licensing scheme** for sales of tobacco products, herbal smoking products, cigarette papers, vaping products and nicotine products	England, Wales and Northern Ireland

Interaction between policies

27. The impact assessments in the subsequent sections of this document consider the costs and benefits of each policy in isolation. However, we recognise that they will interact with each other.

28. The policies considered in this impact assessment will also likely interact with other external factors and any future tobacco and vaping interventions, such as, changes to the provision of smoking cessation services.

29. There is limited evidence on how the different policies will interact with each other and other external factors. How they interact will also depend on the detail of future secondary legislation to regulate tobacco, vapes and nicotine products using powers in the Bill.

30. Further impact assessments will be developed to accompany any secondary legislation that is implemented using powers created by the Bill. Those impact assessments will consider if there is new evidence available to quantify how the policies will interact with each other.

31. At this stage we have provided a qualitative assessment of how the policies within the Bill might interact.

Smoke-free policies

32. The smoke-free generation policy and extending smoke-free places all have the same objective of reducing smoking prevalence and the harms of smoking and passive smoking. Therefore, these policies should be seen as mutually reinforcing and have a larger impact on reducing smoking prevalence, compared to if just one of them was introduced.

33. However, we realise that the total impact on smoking rates is likely to be less than the sum of the individual policies, as the policies will largely be targeting the same group of people.

34. Raising the age of sale for tobacco products so that anyone born on or after the 1 January 2009 will no longer be sold tobacco products will mean that over time, an ever-decreasing proportion of the population will be sold tobacco products. The policies to extend smoke-free places will also reduce the places that people can smoke and buy tobacco. Without access to tobacco products, it is possible that more people could be encouraged to vape or try nicotine products, such as nicotine pouches.

35. As the policies on vaping and nicotine products are intended to restrict the promotion and in turn use of these products by young people, we would expect these policies to mitigate this potential unintended consequence at least partially.

Vaping and nicotine product policies

36. The vaping and nicotine product policies included in the Bill all have the same objective of reducing the number of children and non-smokers that vape or consume nicotine products, such as pouches. Therefore, these policies should be seen as mutually reinforcing and have a larger impact on youth vaping and use of nicotine product rates, compared to if just one of them was introduced.

37. However, we realise that the total impact on youth vaping rates is likely to be less than the sum of the individual policies, as the policies will be targeting the same group of people.

38. A possible unintended consequence of the vaping policies is that it could encourage more people to try smoking. For example, a study from the US found that restricting flavours of vapes led to an additional 15 cigarettes sold for every 0.7mL vape pod not sold[28].

39. As the tobacco policies in the bill are intended to reduce the proportion of people in the population that tobacco can be sold to, further restrict where people can smoke and where people can purchase tobacco, we would expect these policies to mitigate this potential unintended consequence, at least partially.

[28] Friedman and others. 2023. E-cigarette Flavor Restrictions' Effects on Tobacco Product Sales.

Impact assessments

40. The following sections include impact assessments for measures in the Bill which relate to tobacco, vaping and nicotine products.

41. For the smoke-free generation policy, we have provided an estimated Net Present Value (NPV) and Equivalent Annual Net Direct Cost to Business (EANDCB). Based on Regulatory Policy Committee (RPC) guidance on the assessment and scoring of primary legislation measures[29], the assessment of the impacts of the smoke-free generation policy y is in Scenario 1.

42. The section on the policies covering vaping and nicotine products assesses the impact of banning advertising and sponsorship agreements which promote vaping and nicotine products, banning vending machines containing vaping and nicotine products, as well as powers to restrict the packaging and product presentation, flavours and point of sale display of vaping and nicotine products.

43. Most of these measures also extend to herbal smoking products and cigarette papers, and this is consistent with other parts of the Bill. The government's aim is to break the cycle of addiction and disadvantage by creating a smoke-free generation by gradually ending the sale of tobacco products across the country. Therefore, herbal smoking products and cigarette papers have been added to the smoke-free generation policy and other measures due to the harmful nature of smoking. While herbal smoking products do not contain nicotine or tobacco, they do contain cancer causing chemicals, tar and carbon monoxide, similar to a tobacco cigarette. Cigarette papers have also been included as they are burnt with the tobacco.

44. The specific vaping and nicotine product measures that extend to herbal smoking products and cigarette papers are prohibiting advertising, sponsorship and the free distribution of products, and regulation making powers to limit flavours, packaging and displays of products. The ban on vending machines also extends to cigarette papers. Herbal smoking product vending machines are already prohibited.

45. While these restrictions and regulations will also apply to nicotine products, herbal smoking products and cigarette papers, the analysis of these measures only considers nicotine and non-nicotine vaping products. This is in part due to limited evidence on evidence and data on these products. However, the evidence that we do have suggests that the market for these products and use of them among the population is relatively small compared to nicotine and non-nicotine vapes.

46. It has not been possible to provide the same level of assessment for all the vaping policies at this stage.

47. The vaping and nicotine product measures in the Bill will make it an offence to publish, design, print, or distribute an advert in the course of business, or be party to or contribute to a sponsorship agreement that promotes vaping products, nicotine

[29] Regulatory Policy Committee. 2019. RPC case histories: assessment and scoring of primary legislation measures.

products, herbal smoking products or cigarette papers. The Bill will also make it an offence to manage or control premises with vending machines containing vaping products, nicotine products or cigarette papers. For these policies, we have provided an estimated NPV and EANDCB. Using RPC guidance, our assessment of these policies is in Scenario 1.

48. For the vaping policies that will provide powers on restricting the flavour, packaging and product presentation and point of sale displays of vaping and nicotine products we have only been able to provide indicative estimates for a limited number of costs and benefits. As a result, we have not provided a NPV and EANDCB for them at this stage. Using RPC guidance, our assessment of these policies is in Scenario 2. Impact assessments (including NPV and EANDCB assessments) will be developed in advance of secondary legislation being brought forward to implement policy changes using these powers.

49. Due to the uncertainty about the interaction between policies and the differences in how the policies are assessed we do not consider that adding together the NPV's and EANDCBs of these policies would accurately reflect the combined impact of them.

50. Despite providing an NPV and EANDCB for the smoke-free generation policy and vaping policies that will ban advertising and sponsorship agreements which promote vapes and nicotine products and banning sales of vapes and nicotine products from vending machines we have not provided a combined NPV and EANDCB for these measures. The main reason for this is that, as explained above, there is uncertainty about how the policies will interact with each other. It will be the case that some businesses and other stakeholder groups are impacted by more than one of these policies. This may mean that for some costs and benefits the impact is higher or lower than the sum of the individual policies. For example, for both vaping policies we have quantified the savings to government from reduced fires from vapes. However, as the policies will largely be targeting the same groups of people, the overall reduction in vaping because of these policies may be lower than the sum of the reduction of each policy. This means the overall savings to government from reduced fires from vapes may also be lower than the sum of the savings of each policy.

51. In addition, we have used different appraisal periods for the smoke-free generation policy and the measures to prohibit advertising agreements and vending machines. For the smoke-free generation policy we have used a 30-year appraisal period due to the long-term nature of the policy, where both costs and benefits would be expected to accrue beyond the default 10-year appraisal period suggested by HMT Green Book[30]. For both the advertising and vending machine impact assessment we have used a 10-year appraisal period. Although we recognise that some of the costs and benefits may be realised after 10-years, we have limited evidence on the longer term impacts of the products in scope of the policies.

52. We expect that the prohibition of the sale of non-nicotine vapes and nicotine products to under 18s, the prohibition on the free distribution of these products and Fixed Penalty

[30] The Green Book: appraisal and evaluation in central government - GOV.UK (www.gov.uk)

Notices (FPNs) for age of sale and display offences in the Bill, will have limited impacts, particularly on businesses. Given this, we have provided a proportionate assessment of these policies and demonstrated why we do not expect them to have a significant impact on businesses.

53. The assessments of each policy reflect the latest position on the territorial extent of the powers in the Bill, set out above in Table 1.

54. The previous government published a Tobacco and Vapes Bill Impact Assessment on 20 March 2024[31]. Whilst this impact assessment does draw on similar evidence and data there have been a number of publications containing updates to estimates and figures used throughout the Impact Assessment, as well as additional data covering more recent time periods that were not available at the time of the original publication.

55. These publications are from a range of different stakeholders such as other government departments, and external bodies.

56. As a result, we have used the latest data where possible in this version of the impact assessment. The main updates to the data used are presented below, as are the overall changes to the key cost-benefit metrics scrutinised by the Regulatory Policy Committee (RPC). The individual effects of the data are not presented due to the interactions between updated data.

Main updates

57. Compared to the impact assessment published on 20 March 2024 under the previous government we have made several updates to the analysis. The updates are mainly related to using more recent data that has been published since the impact assessment published under the previous government. However, due to when certain new data has been published and the time available to complete the impact assessment to give parliamentarians as much time as possible to consider the impact assessment alongside the Bill it has not been possible to update all aspects of our previous analysis with more recent data. Therefore, we have taken a proportional approach and the decision on what updates we have made has been based on we what we consider will have the most impact on our analysis.

58. The main updates we have made to our analysis is described below.

Smoking prevalence

59. The impact assessment published on 20 March 2024 under the previous government used Office for National Statistics (ONS) estimates on adult smoking prevalence from 2022[32] to estimate some costs and benefits, as well as inform the basis of the modelling of the smoke-free generation policy. Smoking prevalence for 16 and 17 year olds was also based on the latest available full year of data from the Smoking Toolkit Study when the modelling was initially produced (2022).[33]

[31] DHSC. 2024. Tobacco and Vapes Bill: impact assessment - GOV.UK (www.gov.uk)
[32] ONS. 2023. Adult smoking habits in the UK: 2022.
[33] UCL. Smoking Toolkit Study: Cigarette smoking prevalence in 16-17 year olds (2022).

60. New data on adult smoking prevalence was published on the 1 October 2024.[34] The impact assessment and associated modelling has been updated using the latest data. Prevalence for 16 and 17 year olds has also updated with the latest available full year of data, which is now 2023.[35]

61. Smoking prevalence in 2023 was lower than in 2022, particularly among younger age groups. This produces a lower prevalence in the baseline scenario. However, as the policy impact remains a proportional effect on reducing instigation, many of the costs and benefits associated with the policy change only slightly.

62. One notable exception is the benefits associated with Action on Smoking and Health's (ASH's) costs of smoking to society. Based on the latest data, the number of smokers and former smokers has decreased in the population. Therefore, re-calculating the costs of smoking (across health and social care, productivity, and fire costs) per individual smoker and ex-smoker produces higher figures. As a result, in the policy scenario, the same reductions in smokers and former smokers produces higher overall benefits.

GDP Deflators

63. The Impact Assessment published on 20 March 2024 under the previous government used GDP deflators from September 2023[36]. Newer GDP deflators were published on 1 July 2024[37].

64. The March Impact Assessment uses the calendar year GDP deflators. These have been updated throughout cost and benefits estimates when uprating data and assumptions from current prices to 2027 prices for the smoke-free generation policy (the year of policy implementation) and 2025 prices for the vaping policies (potential year of implementation although still to be confirmed). This is done to ensure prices can be compared consistently throughout the impact assessment.

65. These are also used in the RPC impact assessment calculator for the 'Net Present Social Value' and 'Equivalent Annual Net Direct Cost to Business' headline figures reported on the summary sheet of the impact assessment.

66. The changes to the GDP deflators and forecasted per cent change on previous year put the percent change for 2023 slightly higher than previously estimated. The GDP in 2023 was forecast a 2.89% increase on the previous year in the October 2023 GDP deflator publication, however the percentage change reported for 2023 on the previous year was 7.12% in the June 2024 publication. Some of the forecasted years also show a higher per cent increase each year, however some are also lower.

67. Overall, the effect is a higher uprate factor from 2022 and 2023 prices to 2025 and 2027 prices than previously used. This slightly increases both the costs and benefits.

Costs of smoking to society

[34] ONS. 2024. Adult smoking habits in the UK: 2023.
[35] UCL. Smoking Toolkit Study: Cigarette smoking prevalence in 16-17 year olds (2023).
[36] HM Treasury. 2023. GDP deflators at market prices, and money GDP September 2023 (Quarterly National Accounts).
[37] HM Treasury. 2024. GDP deflators at market prices, and money GDP June 2024 (Quarterly National Accounts).

68. The Impact Assessment and associated modelling published in March 2024 for the smokefree generation policy used estimates on the cost of smoking to society produced by ASH. The latest estimates at the time were published in 2023, putting the cost of smoking to England of £17.3 billion.[38] This was made up of the following costs: £14 billion in productivity costs, £1.9 billion in healthcare costs, £1.1 billion in social care costs, and £327 million in fire costs associated with smoking.

69. ASH published new estimates of the cost of smoking in 2024[39], which were the best available that we were aware of at the time of this analysis. This put the cost of smoking to society in England at £21.8 billion. This was made up of the following costs: £18.3 billion in productivity costs, £1.9 billion in healthcare costs, £1.2 billion in social care costs, and £347 million in fire costs associated with smoking. The increase in productivity cost estimates are as a result of updating the original estimates. This was done using additional survey data (the source survey is a longitudinal survey, and therefore additional waves were available) to update a regression, which found a larger earnings penalty associated with smoking status. Combined with an increase in the average wage, the overall productivity cost of smoking increased significantly.

Table 2: Difference in estimates for the cost of smoking to society, 2023 prices (Source: Action on Smoking and Health)

Cost element	**2023 estimate** (£m)	**2024 estimate** (£m)	**Difference** *(2024 minus 2023, £m)*
Healthcare	1,858	1,886	28
Productivity	14,006	18,299	4,293
Social care	1,114	1,232	119
Fire costs	328	347	19
Total	17,306	21,765	4,459

70. The modelling for the smoke-free generation policy[40] uses these estimates, applied to the model outputs, to determine the savings from a reduction in smoking instigation. The new estimates from ASH estimate a higher productivity cost of smoking to society. In the short term, productivity gains represent a major benefit, and therefore the increase in estimated cost results in a larger benefit for the policy.

Tobacco clearances and duty revenue

71. HMRC publish the Tobacco Bulletin which contains monthly statistics on the duty receipts and clearances[41] for cigarettes and other tobacco products. Data from 2022 was used as the latest available at the time in the impact assessment to estimate the number of sales of packs cigarettes and hand rolling tobacco.

72. The latest bulletin provides data for 2023. This shows a decrease in the clearances for cigarettes and hand rolling tobacco in 2022. These figures have been used in this impact assessment for the smoke-free generation policy policy, and reduce the costs to retailers for age verification based on a lower number of baseline sales.

[38] Action on Smoking and Health. 2023. £14bn a year up in smoke – economic toll of smoking in England revealed - ASH.
[39] Action on Smoking and Health. 2023. Latest figures show cost of smoking in England up 25% to at least £21.8 billion - ASH.
[40] DHSC. 2023. Modelling for the smokefree generation policy - GOV.UK (www.gov.uk).
[41] Clearance statistics relate to when tobacco goods pass duty points, at which point duty is due to be paid to HM Revenue and Customs (HMRC) by registered UK businesses.

73. Another cost element considered in the smoke-free generation policy impact assessment is the transfer of tobacco duty. This was not based on HMRC's Tobacco Bulletin, as it used the OBR forecast for duty revenue in 2027. As a result, there has been no change to the duty transfer cost.

Other updates

74. There are a some of other minor updates to the smoke-free generation policy impact assessment based on routine statistical publications:

- ONS Average price of Cigarettes (20 king size filter)[42]
- ONS Annual Survey of Hours and Earnings[43]

Key changes to cost-benefit metrics for smoke-free generation policy As a result of these changes, the Net Present Social Value (NPSV), Business Net Present Value (Business NPV) and Equivalent Annual Net Direct Cost to Business (EANDCB) for the smoke-free generation policy have been affected.

75. Table 3 below shows the changes to each of these cost benefit metrics for the smoke-free generation policy impact assessment. These are in 2019 prices, 2020 present value year (for discounting) as prescribed by the RPC template for the original impact assessment.

Table 3: Comparison of cost benefit metrics, original smokefree generation impact assessment vs updated smoke-free generation policy impact assessment, 2019 prices

Cost-benefit metric	**Original IA (2023)** (£m)	**Updated IA (2024)** (£m)
NPSV	18,584.7	22,059.8
Business NPV	-1913.5	-2,153.3
EANDCB	100.5	113.1

76. There is no longer a Business Impact Target (BIT) that requires all impact assessments to be presented in 2019 prices to be comparable. Based on this, the impact assessment now presents all costs, benefits, and cost benefit metrics in 2024 prices. This is consistent across all measures and provides a clearer interpretation of the figures: '*If this measure were introduced this year, the costs and benefits in today's prices would be this much'*.

77. This does significantly change the figures, with much higher costs and benefits figures, but this is purely presentational, and the measures themselves have not changed. The new cost benefit metrics are displayed in the summary sheet below.

78. Table 4 below shows the difference between the updated figures in 2019 prices, 2020 present value year and 2024 prices, 2024 present value year.

Table 4: Comparison of cost-benefit metrics in different price and present value years. 2024 prices and present values are now presented throughout the impact assessment for consistency.

Cost-benefit metric	**Updated IA: 2019 prices, 2020 present value** (£m)	**Updated IA: 2024 prices, 2024 present value** (£m)
NPSV	22,268.4	30,382.8

[42] ONS. 2024. RPI: Ave price - Cigarettes 20 king size filter - Office for National Statistics (ons.gov.uk)
[43] ONS. 2023. Earnings and hours worked, occupation by four-digit SOC: ASHE Table 14 - Office for National Statistics (ons.gov.uk)

Business NPV	-1,944.7	-2,965.8
EANDCB	102.2	155.8

Vaping and nicotine product policies

79. The impact assessment also provides illustrative cost estimates for vaping measures included as powers in the Bill on flavours, packaging and presentation of vapes and display regulations. Any policies are intended to be introduced as secondary legislation and full impact assessments would be done ahead of any policy introduction.

80. These illustrative cost estimate have also been updated in line with new data (such as wage changes and new GDP deflators).

81. The most significant change for these cost estimates is the use of data related to the vape industry on projected sales, unit costs and profit margins for stakeholders. Previously a static counterfactual was assumed for the vape market, whereas the updated estimates are based on a projected rise in vape sales. These are explained in detail below.

Smoke-free generation

82. This section contains the impact assessment for the smoke-free generation policy.

83. For the smoke-free generation policy, we have provided an estimated Net Present Value (NPV) and Equivalent Annual Net Direct Cost to Business (EANDCB). Based on Regulatory Policy Committee (RPC) guidance on the assessment and scoring of primary legislation measures[44], the assessment of the impacts of the smoke-free generation policy is in Scenario 1.

84. The modelling for the smoke-free generation policy only estimates the impact of implementing the policy in England. However, as described above, the policy is intended to cover the whole of the United Kingdom. The NPV and EANDCB are for the United Kingdom.

85. The new legislation will apply from 1 January 2027, therefore all the costs and benefits were inflated to 2027 prices using GDP deflators[45] in the modelling and calculations. For clarity, these are presented in 2024 prices throughout the impact assessment in order to make the figures more comprehensible. The interpretation of the figures throughout the impact assessment then is: '*If this measure were introduced this year, the costs and benefits in today's prices would be this much'*.

[44] Regulatory Policy Committee. 2019. RPC case histories: assessment and scoring of primary legislation measures.
[45] HM Treasury. 2024. GDP deflators at market prices, and money GDP June 2024 (Quarterly National Accounts).

Title: Raising the legal age of sale for tobacco products **IA No:** DHSCIA9618 (1)	Impact Assessment (IA)
RPC Reference No: RPC-DHSC-5316(3)	**Date:** 05/11/2024
Lead department or agency: Department of Health and Social Care	**Stage:** Final
Other departments or agencies:	**Source of intervention:** Domestic
	Type of measure: Primary legislation
	Contact for enquiries: tobaccocontrol@dhsc.gov.uk

Summary: Intervention and Options

RPC Opinion: GREEN

Cost of Preferred (or more likely) Option (in 2024 prices)			
Total Net Present Social Value	**Business Net Present Value**	**Net cost to business per year**	**Business Impact Target Status** Qualifying provision
£30,382.8m	-£2,965.8m	£155.8m	N/A

What is the problem under consideration? Why is government action or intervention necessary?

Tobacco use remains one of the most significant challenges to public health across the country and is the leading cause of premature death in England. The evidence shows that a large majority of smokers start at a young age. Although a high proportion of people want to quit smoking, it can be very challenging due to the addictive nature of nicotine. Evidence also shows that people who start smoking as teenagers have higher levels of nicotine dependence compared to those starting over 21 and are less likely to make a quit attempt and successfully quit. As a result, the government is taking action to prevent future generations from ever taking up smoking by implementing a smoke-free generation policy to gradually end the sale of tobacco products, herbal smoking products and cigarette papers.

What are the policy objectives of the action or intervention and the intended effects?

The objectives of the smoke-free generation policy are to improve public health by continuing the downward trajectory and get smoking rates to 0%. The government wants to prevent future generations from ever taking up smoking.

The intended outcomes would be a reduction in the number of people taking up smoking in the short-term and getting smoking prevalence to 0% in the long-term. Indicators of success could include a reduction in the number of young people smoking and a reduction in overall smoking prevalence.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

Option 1: Do nothing

Option 2: Introduce legislation to make it an offence for anyone born on or after 1 January 2009 to be sold tobacco products. This option would mean over time an increasing proportion of the population will be unable to be sold tobacco products, effectively increasing the legal age of sale until no one can be sold tobacco.

Will the policy be reviewed? It will be reviewed. **If applicable, set review date:** January 2032

Is this measure likely to impact on international trade and investment?		No		
Are any of these organisations in scope?	**Micro** Yes	**Small** Yes	**Medium** Yes	**Large** Yes
What is the CO_2 equivalent change in greenhouse gas emissions? (Million tonnes CO_2 equivalent)		**Traded:** N/A	**Non-traded:** N/A	

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister: Andrew Gwynne Date: 04/11/2024

Summary: Analysis & Evidence

Policy Option 2

Description:

FULL ECONOMIC ASSESSMENT

Price Base Year 2024	PV Base Year 2024	Time Period Years	Net Benefit (Present Value (PV)) (£m)		
			Low: Optional	**High:** Optional	**Best Estimate:** 30,382.8

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low				
High				
Best Estimate	10.0		188.4	**2,967.3**

Description and scale of key monetised costs by 'main affected groups'

Appraisal period is 30 years from the date of implementation (1 January 2027). The reduction in tobacco consumption over 30 years is expected to reduce profits for tobacco retailers by £2,129, and for tobacco wholesalers by £457m. Tobacco retailers also expected to incur familiarisation costs of £8m, costs due to increased time to check people's IDs of £84m and costs to put up new signage in shops of £0.2m. These costs are in 2024 prices.

Other key non-monetised costs by 'main affected groups'

If this policy leads to more people attempting to quit smoking, it could lead to additional people using local stop smoking services, which would impose a cost on local authorities.
The policy could also lead to an increase in the number of people that are checked for ID when purchasing tobacco, which could lead to an increase in aggression and abuse towards retail workers.

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low				
High				
Best Estimate	0		1,111.7	**33,350.1**

Description and scale of key monetised benefits by 'main affected groups'

Appraisal period is 30 years from the date of implementation (1 January 2027). Expected benefits are the health benefits that would accrue from the reduction in the number of people taking up smoking, resulting in monetised QALYs gains from fewer deaths of £417m. There will also be wider societal benefits: productivity gains of £27,298m, reduced healthcare usage costs of £2,814m, reduced social care usage costs of £1,838m, and reductions in fire costs associated with smoking of £982m.

Other key non-monetised benefits by 'main affected groups'

Reductions in disease cases of lung cancer, stroke, CHD and COPD as a result of fewer smokers.
There could also be health benefits in terms of reduced morbidity and mortality due to reduced second hand smoke exposure.
There could also be benefits in the form of reduced litter due to fewer smokers.

Key assumptions/sensitivities/risks **Discount rate (%)** 1.5%/3.5%

Assumptions: The estimated effect size in our central scenario is based on feedback from expert stakeholders on the most likely size of the impact based on different scenarios that we presented to them. The majority of the estimated costs and benefits are based on the assumed size of the effect of this policy. The estimated costs and benefits for the UK are based on the estimates for England, scaled to include Wales, Scotland, and Northern Ireland based on population sizes.
Sensitivity: The effect the policy would have on smoking instigation rates.
Discount rate: 1.5% for health impacts, 3.5% for monetised impacts.

BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 155.8	**Benefits:** 0	**Net:** 155.8	N/A

Evidence Base

Problem under consideration and rationale for intervention

86. In 2023, adult smoking prevalence in the UK was 11.9% (around 6.0 million people) and in England was 11.6%, (around 4.9 million adults)[46]. Smoking is the single leading cause of preventable illness and death in England[47] and has a significant impact on a person's health throughout their life.

87. Smoking is also a significant risk for poor pregnancy-associated health outcomes. Women who smoked during pregnancy were 2.6 times more likely to give birth prematurely[48]. These babies were more likely to have a lower birth weight and were 4.1 times more likely to be small-for-date babies[49]. Smoking increases the risk of birth defects which can result in poorer health outcomes later in life. In areas with the highest smoking rates, in high income countries, up to 20% of stillbirths may be caused by smoking[50].

88. Smoking also significantly increases the risk of non-communicable diseases, particularly cancer, respiratory disease, and circulatory disease[51]. It is estimated that up to two-thirds of smokers die of smoking[52] and those who start smoking as a young adult lose an average of 10 years of life expectancy[53]. In the UK, around 80,000 deaths are attributable to smoking, including about:

- 64,000 deaths per year in England[54]
- 8,900 deaths per year in Scotland[55]
- 3,800 deaths per year in Wales[56]
- 2,200 deaths per year in Northern Ireland[57]

89. Later in life, it is estimated that smokers also need care on average 10 years earlier than they would otherwise have[58] - often while still of working age.

[46] ONS. 2024. Adult smoking habits in the UK - Office for National Statistics (ons.gov.uk).
[47] OHID. 2021. Health Profile for England 2021.
[48] Selvaratnam and others. 2023. Risk of premature birth from smoking while pregnant more than double previous estimates.
[49] Selvaratnam and others. 2023. Risk of premature birth from smoking while pregnant more than double previous estimates.
[50] Flenady and others. 2011. Major risk factors for stillbirth in high-income countries: a systematic review and meta-analysis.
[51] OHID. 2022.Smoking and tobacco: applying All Our Health.
[52] Banks E and others. 2015. Tobacco smoking and all-cause mortality in a large Australian cohort study: findings from a mature epidemic with current low smoking prevalence.
[53] Royal College of Physicians. 2018. Hiding in plain sight: Treating tobacco dependency in the NHS.
[54] OHID. Local Tobacco Control Profiles: Smoking attributable mortality (new method). Directly standardised rate - per 100,000.
[55] Scottish Public Health Observatory. Smoking attributable deaths.
[56] Public Health Wales Observatory. Smoking in Wales.
[57] Department of Health, Social Services and Public Safety. Ten year tobacco control strategy for Northern Ireland.
[58] Action on Smoking and Health. 2021. The cost of smoking to the social care system.

90. It is estimated that smokers are also 1.6 times more at risk of dementia[59], including Alzheimer's and vascular dementia, and 14% of dementia cases can be attributed to smoking internationally[60].

91. There are wide health disparities, socioeconomic and geographical, in England. There is an almost 19 year gap in healthy life expectancy between the most and least affluent areas. People in the most deprived areas, or living in relative deprivation, get multiple long-term health conditions 10 to 15 years earlier than in the least deprived areas, and spend more years in ill health[61].

92. Smoking is one of the most important preventable causes of disparities in health and a significant contributor to the gap in life expectancy[62]. For some conditions, such as lung cancer and severe Chronic Obstructive Pulmonary Disease (COPD), smoking is the main driver and for others, such as premature cardiovascular disease (CVD), smoking is a major factor. Reducing smoking rates is therefore one of the biggest single health interventions that we can make to level up the nation[63].

93. Smoking prevalence is also higher among certain populations, for example:

Age: In the UK, prevalence is higher among those who are younger (14.0% of 25 to 34 year olds) compared with those who are older (8.2% of those aged 65 and over)[64].

Table 5: Smoking prevalence by age

Age group	Smoking prevalence (2023)
18 to 24	9.8%
25 to 34	14.0%
35 to 44	12.9%
45 to 54	13.9%
55 to 64	13.2%
65+	8.2%

Ethnicity: In the UK, prevalence is higher among people with a mixed ethnic background (14.8%)[65].

Table 6: Smoking prevalence by ethnicity

Ethnicity	Smoking prevalence (2023)
White	12.4%
Mixed	14.8%
Asian	6.6%
Chinese	5.6%

[59] Livingston et al. 2020. Dementia prevention, intervention, and care: 2020 report of the Lancet Commission - The Lancet.
[60] Barnes. 2011. The Projected Impact of Risk Factor Reduction on Alzheimer's Disease Prevalence - PMC (nih.gov).
[61] Barnett and others. 2012. Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross-sectional study.
[62] PHE. 2021. Health Profile for England 2021.
[63] UKHSA. 2018. Health Matters: Stopping smoking - what works?
[64] ONS. 2023. Adult smoking habits in the UK.
[65] ONS. 2023. Adult smoking habits in the UK.

Black	6.7%
Other	14.8%

Deprivation: In England, prevalence in the most deprived decile of LAs is higher (14.6%) compared with the least deprived decile of LAs (9.3%)[66].

Table 7: Smoking prevalence by deprivation decile

Deprivation decile (IMD2019)	Smoking prevalence (2023)
Most deprived decile	14.6%
Second most deprived decile	14.2%
Third more deprived decile	11.6%
Fourth more deprived decile	11.7%
Fifth more deprived decile	12.6%
Fifth less deprived decile	13%
Fourth less deprived decile	10.3%
Third less deprived decile	9.9%
Second least deprived decile	11.3%
Least deprived decile	9.3%

Socioeconomic group: In the UK, prevalence is highest among people in routine and manual occupations (20.2%), while it is lowest among people in managerial and professional occupations (7.9%)[67].

Table 8: Smoking prevalence by socio-economic classification

Socio-economic classification	Smoking prevalence (2023)
Managerial and professional occupations	7.9%
Intermediate occupations	13.7%
Routine and manual	20.2%
Never worked, long-term unemployed	15.9%

Housing tenure: In the UK, prevalence is highest among people that rent from local authority or housing association (25.7%), while it is lowest among people that own outright (7.0%) or own with a mortgage (8.0%)[68].

Table 9: Smoking prevalence by housing tenure

Housing tenure	Smoking prevalence (2023)
Owns outright	7.0%
Owns with mortgage	8.0%
Rents: local authority or housing association	25.7%
Rents: privately	17.5%

[66] OHID. Local Tobacco Control Profiles: Smoking prevalence by deprivation deciles.
[67] ONS. 2023. Adult smoking habits in the UK: 2022.
[68] ONS. 2023. Adult smoking habits in the UK: 2022.

94. Smoking also places a significant cost on society. Action on Smoking and Health (ASH) estimates that the total costs of smoking in England is £21.8 billion[69]. This includes a £18.3 billion loss to productivity per year through smoking related lost earnings, unemployment, and early death, as well as costs to the NHS and social care sector of £1.9 billion and £1.2 billion, respectively.

95. In terms of the burden on the NHS, it is estimated that in 2019 to 2020, 448,031 NHS hospital admissions were attributable to smoking[70]. Cancer Research UK (CRUK) analysis also estimates that up to 75,000 GP appointments could be attributed to smoking each month - equivalent to over 100 appointments every hour[71].

96. The health impacts of smoking also place a burden on social care. Analysis by ASH estimates that smokers need care on average 10 years earlier than they would otherwise have[72] - often while still of working age.

97. Data over the last 5 years shows most smokers want to quit[73]. However, in 2022, only 37% of smokers tried to quit and 26% of those reporting making a quit attempt successfully quit[74]. Three-quarters of smokers would never have started if they had the choice again[75]. It is much easier never to start than to have to quit.

98. In general, attempts to stop smoking are accompanied by powerful urges to smoke (cravings) which are a major source of relapse and occur despite the individual concerned wanting to remain abstinent. Cravings overpower and undermine resolve not to smoke. These cravings make it particularly difficult to quit unaided using willpower alone. For example, evidence shows that 95% of unsupported quit attempts end in relapse within a year[76]. Smokers are more likely to successfully quit smoking if quit attempts are supported, such as with nicotine replacement therapies (NRT) or vapes and behavioural support. For example, smokers that use a local stop smoking service are three times as effective in making a successful quit attempt compared to making an unaided quit attempt[77].

99. These problems present examples of the difference between what smokers would prefer to do and what they are actually able to do with respect to tobacco consumption.

100. The great majority of smokers start at a young age, with 66% starting before the age of 18 and 83% before the age of 20[78]. People who start smoking under the age of 18 have higher levels of nicotine dependence compared to those starting over 21[79], and are less likely to make a quit attempt and successfully quit.

[69] Action on Smoking and Health. 2024. Latest figures show cost of smoking in England up 25% to at least £21.8 billion - ASH.
[70] OHID. Local Tobacco Control Profiles: Smoking attributable hospital admissions (new method). This indicator uses new set of attributable fractions, and so differ from that originally published.
[71] Cancer Research UK. 2023. Ending smoking could free up 75,000 GP appointments each month.
[72] Action on Smoking and Health. 2021. The cost of smoking to the social care system.
[73] ONS. 2024. Adult smoking habits in the UK Statistical bulletins.
[74] University College London. Top line findings from the Smoking Toolkit Study.
[75] PHE. 2021. –Smokers encouraged to take part in Stoptober, as they report smoking more during pandemic.
[76] Hughes JR, Keely J, Naud S,. 2004. Shape of the relapse curve and long-term abstinence among untreated smokers
[77] National Centre for Smoking Cessation and Training. Stop smoking services: increased chances of quitting.
[78] PHE. 2015. Health matters: smoking and quitting in England.
[79] Ali et al. 2020. Peer Reviewed: Onset of Regular Smoking Before Age 21 and Subsequent Nicotine Dependence and Cessation Behavior Among US Adult Smokers - PMC (nih.gov).

101. A key factor in predicting why some young people are more likely to take up smoking compared to others is whether people in their social network smoke. Evidence suggests that young people whose parents smoke could be three or even four times more likely to smoke than young people of non-smoking households[80, 81]. In addition, a study based on data from the UK Millennium Cohort Study[82] found smoking uptake among 14 to 17 year olds was more common if their caregivers or friends smoked.

102. Social norms can have positive as well as negative effects. Research from the US[83] has found that pervasive smoking among peer groups is strongly associated with susceptibility to initiate smoking among non-smokers, and conversely, low rates of smoking is associated with readiness to quit among smokers.

103. As a result, tobacco use remains one of the most significant challenges to public health in this country, and further action is required to reduce the uptake of smoking by young people. In doing so, they will not have their choices taken away by addiction to nicotine, and the negative externalities of smoking will be reduced.

104. Phasing out the sale of tobacco by raising the legal smoking age by one year each year until it applies to the whole population was a specific recommendation in *The* Khan *Review: making smoking obsolete*[84] to reduce the number of people that take up smoking.

105. There is also public support for raising the legal age of sale for smoking by one year each year. A survey by YouGov found 71% of adults in Great Britain support this policy[85].

106. The smoke-free generation policy will also extend to herbal smoking products and cigarette papers. The smoke of herbal smoking products contains cancer causing chemicals, tar and carbon monoxide, similar to a tobacco cigarette. Cigarette papers contain bleaches and dyes which add to the range of toxicants in the smoke. Both products are subject to current age of sale legislation prohibiting their sale to under 18s.

Evidence

Evidence for incremental age increases on age of sale

107. The policy option to progressively increase the age of sale for tobacco has not yet been implemented anywhere else in the world.

108. In January 2023, New Zealand introduced the Smokefree Environments and Regulated Products (Smoked Tobacco) Amendment Act. This included three new policies to reduce smoking rates:

[80] Turner-Warwick M. 1992. Smoking and the Young: A report of a working party of the Royal College of Physicians.
[81] DHSC. 2021. Children whose parents smoke are 4 times as likely to take up smoking themselves.
[82] Vrinten and others. 2022. –Risk factors for adolescent smoking uptake: Analysis of prospective data from the UK Millennium Cohort Study.
[83] Roberts and others. 2015. Adolescent Social Networks: General and Smoking-Specific Characteristics Associated With Smoking.
[84] Dr Javed Khan OBE. 2022. The Khan Review: Making smoking obsolete.
[85] YouGov. 2023. Would you support or oppose raising the legal smoking age by one year each year, effectively making it so that smoking is illegal for those born on 1 January 2009 or later?

- ‘Smokefree Generation’ policy: changing the age of sale. A ban on selling tobacco products to anyone born in or after 1 January 2009.

- Licensing: reducing the number of retailers that could sell tobacco. A maximum of 600 retail premises would be allowed to sell smoked tobacco products (down from 6,000 – a 90% reduction).

- Denicotinisation: reducing the amount of nicotine in tobacco products. Implementing an 0.8 mg/g limit on nicotine content in tobacco products (compared to approximately 15 to 16mg/g of nicotine in full strength cigarettes).

109. The Smokefree Generation policy meant New Zealand became the first country in the world to introduce a restriction on the sale of tobacco to anyone born after a specified date, as part of its Smokefree 2025 Action Plan[86]. This policy to reduce smoking made it an offence to sell smoked tobacco products to anyone born on or after 1 January 2009, first taking effect in January 2027, when those born in 2009 will start turning 18 years old.

110. However, in November 2023, New Zealand’s new government announced that it planned to repeal this legislation[87]. The legislation was repealed by the Smokefree Environments and Regulated Products Act 2024[88].

111. Despite this change in policy, the decision to implement in the first place was supported by modelling that estimated the impact of a smokefree generation on smoking prevalence.

112. Unpublished modelling, commissioned by the Ministry of Health, were included in New Zealand’s regulatory impact statement[89]. The modelling estimated the impact of a smoke free generation on smoking prevalence. Modelling results showed a smokefree generation would have a relatively small impact on smoking prevalence in the initial years of the policy, but assuming full compliance (uptake rates are 0% from implementation), the policy could halve smoking prevalence in New Zealand within 10 to 15 years of implementation.

113. Similarly, a modelling study published in 2018[90] also estimated that a smokefree generation would halve smoking prevalence by 2025 (14 years after implementation) in New Zealand for those aged under 45 years, compared to business as usual, but not for older ages. This modelling also assumed full compliance: uptake rates are 0% from implementation.

114. Further modelling was also commissioned by the New Zealand Government to provide further estimations[91] on the impact of the new policies introduced as part of the

[86] New Zealand Government: Ministry of Health. 2021. Smokefree Aotearoa 2025 Action Plan.
[87] BBC. 2023. New Zealand smoking ban: Health experts criticise new government's shock reversal.
[88] Smokefree Environments and Regulated Products Amendment Act 2024 No 6, Public Act – New Zealand Legislation
[89] New Zealand Government: Ministry of Health. 2021. Regulatory Impact Statement: Smokefree Aotearoa 2025 Action Plan.
[90] van der Deen and others. 2018. Impact of five tobacco endgame strategies on future smoking prevalence, population health and health system costs: two modelling studies to inform the tobacco endgame.
[91] Ouakrim and others. 2023. Tobacco endgame intervention impacts on health gains and Māori:non-Māori health inequity: a simulation study of the Aotearoa/New Zealand Tobacco Action Plan.

Smokefree 2025 Action Plan. The previous simulation model was expanded upon to enhance its capabilities, which included a model to simulate population smoking and vaping behaviours. The new model, named Scalable Health Intervention Evaluation (SHINE), was then used to assess the impact of the New Zealand Government's Smokefree 2025 action plan, including the smokefree generation, on smoking prevalence, mortality, and health-adjusted life year (HALY). This model took into consideration that social supply was likely and did not assume full compliance. It was assumed that uptake rates were 10% of business as usual 10 years after the policy s introduced.

115. The results of this study also showed a smokefree generation would have a relatively small impact on smoking prevalence in the initial years, but on its own could achieve a 5% smoking prevalence for all population groups from at least 2040 onwards.

116. In addition, the model estimated that 209 (95% UI: 159 to 258) premature deaths would be averted (deaths occurring before 75 years) in all population groups from 2020 to 2050, a 0.01% reduction compared with business as usual (1,497,389 premature deaths)[92]. The majority (84%) of the deaths averted were estimated to be after 2040: from 2040 to 2050, 175 premature deaths were estimated to be averted.

117. Similarly, it was estimated that the majority (98%) of HALYs gained were after 2040, with 1,318 HALYs gained between 2020 to 2040 and 74,200 gained between 2041 to 2131. This further highlights the long-term impacts of a smokefree generation. By focusing on young people, the overall health benefits become greater over time, as early intervention and the avoidance of youth initiation contributes to reducing the prevalence of smoking-related health issues in the whole population, as those generations get older.

118. There have been a further two studies that have modelled the impact of implementing a policy to create a smokefree generation, including studies for Singapore[93] and Solomon Islands[94]. The results were similar to the New Zealand modelling, and the projections supported that a smokefree generation is estimated to reduce smoking prevalence and increase health gains in the long-term.

119. The modelling results from Singapore found that a smokefree generation has one of the greatest projected long-term impacts (over 50 years) in reducing the prevalence of cigarette users and combined prevalence of cigarette users and vape users. Additionally, it was found that the smokefree generation scenario would achieve the greatest health benefits (in terms of Quality Adjusted Life Years (QALY) gains) over the 50 years projected, with a steep rise in health benefits after 20 years of implementation. This was in comparison to eleven other policy scenarios including: increasing the minimum legal age, two tax scenarios where tax is raised at differing increments, three

[92] Ouakrim and others. 2023 Tobacco endgame intervention impacts on health gains and Māori:non-Māori health inequity: a simulation study of the Aotearoa/New Zealand Tobacco Action Plan. [Supplementary Material]
[93] Doan and others. 2019. Evaluating smoking control policies in the e-cigarette era: a modelling study.
[94] Singh and others. 2020. Impact of tax and tobacco-free generation on health-adjusted life years in the Solomon Islands: a multistate life table simulation.

scenarios reflecting the effects of introducing vapes into the Singapore Market, and 6 further scenarios reflecting differing combinations of all policies explored.

120. The modelling study estimating the impact of a smokefree generation implemented in the Solomon Islands projected that the policy would not achieve the countries aim of being smoke free in 2025. However, results did show that the policy would achieve a greater reduction in prevalence over the projected 20 years than business as usual. The study found that about 8% of the health gains estimated from a smokefree generation policy are likely realised in the first 20 years after initiation, with the remainder occurring at least 20+ years into the future.

Evidence for raising the age of sale

121. As identified as part of the 2024 Public Health Scotland scoping review of age-restriction interventions for tobacco and nicotine vapour products in children and young people[95], there is evidence that raising the legal age of sale for tobacco is effective at reducing youth smoking prevalence.

122. In 2007, the legal age of sale for tobacco in England, Wales and Scotland was increased from 16 to 18 years old. Evidence shows that this increase in the legal age of sale for tobacco did reduce smoking prevalence among young people in England, both in the short-term[96, 97] and the long-term[98].

123. Both studies looking into the short-term impacts concluded that there were immediate falls in the prevalence of youth smoking following the increase in the age of sale. The study by UCL published in 2010 found that following the increase in the legal age of sale of tobacco to 18 years, smoking prevalence declined across all age groups. However, the largest decrease was seen among 16 to 17 year olds, with prevalence reducing by nearly 30% following the increase in the age of sale. For comparison, prevalence only declined by around 11% among 18 to 24 year olds.

124. In addition to reporting the short-term reductions in youth smoking, the study by Millet and others in 2011 found that the increase in age of sale had a similar impact in different socio-economic groups.

125. In 2020, UCL also published a study that assessed the long-term impacts of the increase in the age of sale of tobacco from 16 to 18. The study found that rates of ever-smoking[99] declined more among 16 and 17 year olds compared to 18 to 24 year olds. They reported that for every post-implementation month, the odds of ever smoking were around 0.3% lower for those aged 16 and 17 compared to 18 to 24 year olds. Thus, this

[95] Public Health Scotland. 2024. Scoping review: Age-restriction interventions for tobacco and nicotine vapour products in children and young people (publichealthscotland.scot)
[96] Fidler and West. 2010. Changes in smoking prevalence in 16–17-year-old versus older adults following a rise in legal age of sale: findings from an English population study.
[97] Millet and others. 2011. Increasing the age for the legal purchase of tobacco in England: impacts on socio-economic disparities in youth smoking.
[98] Beard and others. 2020. Long-term evaluation of the rise in legal age-of-sale of cigarettes from 16 to 18 in England: a trend analysis.
[99] A person was defined as an ever smoker if they either smoked cigarettes (including hand-rolled) every day; smoked cigarettes (including hand-rolled), but not every day; did not smoke cigarettes at all but did smoke tobacco of some kind (such as pipe or cigar); stopped smoking completely in the last year; stopped smoking completely more than a year ago.

equates to a difference in odds of about 5.4% and 14.4% over 18 months and 48 months post implementation, respectively.

126. There is also evidence from other countries on the impact of raising the legal age of sale. In 2019, the legal age of sale for tobacco was raised from 18 to 21 in all states in the US and named the tobacco 21 policy (T21) [100].

127. Prior to the implementation of T21, the Institute of Medicine (IoM) conducted an expert elicitation process to estimate the impact raising the age of sale from 18 to 19, 21 and 25 would have on smoking instigation rates for the US population[101]. The committee estimated that raising it by one year to 19 would reduce smoking instigation rates by 10% for the four age groups closest to the new minimum legal age (15 to 18 year olds) and by 5% for all people younger (ages 14 and under). The committee also assumed a 'rebound effect,' meaning a delay in instigation to a later age.

128. There are now also multiple studies from the US looking at the impact T21 has had. The first two states to implement T21 state-wide in the US were California and Hawaii. Findings from a study[102] that evaluated the legal age increase indicated that the implementation of state-wide T21 policies was associated with a 13.1% reduction in monthly sales of cigarette packs in California and an 18.2% reduction in Hawaii, relative to the mean number of monthly packs sold before the implementation of T21. Results from another study[103] also found that after implementing T21 in Hawaii the average monthly cigarette unit sales dropped significantly by 4.4% in large convenience stores. However, neither study provided information on the age of tobacco purchasers.

129. Further states began to implement T21, and a US study from 2019[104] looked at the difference in the odds of smoking for 18 to 20 year olds that had, and had not, been exposed to age of sale legislation. The study found that individuals aged 18 to 20 years in places where the legal age of sale was 21 were 39% less likely participate in smoking compared to 21 and 22 year olds.

130. These findings are further supported by studies based on data from Needham, Massachusetts[105],Cleveland, Ohio[106], and the states of Oregon[107], Minnesota[108], and California[109,110], which reported a reduction in tobacco use amongst the youth population once the T21 legislation was introduced. The findings are also supported by similar

[100] U.S. Food and Drug Administration. Tobacco 21.
[101] Institute of Medicine. 2015. The Effect on Tobacco Use of Raising the Minimum Age of Legal Access to Tobacco Products - Public Health Implications of Raising the Minimum Age of Legal Access to Tobacco Products.
[102] Ali and others. 2020. Tobacco 21 policies in California and Hawaii and sales of cigarette packs: a difference-in-differences analysis.
[103] Glover-Kudon and others. 2020. Cigarette and cigar sales in Hawaii before and after implementation of a Tobacco 21 Law.
[104] Friedman and others. 2019. Tobacco-21 laws and young adult smoking: quasi-experimental evidence.
[105] Schneider and others. 2016. Community reductions in youth smoking after raising the minimum tobacco sales age to 21.
[106] Trapl and others. 2022. Evaluation of Restrictions on Tobacco Sales to Youth Younger Than 21 Years in Cleveland, Ohio, Area.
[107] Oregon Health Authority. 2019. Oregon's Tobacco 21 Law: Impact Evaluation.
[108] Minnesota Department of Health. 2022. SHIP Supports local Tobacco 21 policies, helping to reduce youth commercial tobacco use.
[109] Dove and others. 2021. Smoking behavior in 18–20 year-olds after tobacco 21 policy implementation in California: A difference-in-differences analysis with other states.
[110] Sax and Doran. 2022. Evaluation of Risk Perception of Smoking after the Implementation of California's Tobacco 21 Law.

studies that examine the effect of the T21 policy on multiple areas in the US within a youth population[111,112,113,114,115].

131. However, results from a study published in 2023 that looked at a nationally representative population of the US found no association between T21 policy exposure and cigarette use within youth and young adults (ages 15 to 21 years)[116]. However, authors hypothesised that this is likely to be linked to the fact that the average age of smoking initiation has increased in the US in the past two decades. This is related to evidence[117] that shows that currently a higher proportion of cigarette smokers are initiating cigarette use in early adulthood (ages 18 to 23 years) versus adolescence (age <18 years).

132. Furthermore, two studies[118,119] that found that T21 did not reduce cigarette smoking for all age groups studied reported that it may be linked to a poor compliance with T21 regulations by tobacco retailers at the point of sale, as identified by four other studies[120,121,122,123].

[111] Abouk and others. 2023. Estimating the Effects of Tobacco-21 on Youth Tobacco Use and Sales.
[112] Friedman and Wu. 2020. Do Local Tobacco-21 Laws Reduce Smoking Among 18 to 20 Year-Olds?
[113] Agaku and others. 2022. A Rapid Evaluation of the US Federal Tobacco 21 (T21) Law and Lessons From Statewide T21 Policies: Findings From Population Level Surveys.
[114] Colston and others. 2022. Tobacco 21 laws may reduce smoking and tobacco-related health disparities among youth in the U.S.
[115] Hansen and others. 2022. Do State Tobacco 21 Laws Work?
[116] Patel and others. 2023. Measuring the impact of state and local Tobacco 21 policies in the United States: A longitudinal study of youth and young adults ages 15-21.
[117] Barrington-Trimis and others. 2020. Trends in the Age of Cigarette Smoking Initiation Among Young Adults in the US From 2002 to 2018.
[118] Macinko and Silver. 2018. Impact of New York City's 2014 Increased Minimum Legal Purchase Age on Youth Tobacco Use.
[119] Wilhelm and others. 2022. Local Tobacco 21 Policies are Associated With Lower Odds of Tobacco Use Among Adolescents.
[120] Muralidharan and others. 2019. Tobacco Advertising and ID Checks in Columbus, Ohio, in Advance of Tobacco 21.
[121] Roeseler and others. 2019. Assessment of Underage Sales Violations in Tobacco Stores and Vape Shops.
[122] Silver and others. 2016. Retailer compliance with tobacco control laws in New York City before and after raising the minimum legal purchase age to 21.
[123] Schiff and others. 2022. E-cigarette and Cigarette Purchasing Among Young Adults Before and After Implementation of California's Tobacco 21 Policy.

Policy options

Policy objective

133. The policy objective is to:

- Improve public health by continuing the downward trajectory and get smoking prevalence to 0% and reducing harms associated with tobacco use The government wants to prevent future generations from ever taking up smoking.

- There may be wider benefits such as a narrowing of health inequalities and a reduction in the levels of exposure to second hand smoke, which is particularly harmful to the health of children.

Description of options considered

Policy option list

134. The policy option list covers a range of options with brief descriptions and reasons for exclusion where applicable:

- Do nothing – This constitutes the baseline which raising the age of sale is measured against. This option involves zero costs and zero benefits in this impact assessment. The challenge, to which raising the age of sale may contribute, is to secure a further decline in the existing trend of smoking, particularly amongst young people.

- Smoke-free generation– This option would make it an offence for anyone born on or after 1 January 2009 to be sold tobacco products. It would also make it an offence to purchase tobacco products on behalf of someone born on, or after 1 January 2009 ('proxy purchasing'). This option would achieve the objective of improving public health by preventing future generations from ever taking up smoking and getting smoking prevalence to 0%.

- Raising the age of sale for tobacco products to a specific age – This option has been discounted as it does not achieve the policy objective of improving public health by preventing future generations from ever taking up smoking and getting smoking prevalence to 0%. Evidence from the UK when the age of sale was raised from 16 to 18, and from other countries, suggest this approach would reduce smoking prevalence. However, it does not achieve our public-supported ambition of being smoke-free. There is no safe age to smoke and so it is logical to progressively raise the age of sale to protect future generations from the harms of smoking in the long-term.

- Increasing tobacco duties – Increasing the price of tobacco is an effective measure to reducing smoking prevalence[124]. However, this approach does not

[124] Chaloupka and others. 2012. Tobacco taxes as a tobacco control strategy.

achieve the policy objective of improving public health by preventing future generations from ever taking up smoking and getting smoking prevalence to 0%. We want to take the best and most effective action to end smoking for good. In addition, the government already routinely increases duties year on year.

- Prohibiting the sale of tobacco products – this option would mean that no one, of any age, would be able to be sold tobacco products. While this option would prevent future generations from taking up smoking and may be effective in achieving the government's objective of getting smoking prevalence to 0%, it has not been considered further as the government has also been clear that it will not prevent any adults that currently smoke from being sold tobacco. The policy is not about criminalising those who smoke.

- Voluntary options:

(i) Voluntary increases in the age of sale - This would allow industry to decide if they wished to stop selling tobacco products to people below a certain age.

(ii) Education – This would mean providing further information to the public about the dangers of smoking to discourage them from taking up smoking.

135. Voluntary options have been discounted as they do not achieve the policy objective. In addition, voluntary options are also likely to contravene Article 5.3 of the World Health Organization's Framework Convention on Tobacco Control (FCTC)[125], which prevents public health policy from the vested interests of the tobacco industry, including through non-binding agreements.

136. Across all these options, other existing measures would remain in place (such as Standardised Packaging, and the Display regulations). Other activities around tobacco control will also continue and general campaigns and services will be available to smokers (such as Stoptober and Local Stop Smoking Services). Funding is also available to support people to quit smoking and additional investment was announced last year including an additional £70 million per year to support local authority-led stop smoking services and £15 million per year for new national campaigns, which will include communicating the benefits of quitting and the support available. Also, in April 2023, several other tobacco control policies were announced[126]. This included a national 'swap to stop' scheme, which will offer a million smokers across England a free vaping starter kit and funding for financial incentives for all pregnant smokers to encourage them to quit.

Option 1: Do nothing

137. Option 1: This constitutes the baseline against which raising the age of sale for tobacco is assessed. This option would mean that the legal age of sale for purchasing tobacco would remain at 18.

[125] WHO FCTC. 2013. Guidelines for implementation of Article 5.3.
[126] DHSC and Neil O'Brien MP. 2023. Minister Neil O'Brien speech on achieving a smokefree 2030: cutting smoking and stopping kids vaping.

138. The counterfactual trend in smoking prevalence is considered the same in all options, with the policy option below measuring the marginal impact against the baseline (presented here alongside a summary of the modelling). These are discussed below in the relevant sections when assessing the options.

Model summary

139. To understand the impact of implementing the smoke-free generation policy in England, modelling has been used to forecast changes in smoking prevalence over time. The model is a Markov model, commonly used in academia to analyse dynamic processes like smoking behaviour. The following paragraphs summarise the inputs and assumptions used in the modelling and a full technical description of the modelling can be found in Annex A.

140. The model uses ONS mid-year population estimates[127] for the number of people in England by sex and single year of age in 2023. The model only considers those aged 14 and over, with the number of 13 year olds entering the model each year assumed to be constant, all of which are assumed to be never smokers in every forecasted year. While there are a small number of smokers who are 13 and younger, the model treats this as a negligible number. The model considers people up to the age of 89.

141. The initial population is segmented into discrete states (smoker, former smoker, non-smoker) based on a range of data sources:

    a. NHS Digital's *Smoking, Drinking and Drug use among young people in England*[128] for those aged between 13 and 15.

    b. UCL's *Smoking Toolkit Study*[129] for those aged between 16 and 17.

    c. ONS' *Adult smoking habits in the UK*[130], for those aged 18+.

142. The initial population of former smokers is also adjusted based on 'Health Survey for England' data on the time since quitting. Former smokers that have quit for 10 years or more are assumed to be non-smokers to reflect both a negligible chance of starting smoking again and the decrease in risks associated with having quit for so long.

143. Transition probabilities from the University of Sheffield's Alcohol and Tobacco model[131], which are based on survey data, are used to model how individuals move between the smoking states over time, which allows for the analysis of complex interventions. Figure 1 shows the way individuals can move through the model. Individuals moving from the non-smoker state to the current smoker state are said to have 'instigated,' current smokers moving to former smokers are said to have 'quit', and former smokers moving

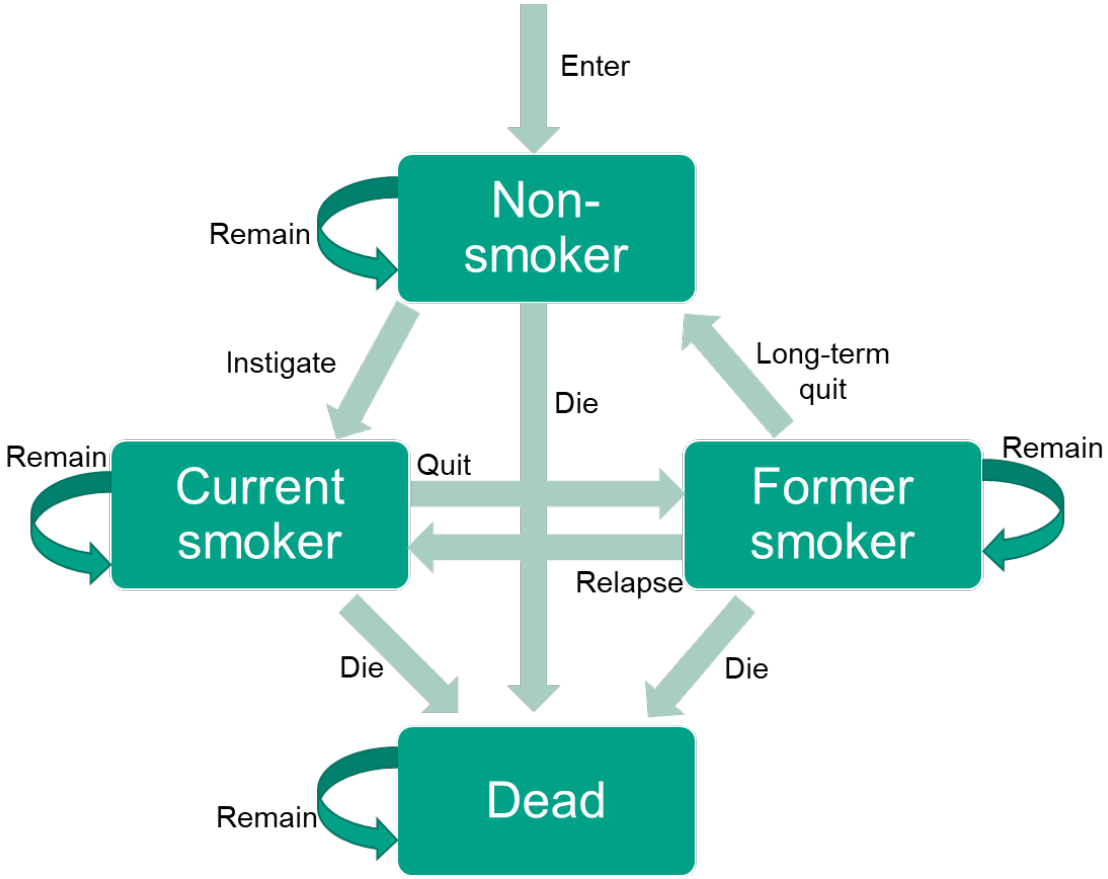
[127] ONS. 2024. Estimates of the population for the UK, England, Wales, Scotland and Northern Ireland.
[128] NHS Digital. 2022. Smoking, Drinking and Drug Use among Young People in England, 2021.
[129] University College London. Top-line findings on smoking in England from the Smoking Toolkit Study..
[130] ONS. 2024. Adult smoking habits in the UK: 2023.
[131] University of Sheffield. The Sheffield Tobacco and Alcohol Policy Modelling Platform: Smoking state transition probabilities.

to current smokers are said to have ‘relapsed’. Former smokers can also move to the non-smoker state to reflect a decreased chance of quitting and disease incidence.

144. The published transition probabilities are split by IMD quintile, however, for this modelling, these have been adjusted to fit the model structure using data from the Local Tobacco Control Profiles[132], as detailed in Annex A.

145. The populations in each state can move into the ‘dead’ state. The transition probabilities for this are based on mortality rates from ONS’ National Life Tables[133]. Mortality rates among current and former smokers among those aged 35 and older are greater[134], and the model accounts for this when calculating the transition probabilities. The model estimates the number of deaths based on the population in each state and the risk based on smoking status, as well as by age and sex.

Figure 1: Tobacco Markov model structure



146. Data on disease incidence from the Global Burden of Disease[135] for four conditions (Lung cancer, Stroke, Coronary Heart Disease (CHD) and Chronic Obstructive Pulmonary Disease (COPD)) - which account for almost 60% of ill health and early deaths attributable to smoking - are combined with relative risks of developing these diseases for current, former and non-smokers by sex from the Royal College of Physician’s (RCP’s) Hiding in Plain sight report.[136] The model then estimates the number of disease cases for each disease based on the population in each state and

[132] OHID. Local Tobacco Control Profiles.. 10% of the populations in each decile, aggregated up to quintiles.
[133] ONS. 2024. National life tables: UK.
[134] Doll and others. Mortality in relation to smoking: 50 years' observations on male British doctors.
[135] Institute for Health Metrics and Evaluation. 2020. Global Burden of Disease (GBD).
[136] RCP. 2018. Hiding in plain sight: Treating tobacco dependency in the NHS.

the absolute risk based on smoking status. Smokers and former smokers under 35 are assumed to have no increased risk of disease (see Annex A).

147. The model uses a baseline to compare interventions against, which remains the same across all modelled scenarios. In the baseline, the modelled prevalence is expected to continue to fall irrespective of any new policy implemented. The results of each scenario are presented as relative to the baseline.

148. The aim of the policy is to further reduce the number of young people taking up smoking (instigation). Based on survey data, the majority of smokers start smoking before the age of 20[137], and starting smoking after the age of 30 is rare. Therefore, in this model, instigation rates are only included for those aged 14 to 30. Each scenario, including the central estimate of the smoke-free generation policy (selected based on expert elicitation described below) and additionally modelled scenarios that make up the sensitivity analysis, is based on a change in instigation rates for the populations under the new legal age of sale. The changes to instigation rates are described below under the results section, while all other model input parameters are held constant across all scenarios.

149. The modelling assumed only changes to instigation rates as a result of implementing the smoke-free generation policy. The smoke-free generation policy might plausibly lead to an increase in quit rates, a reduction in amount smoked and a reduction in relapse among existing smokers as a result of wider societal change, but the model assumes no change to these variables. The model also does not account for other external factors such as vaping, additional funding for stop smoking services and stop smoking campaigns, and any future increases in duty rates.

150. The results from the model range across the time period of 2023 up to 2100 in order to assess the longer-term impacts on disease incidence, mortality, and costs. The outputs over this period presented below for the baseline and central scenarios separately are:

    a. The total number of smokers aged 14 and over

    b. The prevalence of smoking among those aged 14 to 30

    c. The prevalence of smoking among those aged 18+

    d. The number of deaths (for intervention scenarios, measured as a change against the baseline)

    e. The number of cases of lung cancer, stroke, CHD and COPD (for scenarios, measured as a change against the baseline)

    f. Social value gained (based on a reduction in the costs associated with smoking)

151. While a Markov model is a widely used approach for considering smoking behaviour, there are some limitations. The modelling results consider early mortality and four major

[137] PHE. 2015. Health matters: smoking and quitting in England.

health conditions associated with smoking; however, it is well evidenced that there are a number of other smoking related impacts that are not accounted for. For example, smoking during pregnancy (and the associated poor birth outcomes) is not taken into account. Passive smoking (exposure to cigarette smoke) can also cause all the harms of smoking although at lower levels, and these are not taken into account in the model.

152. Further limitations are discussed in the technical annex, Annex A.

Baseline results

153. Based on population estimates from ONS' 2023 mid-year population estimates, the initial population of those aged 13 and over included in the model is 48,630,869. The population of those aged 14 to 30 is 12,117,941 and for 18 years and over the population is 45,170,386.

154. Table 10 shows the smoking prevalence rates that are applied to the single year of age 2023 population estimates from the ONS. Where prevalence rates apply to an age band rather than a single year of age, prevalence is assumed to be the same for everyone in that band. The same sources are used to provide the proportion that are former and non-smokers.

Table 10: Smoking prevalence by age and sex used for initial populations in the model

Age	Smoking prevalence (%)		Source
	Male	Female	
13	1.4	0.8	NHS Digital. Smoking, Drinking and Drug use among Young People in England, 2021
14	2.3	3.4	
15	7.1	10.6	
16 to 17	12.2	12.2	UCL. Smoking Toolkit Study.
18 to 24	12.0	7.9	ONS. Adult smoking habits in the UK, 2023.
25 to 34	17.1	10.5	
35 to 44	14.3	10.8	
45 to 54	16.1	11.0	
55 to 64	13.5	11.9	
65+	8.6	7.5	

155. Based on Table 10 and ONS' 2023 mid-year population estimates, the initial population of those aged 13 and over (48,630,869) is split by smoking status. Before adjustments to the former smokers to reflect 10-year quitters: 5,502,164 are current smokers (11.3%), 11,330,284 are former smokers, and 31,798,421 are non-smokers.

156. For the 12,117,941 aged 14 to 30, before adjustments to the former smokers to reflect 10-year quitters, 1,354,119 are current smokers (11.2%), 1,108,360 are former smokers, and 9,655,462 are non-smokers.

157. For the 45,170,386 aged 18 and over, before adjustments to the former smokers to reflect 10-year quitters, 5,248,135 are current smokers (11.6%), 11,236,663 are former smokers, and 28,685,588 are non-smokers.

158. In the baseline, the transition probabilities are assumed to be held constant between all states, as opposed to using the University of Sheffield's projected rates over time, in which the trends in the transition probabilities continue until 2040.

159. If we were to use the University of Sheffield's projected rates over time for the transition probabilities it would lead to future smoking prevalence rates being lower in our baseline. However, the projected trends in transition probabilities from the University of Sheffield assume that there is some continued policy intervention on smoking.

160. Holding the transition probabilities constant at 2023 rates still results in smoking prevalence in our baseline declining. The trends in our baseline reach a long-run steady state of smoking prevalence that is lower than current levels of smoking (once the starting population has aged out of the model). Although it is still higher than if we used the University of Sheffield's projected transition probabilities.

161. The transition probabilities are assumed to be held constant in the baseline because, while smoking overall has been declining in recent years, it is plausible that without action smoking rates could stall or even rise, as seen in Australia[138] and in New York in the USA[139]. Given this uncertainty about whether these trends in transition probabilities would continue inherently or only as a result of continued policy action on smoking, we have assumed the transition probabilities were assumed to remain constant.

162. Also, holding the transition probabilities constant at 2023 rates still results in smoking prevalence in our baseline declining. This provides baseline trends over the coming years that are broadly in line with other estimates from Cancer Research UK's Smoking prevalence projections for England based on data to 2021[140] and University of Sheffield's projections from 2021, published in the Royal College of Physicians report, 'Smoking and health 2021: a coming of age for tobacco control?'.[141]

[138] The Guardian. 2023. Australia's teenage smoking rates rise for first time in 25 years, research reveals.
[139] The Wall Street Journal. 2014. New York City's Adult Smoking Rate Climbs.
[140] Cancer Research UK. 2022. Smoking prevalence projections for England based on data to 2021.
[141] Royal College of Physicians. 2021. Smoking and health 2021: A coming of age for tobacco control?

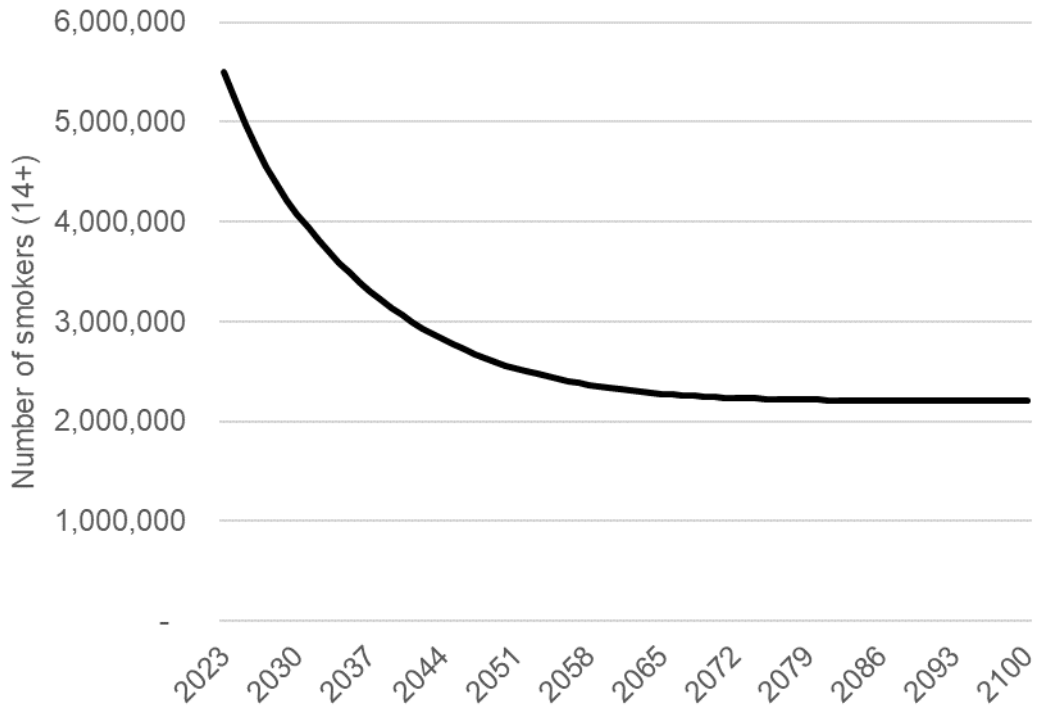
163. We have used the University of Sheffield projected transition probabilities in a scenario in the sensitivity analysis.

164. In the 12 years from 2011 to 2023, smoking rates in the UK declined in all ages[142], with the largest reduction among 18 to 24 year olds: 25.7% of this group smoked in 2011 compared with 9.8% in 2023. In comparison, in terms of percentage points, smoking prevalence declined the least among those 65 years and older, from 10.2% in 2011 to 8.2% in 2023. The baseline results using the inputs described above suggest prevalence will continue to fall irrespective of any new policy as follows:

Total number of smokers aged 14 and over

165. The total number of smokers is used to estimate some costs and benefits associated with the policy. In the baseline, the total number of smokers aged 14 and over is estimated to fall from 5,502,164 in 2023, to 2,402,882 in 2056, continuing to decline slowly to 2,206,131 smokers in 2100. Smoking prevalence for those aged 14 and over is estimated to fall from 12.4% in 2023 to 5.0% in 2056 and continuing to decline to a prevalence rate of 4.9% in 2100.

Figure 2: Modelled baseline number of smokers aged 14 and over in England, 2023 to 2100

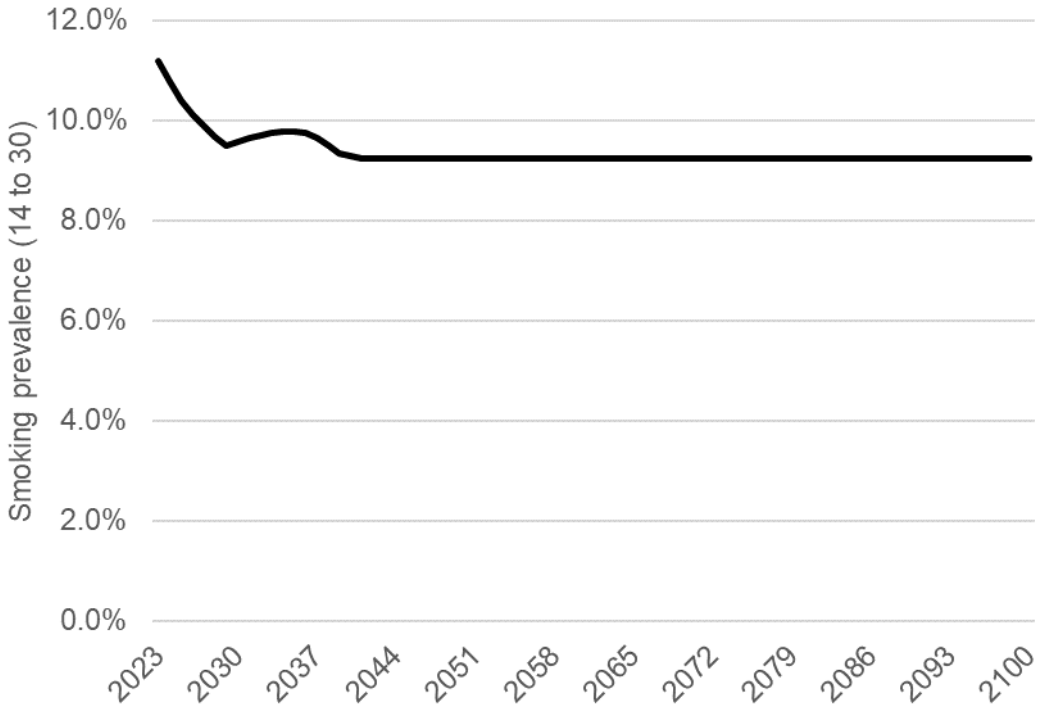


Smoking prevalence, 14 to 30 years old

166. Those aged 14 to 30 are the key targeted populations of the policy, as this is where the majority of smoking instigation occurs. In the baseline, smoking prevalence among those aged 14 to 30 is estimated to fall from 11.2% in 2023 to a steady state of 9.2% in 2041, and continues at this level throughout the rest of the modelled period.

[142] ONS. 2024. . Adult smoking habits in the UK - Office for National Statistics (ons.gov.uk)

Figure 3: Modelled baseline prevalence for those aged 14 to 30 years old, 2023 to 2100



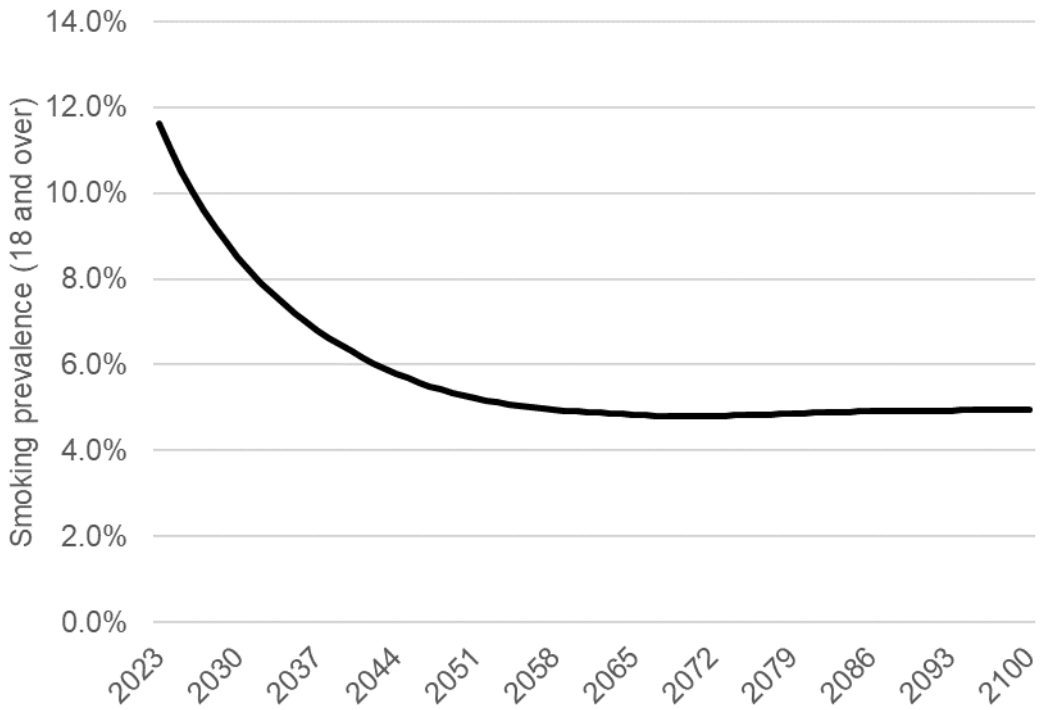
Smoking prevalence, 18 years and over

167. The government's national ambition for smoking prevalence is based on prevalence among those aged 18 and over. In the baseline, smoking prevalence among those aged 18 and over is estimated to fall from 11.6% in 2023 to 5.0% in 2056, and further to around 4.9% in 2064, and continues at this level throughout the rest of the modelled period.

168. The baseline smoking prevalence for those aged 18 and over is similar to other published smoking prevalence projections, including Cancer Research UK[143] and University of Sheffield's projections from 2021[144].

[143] Cancer Research UK. 2022. Smoking prevalence projections for England based on data to 2021.
[144] Roya College of Physicians.2021. Smoking and health 2021: A coming of age for tobacco control?

Figure 4: Modelled baseline smoking prevalence in those aged 18 and over in England, 2023 to 2100



Option 2: Introduce a smoke-free generation policy via legislation

169. Option 2: Introducing legislation to make it an offence for anyone born on or after 1 January 2009 to be sold tobacco products. This option would mean over time an increasing proportion of the population will be unable to be sold tobacco products, effectively increasing the legal age of sale until no one can be sold cigarettes.

Summary and preferred option with description of implementation plan

170. The preferred option is Option 2.

171. The smoke-free generation policy will be legislated for in The Tobacco and Vapes Bill as soon as Parliamentary time allows. The Bill will make it an offence for anyone born on or after 1 January 2009 to be sold tobacco products, herbal smoking products and cigarette papers, replacing the current age of sale (18) for these products. This will prevent children turning 15 in 2024 or younger from ever being legally sold tobacco products, thereby protecting future generations from tobacco addiction, resulting in significant public health benefits. This received support from 63.2% of consultation respondents to this question, while 32.2% disagreed and 4.6% said that they did not know.

172. The Bill will also make it an offence for anyone aged 18 or over to purchase tobacco products, herbal smoking products and cigarette papers on behalf of anyone born on or after 1 January 2009, replacing existing legislation prohibiting proxy purchases. This is in line with the views of the consultation respondents, with 73.7% of those who answered the question in favour of this proposal, 20% not in favour and 6.3% stating that they did not know. The Bill will also amend the text of warning notices that retail premises selling tobacco products are required to display to align with the new age of sale and require retail premises to amend existing warning signs to read ‘it is an offence to sell tobacco products to anyone born on or after 1 January 2009’. In the consultation, 71.8% of respondents to this question were in support of this amendment, 22.6% disagreed and 5.6% did not know.

173. As described above, for this policy, the Bill will cover the whole of the UK.

174. These changes, including the consequential amendments to proxy purchasing and warning notice legislation, would come into effect from 1 January 2027, when people born on 1 January 2009 turn 18 years old.

175. As is the case with existing age of sale legislation, new legislation would be enforced by local authorities. In practice, the majority of enforcement activity is undertaken by local authority Trading Standards teams. The Bill strengthens enforcement by providing Trading Standards with the option to issue a fixed penalty notice (FPN) – a £200 on-the-spot fine – for certain offences.

Option 2: Costs and Benefits

176. This option will make it an offence for anyone born on or after 1 January 2009 to be sold tobacco products.

177. If the policy is successful, the main benefits are anticipated to accrue through:

- Health benefits upon fewer young people taking up smoking
- Reduced costs to the NHS and social care
- Higher productivity/earnings for those that otherwise might have started smoking and developed health conditions
- Reduced adult and child ill-health caused by second hand smoke (SHS), including avoidable treatment costs
- Reduction in health inequalities
- Higher spending and total profits in other sectors of the economy as would-be smokers divert spending

178. The main categories of costs considered are:

- The cost to retailers to check people's age and ensure they meet the new legal requirements to purchase tobacco
- The costs to manufacturers, wholesalers, and retailers, including a reduction in profits associated with fewer number of smokers
- The cost to retailers of staff training and awareness
- Costs to government of publicising the legislation and issuing guidance
- Enforcement costs
- Net costs to the Exchequer through the loss of tax from reduced tobacco consumption (but higher consumption of other goods)

179. A summary of the costs and benefits is below, followed by details regarding each cost and benefit identified and estimated. Most elements of the cost-benefit analysis rely on the overall effect size of the policy, which we outline independently to begin with.

180. The appraisal period for this impact assessment is 30 years, from 2027 (expected policy implementation) to 2056. A longer appraisal period has been selected due to the long-term nature of the policy, where both costs and benefits would be expected to accrue beyond the standard 10 year period. Despite using a longer appraisal period, not all costs and benefits of this policy are expected to be captured in this time period. Specifically, and as outlined below, the benefits of the policy will continue beyond 2056 and increase in size due to the nature of the policy option. For this reason, illustrative benefits up to 2100 are often presented. While costs may also continue beyond the 30 year appraisal period, there is more uncertainty around these and how they will be realised, particularly where markets may be expected to change.

181. The modelling summarised above (paragraphs 139 to 168) is only used to estimate the impact of implementing the smoke-free generation policy in England. However, as described above, the Bill will cover the whole of the UK. Therefore, for each quantified cost and benefit, we have presented the estimate for England and as well as for the UK. As we do not have data to model the specific impacts for the UK, the estimates costs and benefits presented for the UK are the England estimates adjusted based on the relative size of the population in England compared to the whole of the UK. Based on population estimates from ONS[145], England accounts for around 85% of the population of the UK. Therefore, all the England estimates have been uplifted by 1.19[146] to provide estimates for the costs and benefits of the smoke-free generation policy to the UK.

182. The Net Present Value (NPV) and Equivalent Annual Net Direct Cost to Business (EANDCB) provided on the summary sheets for this impact assessment are the estimates for the UK.

[145] ONS. 2022. Population estimates for the UK, England, Wales, Scotland and Northern Ireland.
[146] Calculated by dividing the population of the UK by the population of England.

Option 2 - Summary of costs and benefits by stakeholder group (2024 prices)

Table 11: Summary of costs and benefits by stakeholder group (2024 prices)

Stakeholder	Impact	Cost/Benefit	Quantified?	UK Estimate (£million)	In NPV?	In EANDCB?
General population of smokers, quitters, and non-smokers	Avoided mortality - monetised QALYs	Benefit	Yes	417.5	Yes	No
	Reduction in disease cases	Benefit	No	-	N/A	N/A
	Reduction in second hand smoke exposure	Benefit	No	-	N/A	N/A
	Reduction in tobacco litter	Benefit	No	-	N/A	N/A
Wider societal benefits	Productivity gains	Benefit	Yes	27,298.1	Yes	No
	Reduction in healthcare costs	Benefit	Yes	2,814.1	Yes	No
	Reduction in social care costs	Benefit	Yes	1,838.6	Yes	No
	Reduction in smoking related fire costs	Benefit	Yes	981.8	Yes	No
Retailers	Age verification	Cost	Yes	83.5	Yes	Yes
	Familiarisation - Staff training and awareness	Cost	Yes	8.3	Yes	Yes
	New signage	Cost	Yes	0.2	Yes	Yes
	Lost profits due to fewer smokers	Cost	Yes	2,366.1	Yes	Yes
	Increase in profits due to offset expenditure	Benefit	No	-	N/A	N/A
Shisha bars	Age verification	Cost	No	-	N/A	N/A
	Familiarisation - Staff training and awareness	Cost	Yes	0.1	Yes	Yes

Stakeholder	Impact	Cost/Benefit	Quantified?	UK Estimate (£million)	In NPV?	In EANDCB?
	New signage	Cost	No	-	Yes	Yes
	Lost profits due to reduced sales	Cost	No	18.6	No	No
Wholesalers	Lost profits due to fewer smokers	Cost	Yes	507.7	Yes	Yes
	Increase in profits due to offset expenditure	Benefit	No	-	N/A	N/A
Manufacturers	Lost profits due to fewer smokers	Cost	Yes	698.1	No	No
	Increase in profits due to offset expenditure	Benefit	No	-	N/A	N/A
HMRC and taxpayers	Reduction in tobacco duty receipts	Cost	Yes	23,750.1	No	No
Department of Health and Social care	Communication costs	Cost	Yes	1.5	Yes	No
Local authorities	Enforcement costs	Cost	No	-	N/A	N/A
	Additional quitters engaging with stop smoking services	Cost	No	-	N/A	N/A
Retail workers	Increased aggression and abuse	Cost	No	-	N/A	N/A

Effect size

183. The estimated effect size is the number of fewer smokers in the population as a result of this policy option, the subsequent number of deaths and disease cases avoided, and wider societal benefits such as reduction in productivity costs associated with smoking and reductions in health and social care costs for smoking. A range of scenarios have been modelled, and a central scenario has been selected based on consultation with experts in tobacco control.

184. The central scenario and associated results are described below, and additional scenarios exploring different impacts on instigation rates are included later in the sensitivity analysis section.

Central scenario

185. In the command paper published by the previous government on 4 October 2023[147], Annex 1 contained the preliminary modelling on the impact of the smoke-free generation policy.[148] The Department of Health and Social Care published a more detailed explanation of the preliminary modelling on 1 December 2023[149]. In the Annex and more detailed explanation of the modelling, we provided the results based on four scenarios on the impact the policy would have on smoking instigation rates. The four scenarios we considered are in Table 12.

Table 12: Modelled scenarios for the command paper

Scenario	Explanation
Scenario 1	Reflects a report published by the Institute of Medicine (IoM)[150] in the US in 2015 that projected raising the age of sale by one year to 19 would reduce rates by 10% for most age groups below the threshold, and 5% for some[151]. In addition, it is assumed that there is a small increase in the instigation rates, of 5%, for the last two ages that can legally smoke. In the IoM report this was referred to as a 'rebound' effect.
Scenario 2	Assumes a 30% reduction in instigation rates per year for those below the age of sale. Reflects an assumption from UCL[152] that raising the age of sale to 21 would reduce prevalence among 18 to 20 year olds by 30% and reduce instigation rates for 18 to 20 year olds by the same amount.
Scenario 3	Assumes a 60% reduction in instigation rates per year for those below the age of sale. Reflects mid-point of Scenario 2 and 4.
Scenario 4	Assumes a 90% reduction in instigation rates per year for those below the age of sale. Reflects the assumptions used by the New Zealand Government for its implementation of a smokefree generation, which assumed a 100% reduction in instigation rates. A 90% year on year reduction has been modelled here rather than assuming immediate universal cessation of smoking instigation.

[147] DHSC. 2023. Stopping the start: our new plan to create a smokefree generation - GOV.UK (www.gov.uk)
[148] DHSC. 2023. Annex 1: modelling assumptions - GOV.UK (www.gov.uk)
[149] DHSC. 2023. Modelling for the smokefree generation policy - GOV.UK (www.gov.uk)
[150] Bonnie and others. 2015. The Effect on Tobacco Use of Raising the Minimum Age of Legal Access to Tobacco Products - Public Health Implications of Raising the Minimum Age of Legal Access to Tobacco Products.
[151] Reduction in instigation was estimated at 5% for those under 15, 10% for those aged 15 to 17, and 10% for those aged 18.
[152] University College London. 2021. UCL modelling of recommendations for tobacco control in England.

186. For the purposes of this impact assessment, we have selected **Scenario 2** as our central scenario.

187. To decide on which scenario to use as our central scenario we consulted 19 expert stakeholders by email from the UK, Australia, and New Zealand, mostly academics, that work in tobacco control and/or have experience of similar modelling. We asked the expert stakeholders:

Which of the four scenarios [same as in Table 12*] do you consider to best reflect the likely impact on smoking instigation rates of raising the age of sale of tobacco by one year every year?*

188. We received 14 responses all of which answered this question and Scenarios 2 and 3 were jointly identified as the most likely impact this policy would have on instigation rates, with five stakeholders selecting each scenario. No stakeholders selected Scenario 1 and two selected Scenario 4. It should be noted that two stakeholders did suggest somewhere between scenarios 1 and 2. While we took these into account, we did not include them in the total number opting for scenario 1 or 2.

189. We decided to select Scenario 2 as our central scenario as a relatively more conservative assumption on the likely effect size of this policy. A more conservative assumption (meaning selecting Scenario 2 over Scenario 3) on the likely impact of the effect of this policy was considered appropriate for two main reasons.

190. Firstly, we recognise that there is uncertainty on the impact the policy will have on instigation rates given this specific policy approach has not been implemented anywhere else in the world. This means there is no real-world evidence on the impact this policy has had in any other countries. The central scenario is based on an assumption used by UCL for modelling the impact of raising the age of sale for tobacco in the UK from 18 to 21. UCL based their assumption on evidence from the UK on the impact of raising the age of sale from 16 to 18 and from the US on the impact of raising the age of sale from 18 to 21.

191. Secondly, we recognise that there are risks around the practical implementation of this policy. This includes some people under the new age of sale continuing to be able to be sold tobacco. Data from the Smoking, Drinking and Drugs use among Young People Survey 2021 (SDD)[153] shows that some people under the current legal age of sale for tobacco (18) are still able to be sold tobacco in shops. The available data shows that in 2021, 3% of 11 to 15 year olds were current smokers. Among this group, 32% said that they purchased cigarettes from a shop. This will continue under the new regulations if some retailers do not comply with the new regulations, as was reported by studies in the US on the impact of raising the legal age of sale to 21. However, it should be noted that this Bill will also introduce Fixed Penalty Notices for underage sales, proxy sales, and free distribution of tobacco, herbal smoking products, cigarette papers, vaping and nicotine products. Fixed Penalty Notices in the Bill may also be given for breaches of

[153] NHS Digital. 2022. Smoking, Drinking and Drug Use among Young People in England, 2021.

regulations prohibiting the display of these products and the requirement to display age of sale notices for tobacco products. This will help local authority Trading Standards enforce these measures in the Bill.

192. Some retailers may also have difficulties in differentiating between customers above and below the new legal age of sale for tobacco, although this should be mitigated by regular identification checks by retailers. Currently, retailers are encouraged to regularly check the age of customers that might be under the legal age of sale for age restricted products[154] through initiatives such as Challenge 25. In 2022, the Association of Convenience Stores (ACS) launched a campaign to raise awareness of Challenge 25 and support staff in convenience stores[155]. Retailers will continue to need to check ID for those who appear to be below the age of sale; to support implementation of the new age of sale and alleviate ambiguity the legislation clarifies the types of ID that are valid.

193. We also recognise that some people under the new age of sale may still be able to access tobacco products through people they know. This could result in a displacement effect, whereby tobacco sales increase for those who can still legally purchase tobacco if they want to purchase them for someone they know under the legal age of sale, such as a friend or partner. For example, the SDD 2021 data shows that among current smokers aged 11 to 15 years old, 58% were given cigarettes by people and 33% bought them from people, such as friends, siblings, or parents. However, the size of any displacement effect of this policy is likely to be reduced by the Bill also making it an offence to purchase tobacco products on behalf of someone under the legal age of sale ('proxy purchasing').

194. Therefore, we have selected our central scenario based on the information provided to us by the expert stakeholders we consulted and to ensure that our central scenario accounts for some people under the legal age of sale for tobacco continuing to smoke after the policy has been implemented. This is instead of assuming that the proportion of people taking up smoking for those under the new legal age of sale will immediately reduce by 100%, despite it becoming illegal to sell tobacco products to these people.

195. We also asked the expert stakeholders:

In the model should we assume that raising the age of sale of tobacco by one year every year would reduce instigation rates year on year, or just have a one-off impact?

196. Out of the 12 expert stakeholders that answered this question, 11 selected a year-on-year reduction in instigation rates as the most appropriate assumption to use in our modelling.

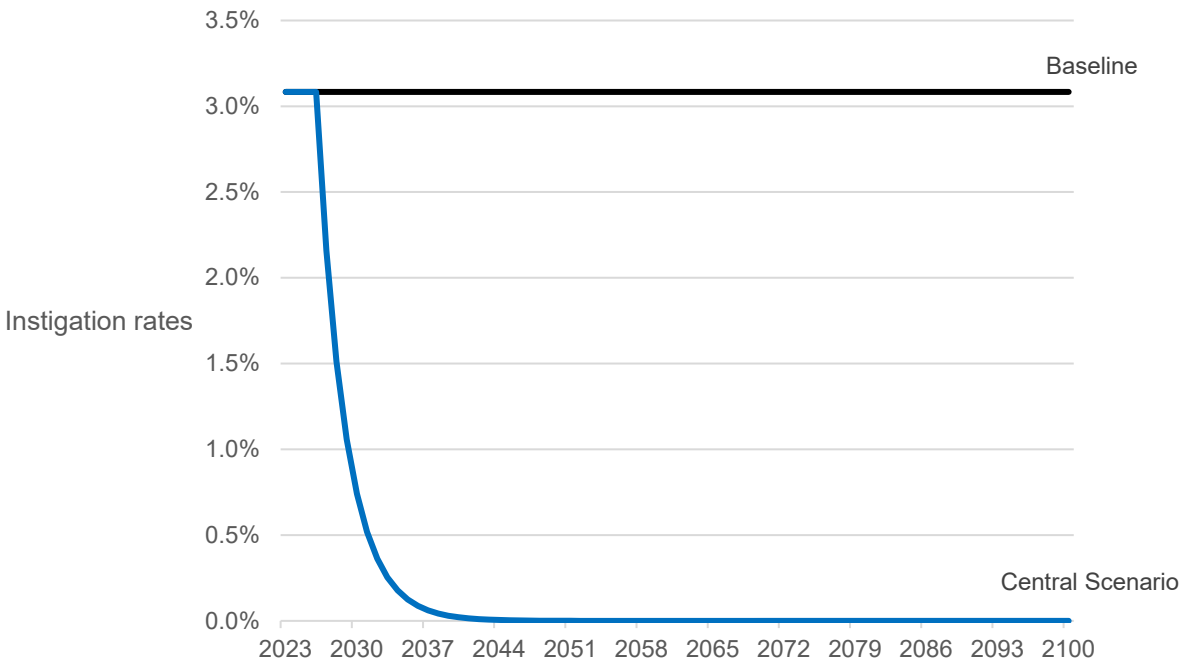
197. Therefore, in our central scenario we assume that for those under the new age of sale, the rate of instigation falls by 30% each year. For example, in 2027, when the provisions commence, the instigation rates for 18 year olds will decrease by 30%, in 2028 it will

[154] In Scotland, it is an offence under Section 4B of the 2010 act if a person carries on a tobacco or nicotine vapour business and fails to operate an age verification policy.
[155] Association of Convenience Stores. 2022. ACS Launches Expanded Challenge25 Campaign to Support Colleagues in Local Shops.

decrease by a further 30%, and in 2029 a further 30%, and so on. This reflects that the policy will mean that each year, 18 year olds will become one year further away from the legal age of sale for tobacco products, making it increasingly less likely that they will take up smoking. This is compared to using an assumption that the policy will only have a one-off impact on instigation rates for each age group under the new age of sale. In that case, the instigation rates for 18 year olds would decrease by 30% in 2027 and then remain constant at that level.

198. Figure 5 shows the instigation rate for males aged 18 each year from 2023 to 2100 for both the baseline scenario (assumed to remain constant) and the central scenario. The expected implementation date is 2027, therefore there is no change in instigation rates between 2023 and 2027 in either the baseline or central scenario.

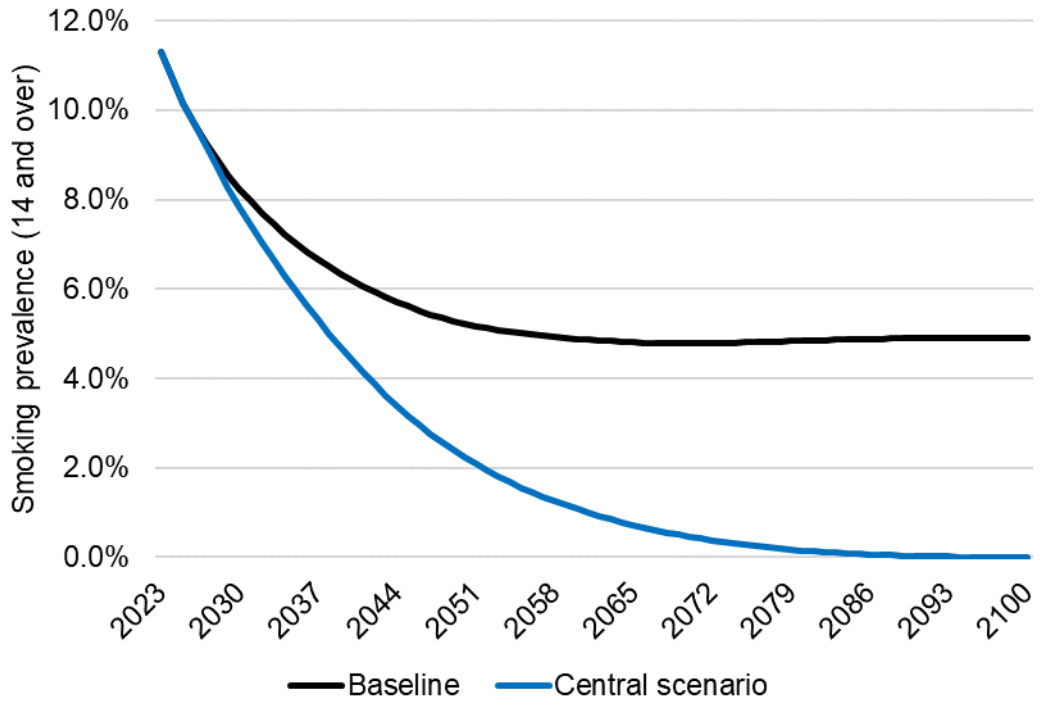
Figure 5: Modelled instigation rates, 18-year-old males, 2023 to 2100



Total number of smokers aged 14 and over

199. In the central scenario, the total number of smokers aged 14 and over is estimated to fall from 5,502,164 in 2023, to 701,167 in 2056, and continues to fall to less than 1,000 by 2100. Smoking prevalence for those aged 14 and over is estimated to fall from 11.3% in 2023, to 1.5% in 2056, continuing to fall to effectively zero by 2100. Compared with the baseline, this is 1,701,715 fewer smokers in 2056 or 3.5 percentage points lower.

Figure 6: Modelled total number of smokers aged 14 and over in England, 2023 to 2100



200. As explained above, our central scenario accounts for some people under the new legal age for purchasing tobacco still smoking, as opposed to all instigation under the age of sale going to zero immediately after implementation.

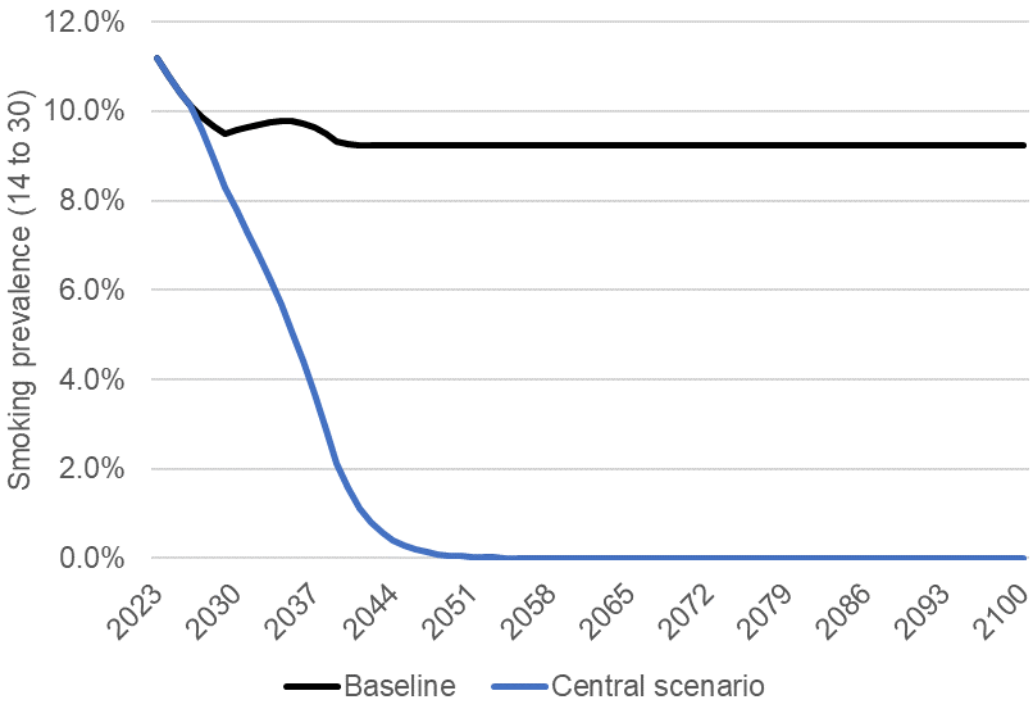
201. Also, although in the long run smoking prevalence gets close to zero percent, the effect of reducing instigation rates by 30% each year means it never completely reaches zero and a small number of people will continue to smoke. This means that the model assumes some people continue to smoke despite it being illegal for effectively all ages to be sold tobacco by 2100. This seems a more realistic situation than prevalence dropping to zero, for example, some people still access and use illicit drugs[156].

Smoking prevalence, 14 to 30 years old

202. In the central scenario, smoking prevalence among those aged 14 to 30 is estimated to fall from 11.2% in 2023, to effectively zero by 2050, and continues at this level to 2056 and throughout the rest of the modelled period. Compared with the baseline, this is 9.2 percentage points lower in 2056.

[156] ONS. 2023. Drug misuse in England and Wales - Office for National Statistics.

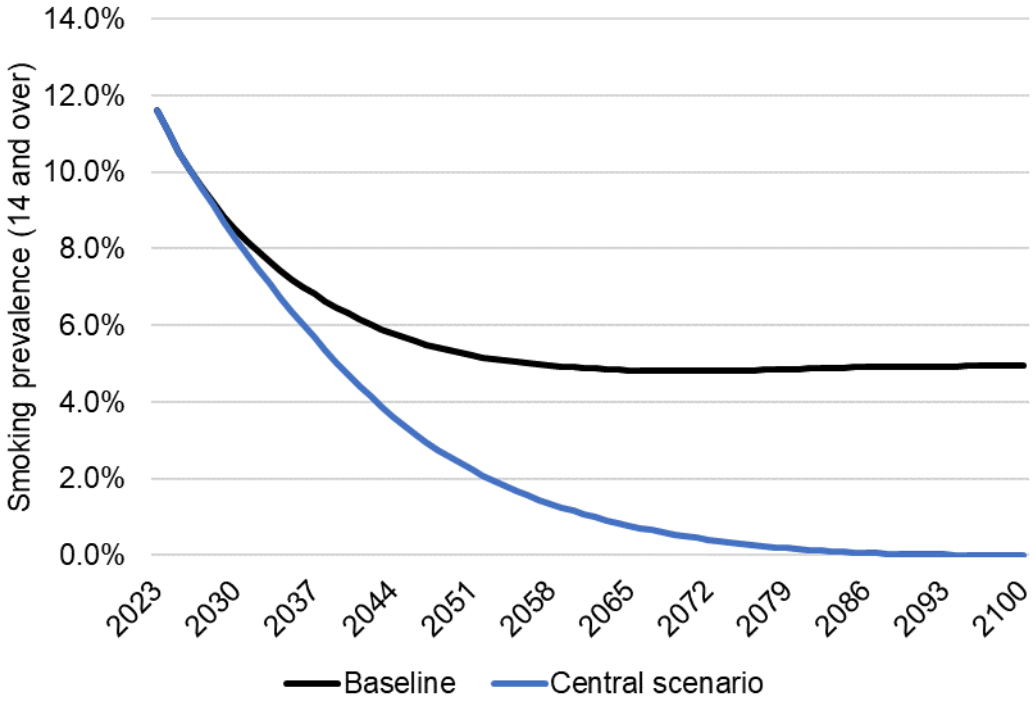
Figure 7: Modelled smoking prevalence (14 to 30 years old), baseline vs central scenario



Smoking prevalence, 18 years and over

203. In the central scenario, smoking prevalence among those aged 18 and over is estimated to fall from 11.6% in 2023 to 1.6% in 2056 and continues to fall to effectively zero by 2100. Compared with the baseline, this is 3.5 percentage points lower in 2056.

Figure 8: Modelled smoking prevalence (18+), baseline vs central scenario.



Deaths avoided

204. Based on the central scenario and the resulting fewer smokers, a number of deaths would be avoided due to the lower risk of mortality for those who do not take up

smoking. The model outputs the number of deaths avoided per year compared with the baseline, and these are added together to provide the cumulative number of deaths avoided by particular years of interest in this impact assessment.

205. Due to the long-term nature of smoking and smoking related mortality, the modelling does not estimate any avoided deaths as a result of the policy until 2044. However, between 2044 and 2056 (30 years post-implementation) the cumulative number of deaths avoided rises sharply to 2,602 in the model.

206. The trend in deaths avoided continues to increase, as subsequent cohorts experience the benefits of a smoke-free generation policy, up to a cumulative 154,800 deaths avoided in 2100.

Disease cases avoided

207. Based on the central scenario and the resulting fewer smokers, a number of disease cases would be avoided due to the lower risk of disease for those who do not take up smoking. The model outputs the number of disease cases avoided per year compared with the baseline. The model looks at disease cases for 4 main diseases: Lung cancer, Stroke, CHD and COPD, which account for almost 60% of ill health and early deaths attributable to smoking. Table 13 shows the number of disease cases avoided in England for each of the four main diseases for the central scenario.

208. Due to the long-term nature of smoking and smoking related morbidity, the modelling estimates 11,165 disease cases avoided by 2056. As with smoking related mortality, this number rapidly increases up to year 2100, with over 470,000 estimated disease cases avoided by 2100.

Table 13: Modelled disease cases avoided, central scenario vs baseline

Disease	Cumulative cases avoided (central scenario vs baseline)	
	2056	2100
Lung cancer	400	42,586
Stroke	491	10,104
CHD	3,916	139,501
COPD	6,421	280,759
Total	**11,165**	**472,950**

General population of smokers, quitters, and non-smokers

Monetised QALY benefits

209. There are established benefits from not taking up smoking.[157]

210. In the baseline, the total life years lost as a result of all deaths that occur are monetised based on the average population utility, estimated to be 0.828[158], and the value

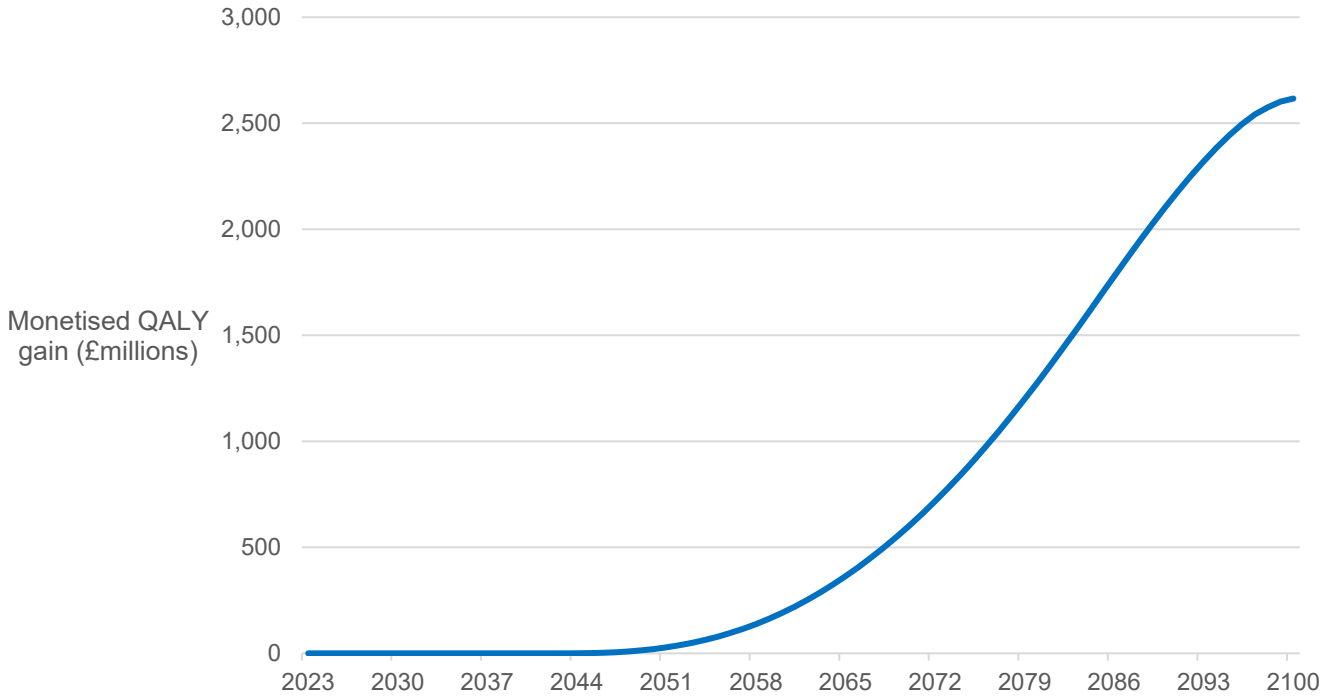
[157] NHS. Quit smoking, Stopping smoking for your mental health, Prevention: Lung Cancer.

[158] Sullivan and others. Catalogue of EQ-5D scores for the United Kingdom.. Note that utility scores are a measure of health-related quality of life, on a scale of 0 to 1 where 1 represents full health.

associated with a quality adjusted life year (QALY), set at £70,000 in HMT Green Book guidance. The health benefits associated with the central scenario are estimated based on the number of deaths avoided relative to the baseline each year. Future years health benefits are discounted at a rate of 1.5% in line with The Green Book[159].

211. Due to the long-term nature of smoking and smoking related mortality, no health benefits would be expected until 2044. However, between 2044 and 2056 (30 years post-implementation), the cumulative number of deaths avoided in England rises sharply to 2,602 in the model. The effects continue to accumulate faster all the way up to 2100 as subsequent cohorts benefit from the policy, with a cumulative 154,800 avoided in England by 2100. Figure 9 shows the annual monetised QALY gain in England compared with the baseline from 2023 to 2100.

Figure 9: Annual monetised QALY gain, central scenario versus baseline, 2023 to 2100, 2027 prices.



212. Table 14 shows the estimated total monetised benefits as a result of the cumulative QALY gains from avoided mortality in England and the UK by 2056 and 2100.

Table 14: Monetised QALY benefits, 2024 prices

	England	**United Kingdom**
2056	£352.8 million	£417.5 million
2100	£48.5 billion	£57.4 billion

Non-monetised benefits from a reduction in disease cases

213. The modelling estimates a significant number of disease cases avoided as a result of the central scenario. These reductions would provide a significant benefit to those individuals who would experience a better quality of life as a result, however, these benefits have not been monetised in this impact assessment. The estimates of the

[159] Any benefits realised over 30 years are discounted at a rate of 1.29% and at 1.07% if realised over 75 years, in line with The Green Book.

QALY gains therefore represents an underestimate of the health benefits accrued as a result of the policy.

Health benefits from a reduction in second hand smoke exposure

214. Any reduction in smoking rates and the number of smokers would result in a reduction in second-hand smoke (SHS) exposure. SHS is harmful to anyone, with children being particularly vulnerable to health conditions caused by SHS exposure.[160]

215. Previous impact assessments of tobacco control policies[161] reviewed the evidence available to quantify the economic impact of SHS exposure and estimate the benefits any reduction in exposure would bring.

216. In 2010, the Royal College of Physicians (RCP) identified links between SHS and a number of causes of morbidity in infants and children. The report estimated the cost of primary care and hospital admissions related to childhood disease caused by SHS to be £23.3 million a year in the UK[162]. Since 2010 and the introduction of further smoke-free legislation[163], children's exposure to SHS has decreased[164]. In 2018, the RCP produced the 'Hiding in plain sight' report[165]. This provided an estimate for the cost of admitted patient care in children attributable to smoking in England in 2015/16. The cost range was based on two alternative estimates of the percentage of children exposed to second hand smoke. They estimated that exposure of children to passive smoking costs the NHS in England between £5 and £12 million in hospital costs.

217. Although the evidence identified above presents a range of costs, it is not possible to quantify the specific impact the smoke-free generation policy would have on the costs SHS exposure imposes on the NHS, and this has not been modelled. For this reason, these benefits remain a non-monetised benefit and are not included in the NPV or EANDCB.

Impact of tobacco litter

218. The latest estimates from the Department for Environment, Food & Rural Affairs (DEFRA) put the cost of cleaning up cigarette butts to local authorities at £40 million per year[166]. Keep Britain Tidy surveyed 7,200 sites across the country, with cigarette butts being the most littered item (found on 77% of sites).[167]

219. This option is expected to reduce the number of smokers. This would reduce the overall litter associated with tobacco as there would be fewer of packs of cigarettes and packs of hand rolling tobacco sold each year.

[160] NHS. Passive smoking. Reviewed 2022.
[161] DHSC. 2015. Standardised packaging of tobacco products impact assessment..
[162] Royal College of Physicians. 2010. Passive smoking is a major health hazard to children, says the RCP.
[163] Such as the Smoke-free (Private Vehicles) Regulations, 2015.
[164] NHS Digital. 2019. Smoking Drinking and Drug use among Young People in England, 2018.
[165] Royal College of Physicians. 2018. Hiding in plain sight.
[166] DEFRA, DHSC. 2021. Government explores next steps to clean up tobacco litter in England..
[167] Keep Britain Tidy. Litter in England: The local environmental quality survey of England 2019/20.

220. It has not been possible to quantify the specific impact of the smoke-free generation policy on litter costs, and therefore remains non-monetised and is not included in the NPV of the policy or the EANDCB.

Wider societal benefits

221. There are a number of wider benefits associated with a reduction in smoking. Evidence from previous tobacco control interventions found the introduction of policies such as smokefree legislation in 2007 had significant impacts on healthcare usage, and more recent impact assessments for tobacco control policies have outlined the evidence of reducing the number of smokers on areas such as productivity.

222. The illnesses smoking causes has a significant impact on an individual's productivity. Firstly, smokers are more likely to have to take time off work due to sickness. Smokers have an absenteeism rate 33% higher than non-smokers and take an extra 2.7 sick days per year[168]. Secondly, Action on Smoking and Health's (ASH's) Smoking, employability, and earnings report shows that being a smoker is associated with a 7.5% lower probability of being employed[169]. Thirdly, there is evidence that smoking is related to presenteeism[170], the practice of going to work despite poor health, resulting in subpar performance.

223. Previous impact assessments have quantified benefits from fewer smokers at work as a result of the policies. Standardised packaging of tobacco was expected to provide £900 million in benefits as a result of fewer smokers at work. This was based on the estimated productivity loss per smoker (as time lost due to smoking) and the average hourly wage, then multiplied by the number of quitters as a result of the policy. However, the evidence these estimates are based on is from 2007.

224. A reduction in the number of smokers would have an impact on the NHS. In 2019/20 there were an estimated 448,034 hospital admissions attributable to smoking. The overall cost to the NHS is estimated to be £1.9 billion a year[171]. Evidence found a statistically significant impact on the number of hospital admissions due to a reduction in smoking as a result of smoke-free legislation in 2007, therefore any reduction in the number of smokers would reduce the cost of smoking to the NHS.

225. A reduction in the number of smokers would also have an impact on the social care system and reduce the cost to society of smoking related fires.

226. In 2023, ASH published estimates of the wider societal costs of smoking in England[172]. Their report put the estimated cost of smoking at £21.8 billion a year, made up of a range of different costs. These were the productivity, healthcare, social care, and fire costs.

[168] Weng and others. 2012. Smoking and absence from work: systematic review and meta-analysis of occupational studies.
[169] Action on Smoking and Health. 2020. Smoking, employability, and earnings.
[170] Lee and others. 2021. Impacts of heavy smoking and alcohol consumption on workplace presenteeism.
[171] Action on Smoking and Health. 2024. Latest figures show cost of smoking in England up 25% to at least £21.8 billion - ASH.
[172] Action on Smoking and Health. 2024. Latest figures show cost of smoking in England up 25% to at least £21.8 billion - ASH.

227. At the time of this analysis the estimates from ASH were identified as the best and most up to date available for the different costs of smoking to society. Below is a summary of the methodology and data used to estimate each component.

- Productivity costs – The estimate for the cost of smoking on productivity comprises lost productivity due to smoking-related early deaths (valued at the income lost to those dying prematurely), reduced employment levels for smokers compared to non-smokers, and reduced earnings for smokers compared to non-smokers.

    - The estimate for the cost of lost productivity due to smoking-related early deaths is based on the years of potential productivity lost to smoking-attributable early deaths, and distribution of earnings from employment and self-employment in the UK. The years of potential productivity lost to smoking-attributable early deaths is based on data on smoking attributable mortality from OHID local tobacco control profiles[173], labour market statistics from ONS[174], and average remaining years in employment for non-smokers in employment from an analysis of micro data from the Understanding Society (USoc) survey[175]. The distribution of earnings is derived from Family Resources survey[176] micro data.

    - The estimates for the costs of smoking to productivity from reduced employment levels and earnings are based on data from the USoc survey. The data from the USoc survey are used in regressions to estimate the relationship between earnings, employment, and smoking status. The analysis attempts to control for other factors that affect people's earnings and likelihood of being employed, such as, age, gender, ethnicity, and education.

- Healthcare costs – The ASH estimate for the cost of smoking to the NHS is based on the estimate by DHSC for the 2017 tobacco control plan[177], combined with new estimates from Public Health England for hospital admissions attributable to smoking[178]. Given the DHSC estimate was from 2015, further adjustments have been applied to account for recent changes in NHS costs, population sizes and the distribution of ex-smokers.

- Social care costs – The costs of smoking to social care covers the cost to local authorities of having to provide both care in a person's home (domiciliary care) and residential care. The cost is estimated based on data on smoking status and receipt of social care services from two English datasets: the English Longitudinal Study of Ageing (ELSA)[179] and the Health Survey for England

[173] OHID. Local Tobacco Control Profiles - OHID (phe.org.uk)
[174] ONS. Employment and labour market.
[175] Understanding Society. Main survey.
[176] DWP. Family Resources Survey - GOV.UK (www.gov.uk).
[177] DHSC. 2017. Smoke-free generation: tobacco control plan for England.
[178] PHE. 2021. Response to consultation on proposed changes to the calculation of smoking attributable mortality and hospital admissions.
[179] English Longitudinal Study of Aging. The English Longitudinal Study of Ageing (ELSA).

(HSE)[180]. The data from these datasets are used in regressions to estimate the relationship between smoking status and the need for social care. The analysis attempts to control for other factors that affect people's use of social care, such as, age, gender, family composition, and health status.

- Fire costs – The cost of smoking related fires comprises the cost of fatalities, injuries, property damage, and response costs for fires caused by smoking. The estimates for each component are largely based on data from government Fire Statistics[181] and a report on the 'Economic and social cost of fire'[182].

228. We recognise that there are limitations with these estimates from ASH. For example, the estimate of the costs of smoking to productivity may be an overestimate as the regressions it was based on may not have controlled for all the factors that could influence both smoking and reduced levels of employment or earnings, thus appearing to suggest these reduced levels are entirely due to smoking. On the other hand, the estimated cost of social care could be considered an underestimate as it does not include the cost of unmet and informal social care needs for smokers, which ASH estimates suggest could be as high as £13.8 billion[183].

229. As the estimates from ASH were the best and most up to date available for the costs of smoking to society at the time of this analysis, they have been used to estimate the wider societal benefits associated with the central scenario compared with the baseline. The approach is similar for each of the individual cost elements.

230. Based on the estimated number of smokers and former smokers in 2023, a unit cost is produced for productivity, healthcare, and social care. The costs of smoking related fires are applied only to current smokers. The number of current smokers in the model in 2023 is 5,894,297, and the number of former smokers is 11,096,889. Table 15 shows the wider societal costs considered in this impact assessment, uplifted to 2027 prices by total annual cost and the unit cost applied to particular populations.

Table 15: Estimated societal costs and costs per individual in the relevant population.

Cost	Population	Total annual cost (£, 2024 prices)	Unit cost (£, 2024 prices)
Productivity cost	Smokers and former smokers	19,465,476,115	1,146
Healthcare cost	Smokers and former smokers	2,006,679,126	118
Social care cost	Smokers and former smokers	1,311,040,170	77
Fire cost	Smokers	369,249,753	63

[180] NHS Digital. Health Survey for England.
[181] Home Office. Fire statistics data tables - GOV.UK (www.gov.uk).
[182] Home Office. 2023. Economic and social cost of fire.
[183] Action on Smoking and Health. 2024. ASH Ready Reckoner - ASH

231. To estimate the benefits accrued by the central scenario compared with the baseline, the difference in number of smokers and former smokers each year (where relevant) between the central scenario and baseline is multiplied by the unit cost. This provides the annual benefit as a result of the central scenario, which are then added together to provide the cumulative benefits by 2056. Future years are discounted in line with HMTs Green Book at a rate of 3.5%[184].

Productivity gains as a result of fewer smokers

232. Productivity benefits are assumed to apply to smokers and former smokers, with a productivity unit cost of £1,146 associated with being a smoker or former smoker. In 2056, in the modelled central scenario, there would be 2,910,852 fewer smokers and former smokers in England compared with the baseline. Table 16 shows the estimated cumulative productivity benefits in England and the UK by 2056 and 2100 as a result of this many fewer smokers and former smokers.

Table 16: Productivity gains as a result of fewer smokers, 2024 prices

Year	England	United Kingdom
2056	£23.1 billion	£27.3 billion
2100	£54.2 billion	£64.2 billion

Reduction in healthcare costs

233. The benefits from a reduction in healthcare costs are assumed to apply to smokers and former smokers, with an additional unit cost for healthcare of £118 associated with being a smoker or former smoker. In 2056, in the modelled central scenario, there would be 2,910,852 fewer smokers and former smokers in England compared with the baseline. Table 17 shows the estimated cumulative reduction in healthcare costs in England and the UK by 2056 and 2100 as a result of this many fewer smokers and former smokers.

Table 17: Reduction in healthcare costs, 2024 prices

Year	England	United Kingdom
2056	£2.4 billion	£2.8 billion
2100	£5.6 billion	£6.6 billion

Reduction in social care costs

234. The benefits from a reduction in social care costs are assumed to apply to smokers and former smokers, with an additional unit cost for social care of £77 associated with being a smoker or former smoker. In 2056, in the modelled central scenario, there would be 2,910,852 fewer smokers and former smokers in England compared with the baseline. Table 18 shows the estimated cumulative reduction in social care costs in England and the UK by 2056 and 2100 as a result of this many fewer smokers and former smokers.

[184] Any benefits realised over 30 years are discounted at a rate of 3.0% and at 2.5% if realised over 75 years, in line with The Green Book.

Table 18: Reduction in social care costs, 2024 prices

Year	England	United Kingdom
2056	£1.6 billion	£1.8 billion
2100	£3.7 billion	£4.3 billion

Reduction in fire costs

235. The benefits from a reduction in fire costs associated with smoking are assumed to apply to smokers, with an additional unit cost for fires associated with smoking of £63 associated with being a smoker. In 2056, in the modelled central scenario, there would be 1,700,779 fewer smokers in England compared with the baseline. Table 19 shows the estimated cumulative reduction in social care costs in England and the UK by 2056 and 2100 as a result of this many fewer smokers.

Table 19: Reduced fire costs, 2024 prices

Year	England	United Kingdom
2056	£0.8 billion	£1.0 billion
2100	£1.9 billion	£2.2 billion

Total cumulative wider societal benefits

236. Figure 10 shows the total cumulative wider societal value gained in England for all of the considered costs associated with smoking in 2027 prices.

237. Table 20 shows the estimated cumulative wider societal benefits in England and the UK by 2056 and 2100.

Figure 10: Cumulative wider societal value gained, central scenario vs baseline. England 2027 prices.

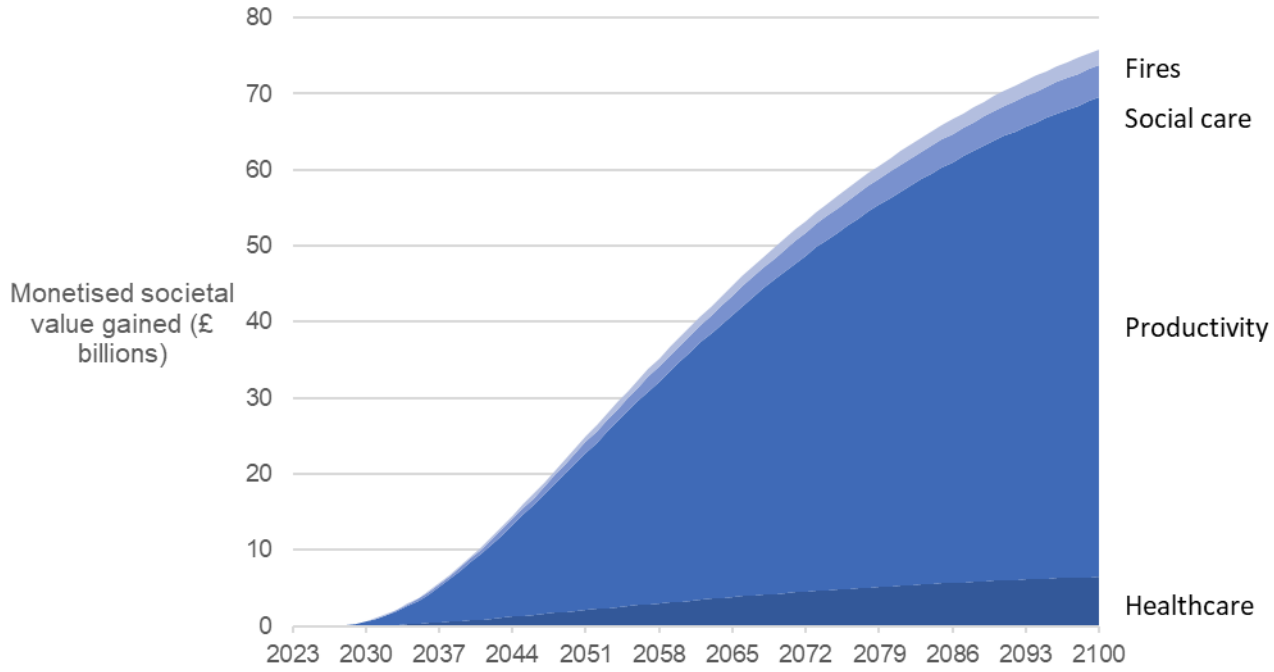


Table 20: Total cumulative wider societal benefits, 2024 prices.

Year	England	United Kingdom
2056	£27.8 billion	£32.9 billion
2100	£65.3 billion	£77.3 billion

Retailers

Numbers of premises that sell cigarettes and tobacco

238. We estimate, based on evidence from the Standardised Packaging of Tobacco impact assessment[185], that around 46% of tobacco sales are through small and micro businesses[186] (See more discussion in the Small and Micro Business Assessment section).

239. We are not aware of more detailed data on the cigarette retail market, but more general figures do exist on the numbers of different types of retail premises in the UK. This gives an indication of the distribution of cigarette purchases across different types of shops. Many of these retailers will sell tobacco, but the proportion that do is not known.

240. Data we have identified suggests that in the UK there are:

- 50,387 convenience stores[187], of which 71% are independently operated.

[185] Department of Health. 2015. Standardised packaging of tobacco products impact assessment: Specific Impact Tests.
[186] Euromonitor International. 2011. Cigarettes in the United Kingdom.
[187] Association of Convenience Stores. 2024. ACS Local Shop Report 2024.pdf

- 5,944 Supermarkets.[188, 189]

241. As we do not have data on the proportion of these stores that sell tobacco, we have assumed that all 56,331 in the UK do.

Cost to check people's age

242. This option may cause an increase in the time it takes for retailers to serve customers, since more customers may have to prove their age. It can become more difficult to tell people's age as they get older, so as the minimum age of sale increases over time, there could be a larger cohort of customers whose IDs need to be checked.

243. The ONS reports the proportion of smokers who fall into different age categories. From this, it is possible to estimate the proportion of cigarettes and hand rolling tobacco (HRT) that are bought by different age groups. Current guidance states that all customers who look 25 or younger should have to prove their age[190,191]. We estimate that the proportion of cigarettes and HRT transactions by 18 to 25 years olds is around 10% of the total.

244. There is significant uncertainty over the impact the legislation would have on the age range of people that would need to be checked when making a sale. Retailers will continue to need to check ID for those who appear to be below the age of sale; to support implementation of the new age of sale and alleviate ambiguity the legislation clarifies the types of ID that are valid. To estimate how much this could cost retailers we assume that, under the new rules, retailers would check the ages of customers 10 years older than the minimum age. This would represent around 20% of smokers - a net increase of 10 percentage points. Although we expect smoking prevalence, and hence sales, to fall more quickly when the smoke-free generation policy is implemented, compared to the do nothing option, retailers will still need to check a wider age range of consumers, and so we estimate that the number of checks will increase overall.

245. We have not identified any evidence on the time it takes for retailers to check customers IDs to verify their ages. However, assumptions on how long this may take has been included in previous impact assessments. In 2015, the Nicotine Inhaling Products impact assessment assumed it would take 15 seconds per age verification check. More recently, in 2018, the impact assessment for Banning the Sale of Energy Drinks to Children[192] assumed it would take 30 seconds per age verification check.

246. We have also not identified any evidence to suggest that the amount of time it takes to check a person's age varies between the types of businesses that consumers purchase tobacco from. As a result, we have assumed that the time it takes to check a person's age is the same in all types of businesses.

[188] IGD. 2019. UK Grocery Store Numbers 2018.
[189] Data from 2018 as most recent we have been able to obtain.
[190] Association of Convenience Stores. Challenge25.
[191] In Scotland, this is an offence under Section 4B of the 2010 act; if a person carries on a tobacco or nicotine vapour business and fails to operate an age verification policy.
[192] DHSC. 2018. Banning the Sale of Energy Drinks to Children Consultation Stage Impact Assessment.

247. Given the lack of evidence on the amount of time it will take for each additional age verification check because of this policy, we have had to make an assumption in order to be able to produce an estimate of the overall costs. This assumption is based on the most recent impact assessment we have identified that has considered this cost and have assumed an average of 30 seconds per transaction where the age of customers is up to 10 years older than the minimum age.

248. The cost to retailers of this time is estimated to be the same as their wages, as stated in the ONS Annual Survey of Hours and Earnings (ASHE)[193]: £15.59 for retail managers, £12.13 for shopkeepers and owners, and £11.00 for retail cashiers (2023). To this, we apply an uplift of 19% to account for non-wage labour costs[194]. We assume that the transactions are distributed across small shops and supermarkets in proportion to the number of staff that work in each, and that in small shops, managers and shopkeepers conduct sales as well as cashiers.

249. To estimate the cost to retailers of the additional time to check people's age, we combine these figures with our projections of future cigarette and HRT sales. Table 21 shows the estimated discounted cost to retailers of the additional time to check people's age in the UK in 2056.

Table 21: Cost to check people's age, 2024 prices

Year	United Kingdom
2056	£83.5 million

250. There is uncertainty when assessing the value to retailers of any small amounts of extra time spent on tasks such as proof of age. Many 30 seconds across England in one day summing to an hour or two in total for the entire country is not the same as one retailer gaining an hour or two of work from an employee. On the one hand, there is an argument that most of these extra seconds are not likely to result in any extra costs since the retailer could not have made productive use of these extra seconds of time. On the other hand, there is the chance that this extra time may have a disproportionate effect, since it may feed into wider step change decisions, such as employing another member of staff. If this is the case, it may place a larger burden on smaller businesses that employ fewer people. However, we have not identified any evidence to quantify this impact, or how the impact varies between different size businesses.

251. There is some limited evidence to suggest that retailers do not view the process of age checking as excessively burdensome. A survey of small retailers commissioned by ASH[195] in 2022 found that 83% supported the introduction of mandatory age verification for anyone under 25, with only 5% opposing. Whilst there could be a number of reasons for their support, it does suggest that they do not find the process of checking people's age to be too onerous.

[193] ONS. 2023. Annual Survey of Hours and Earnings (ASHE).
[194] Based on data on the non-wage percentage of labour costs from ONS. 2020. Index of Labour Costs per Hour, UK: July to September 2020.
[195] Action on Smoking and Health, 2022. Regulation is not a dirty word: Local retailers' views of proposals for new tobacco laws.

Cost of staff training and awareness

252. It is anticipated that there will be a cost for retailers in terms of training staff and raising awareness of the new age of sale restriction and the products range to which it applies. The Bill will make it an offence for anyone born on or after 1 January 2009 to be sold tobacco products and to purchase tobacco products on behalf of someone born on or after 1 January 2009 ('proxy purchasing'). Although it will mean the legal age of sale effectively increases by one year each year, the regulations will not change every year. This means it will be a one-off cost, as opposed to a recurring annual cost, for retailers in terms of training staff and raising awareness of the new age of sale restriction and the products range to which it applies.

253. We assume that there will be one manager or shopkeeper in each tobacco retailer that will need to familiarise themselves with the new legislation and guidance, and that they will need to spend time disseminating this information to their staff.

254. This cost is estimated by multiplying the time taken by the number of staff involved and their wages.

255. We estimate the time taken for managers to familiarise themselves with the legislation based on typical technical text reading speeds (75 words per minute[196]) and the length of guidance documents produced for similar recent legislation (2800 words, Tobacco and Vapes guidance document[197]). This equates to around 1 hour 6 minutes.

256. We recognise that the source for the typical technical text reading speed of 75 words per minute is relatively old, from 2013. However, we still consider this to be the most appropriate source to use for this input. Firstly, this was included in the most recent version of 'Appraisal of guidance: assessments for regulator-issued guidance' published in 2017 by the Better Regulation Executive (BRE), with input by the Regulator Appraisal Subgroup (RAS). Secondly, we have not identified any evidence to suggest that the typical technical text reading speeds is likely to have significantly changed since 2013.

257. We assume that once they understand the changes, it will take them 30 mins to communicate this to staff, who therefore have to spend 30 mins listening to it.

258. Data from the Association of Convenience Stores[198] and IGD Retail Analysis[199] shows that in the UK, there were 50,387 convenience stores in 2024, including petrol station forecourts, and 5,944 Supermarkets, excluding discounters that generally don't sell tobacco, in 2018 (the latest data we were able to obtain).

259. There are an estimated 405,000 convenience store jobs in the UK[200], which, adjusted for the proportion of the population in England, gives an estimated 341,616 convenience store jobs in England[201]. It is assumed that each store has 1 manager. The ACS Local

[196] EFTEC. 2013. 'Evaluating the cost savings to business from revised EA guidance – method paper' as quoted in BEIS. 2017. Business Impact Target: Appraisal of guidance: assessments for regulator-issued guidance.
[197] Business Companion. Tobacco and vapes.
[198] Association of Convenience Stores. 2023. The Local Shop Report 2023.
[199] IGD. 2019. UK Grocery Store Numbers 2018.
[200] Statista. 2022. Average number of convenience store jobs in the United Kingdom (UK) from 2015 to 2023.
[201] Statista. 2022. Average number of convenience store jobs in the United Kingdom (UK) from 2015 to 2023.

Shop Report 2024 put the number of convenience stores in mainland UK to be 50,387 in 2024[202]. Therefore, there are an estimated 50,387 convenience store managers in the UK that would need to read the new guidance. Subtracting the estimated number of convenience store managers from the estimated total number of convenience store jobs means there are an estimated 355,612 cashiers in convenience stores in the UK that the managers would have to convey the new regulations to.

260. There are an estimated 5,944 supermarkets in the UK, employing 871,429 people[203], which, adjusted for the population in England, gives an estimated 735,047 supermarket jobs in England. Assuming that each store has 1 manager, it is estimated that there are 5,944 managers in supermarkets in the UK that would have to read the new regulations. Subtracting the estimated number of supermarket managers from the estimated total number of supermarket store jobs in means there are an estimated 865,485 cashiers in supermarkets in the UK that the managers would have to convey the new regulations to.

261. The ONS Annual survey of households and earnings reports the median salaries of retail managers, staff, and shopkeepers[204]. Based on the average of the median wage from this data for 'Managers and Directors in Retail and Wholesale' and 'Shopkeepers and owners - retail and wholesale,' the estimated hourly wage for a manager or shopkeeper in a shop that sells tobacco is £13.86. This is uplifted by 19%[205] to account for non-wage labour costs to £16.46. Using the same dataset, the median hourly wage for 'Retail cashiers and check-out operators' is £11.00, which is then uplifted by 19% to account for non-wage labour costs.

262. To estimate the cost to retailers to train staff and raise awareness of the new age of sale restriction and the products range to which it applies, we multiply the total time taken for managers to read the new guidance, convey it to their staff, and for staff to listen, by the hourly wage for each group. Table 22 shows the estimated one-off cost to retailers in the UK.

Table 22: Cost of staff training and awareness for retailers, 2024 prices

Year	United Kingdom
2027	£8.3 million

Cost to retailers of putting up new signage

263. Retailers may need to pay for new signs to reflect the new age restrictions. This is likely to take a very similar form to the current signs.

[202] Association of Convenience Stores. 2024. The Local Shop Report 2024. Accessed here: The Local Shop Report | ACS
[203] Living Wage Foundation. 2021. Over two-fifths of all supermarket workers earn below the real Living Wage.
[204] ONS. 2023. Annual Survey of Hours and Earnings (ASHE).
[205] Based on data on the non-wage percentage of labour costs from ONS. 2020. Index of Labour Costs per Hour, UK: July to September 2020.

264. To estimate the cost to retailers of putting up new signage, we multiply our estimate of the number of retailers that sell tobacco in the UK by the typical cost of a new sign (£4.00[206]). Table 23 shows the estimated one-off cost to retailers in the UK.

Table 23: Cost to retailers of putting up new signage, 2024 prices

Year	United Kingdom
2027	£200,000

Profits decreased due to reduced tobacco sales from fewer smokers

265. A reduction in the number of smokers would result in a reduction in sales of tobacco. As a result, retailers, wholesalers, and manufacturers of tobacco would experience a reduction in profits from tobacco sales.

266. The number of fewer packs sold is based on the effect size. In the modelled baseline, the number of people smoking is expected to fall irrespective of any new policy implemented. The cost to business is therefore based on the difference in the number of smokers in the central scenario compared to the baseline.

267. The Health Survey for England[207] (HSE) found that in 2022, the median consumption was around 10 cigarettes a day. Adult Smoking Habits in the UK found a similar level of consumption, with consumption increasing with age. Based on the median figure from the HSE of 10 cigarettes a day, the average smoker is estimated to smoke around 3,650 cigarettes a year. For those smoking factory-made packs of cigarettes, with a minimum pack size of 20, this would be roughly 183 packs a year.

268. In the central scenario, there are fewer smokers each year when compared to the baseline. Therefore, retailers lose out on profits each year for every person who does not take up smoking. Based on the number of fewer smokers[208], an estimated cumulative 4.4 billion fewer factory-made packs of cigarettes will be sold between 2027 and 2056. Future years costs are discounted at a rate of 3.5% in line with The Green Book.

269. Evidence suggests profit margins for retailers (particularly small retailers) on tobacco is small. An ASH report from 2016 found an average profit margin of 6.6%[209] on tobacco products, based on 1,400 small retailers from across the UK, using a specific electronic point of sale system. The sample included affiliated and unaffiliated shops, with profit margin based on all forms of tobacco (cigarettes, hand rolling tobacco, cigars, and other types of tobacco). Another paper[210] found retailers (based on a sample size of 62 retailers) had profit margins of less than 6%, with the most common response being 4 to 6%. As we have not been able to identify more up to date evidence, we have used the

[206] Compliance Posters UK Store product listing through Amazon. IT IS ILLEGAL TO SELL TOBACCO PRODUCTS TO ANYONE UNDER THE AGE OF 18 - Children and Families Act 2014 POSTER - A5 SIGN.
[207] NHS Digital. 2022. Health Survey for England, 2022 part 1.
[208] See *Effect size.*
[209] Action on Smoking and Health. 2016. Counter Arguments – How important is tobacco to small retailers?
[210] Hitchman and others. 2016. Small retailers' tobacco sales and profit margins in two disadvantaged areas of England.

estimate from the evidence with the larger and more representative sample of retailers of 6.6% as the profit margin for retailers to estimate lost profit for retailers.

270. We have used the average price of cigarettes and applied this to consumption values to estimate the loss in profit for retailers. This reduces the risk of underestimating the impact of lost profits of retailers. Based on data from HMRC, cigarettes and hand rolling tobacco together make up the vast majority of tobacco duty receipts and clearances (97% of duty receipts and 97% of clearances[211]). Cigarettes are more expensive per cigarette than hand rolling tobacco[212]. Therefore, using the average price of cigarettes and applying this to consumption values reduces the risk of underestimating the impact of lost profits of retailers.

271. The average price of a 20-pack of cigarettes in Quarter 1 of 2024 after the November duty increase was £15.46[213]. Uplifted to 2027 prices, this is £16.20, producing an estimated profit loss per pack of £1.02 for cigarettes.

272. Therefore, based on an estimated 4 billion fewer factory-made packs of cigarettes sold between 2027 and 2056, Table 24 shows the estimated total costs in lost profits to retailers in the UK (borne by all retailers of tobacco, and over 30 years).

Table 24: Profits decreased for retailers due to reduced tobacco sales from fewer smokers, 2024 prices

Year	United Kingdom
2056	£2.37 billion

273. Alternative approaches to estimate the loss in profit to retailers are available. This includes considering the proportional decrease in the total number of smokers in the baseline and central scenario and applying this to total consumer expenditure on tobacco. However, this approach has not been used because a reliable estimate for total consumer expenditure on tobacco only, for England is not available. The closest estimates for total tobacco expenditure are UK wide and also include vapes[214], and disaggregation of the markets has not been possible at the time of this analysis.

274. For this reason, we consider the approach we have used the most accurate with the available data.

Increase in profits from less expenditure on tobacco

275. It is likely that losses estimated will at least in part be offset by increased profits on goods and services purchased in place of tobacco. Specifically for retailers, these goods will also likely carry a higher profit margin than tobacco.

276. It is also possible that there may be a displacement effect whereby tobacco sales increase for those who can still legally purchase tobacco if they want to purchase them for someone they know under the legal age of sale, such as a friend or partner.

[211] HMRC. Tobacco Bulletin Accessed July 2025..
[212] University of Bath. 2018. Study calls for tax hike on Roll-Your-Own cigarettes to deter smoking.
[213] ONS. RPI: Average price – Cigarettes 20 king size filter.
[214] Statista. 2023. Revenue of the tobacco products market in the United Kingdom from 2014 to 2017..

However, the size of any displacement effect of this policy is likely to be reduced by the Bill also making it an offence to purchase tobacco products on behalf of someone under the legal age of sale ('proxy purchasing').

Shisha bars

277. Shisha is smoking heated, specially prepared tobacco through a pipe. The sale would therefore be subject to this legislation in the same way that cigarettes and hand rolling tobacco are. In the consultation, respondents were asked whether they agreed or disagreed that all tobacco products, cigarette papers and herbal smoking products should be covered in the new legislation. Tobacco products includes shisha and 63.8% of those that responded to the question agreed with the proposed product scope, 30.7% disagreed and 5.5% said that they did not know. In 2016, the Health Survey for England[215] found that 1% of adults aged 16 and over had used shisha in the last month and that 15% had tried it at least once.

278. A significant proportion of shisha consumption takes place in shisha bars. An estimate from the vape retailer, Vape Club, suggests that the UK figure was 514 in 2022[216].

279. The costs estimated in this section relate to shisha bars. The costs to other shisha tobacco retailers and wholesalers are assumed to be included in those for general tobacco retailers and wholesalers, as estimated in the sections above.

Cost to check people's ages

280. As with cigarettes and other forms of tobacco, shisha bars may have to spend more time checking their customers ages if the range of ages they need to check is increased. Data on the number of shisha transactions is not available so it is not possible to produce a quantified estimate of this cost. However, given the relatively low number of shisha bars, and the very short time it takes to check someone's ID, this cost is likely to be low.

Cost of staff training and awareness

281. Shisha bar owners and managers, and their staff will need to familiarise themselves with the new legislation. As the guidance documents are likely to be the same as for other tobacco retailers, we assume it will take the same amount of time for them to read them (around 1 hour 6 minutes for managers to read the guidance and 30 minutes for them to pass the information to their staff). The ONS reports the wages of proprietors and staff in hospitality businesses[217]. We selected the roles most similar to those in shisha bars. In 2022, the median hourly wage of restaurant and catering establishment owners and managers was £12.55. The median wages of café staff were £10.50. We uplift these values by 19%[218] to account for non-wage labour costs such as pensions and national insurance. We assume that the average number of staff employed in each shisha bar is the same as the average number of staff employed in beverage serving

[215] NHS Digital. 2018. Health Survey for England (HSE) 2016 use of hookah, shisha and chewing tobacco.
[216] As quoted in Wales Online. 2022.Shisha bars triple over the last decade, as experts warn of 'hookah sickness'.
[217] ONS. 2023. Earnings and hours worked, occupation by four-digit SOC: ASHE Table 14.
[218] Based on data on the non-wage percentage of labour costs from ONS. 2020. Index of Labour Costs per Hour, UK: July to September 2020.

businesses (16 full time and part time employees) [219]. As with other tobacco retailers, we assume that one owner or manager will need to read the guidance and then disseminate this information to all their staff.

282. To estimate the cost to shisha bars to train staff and raise awareness of the new age of sale restrictions and the products range to which it applies, we multiply our estimate of the number of shisha bars by the total time taken for managers to read the new guidance, convey it to their staff, and for staff to listen, by the hourly wage for each group. Table 25 shows the estimated one-off cost to shisha bars in the UK.

Table 25: Cost of staff training and awareness for shisha bars, 2024 prices

Year	United Kingdom
2027	£50,000

Costs to shisha bars to put up new signage

283. Shisha bars may need to pay for new signs to reflect the new age restrictions. This is likely to take a very similar form to the current signs.

284. To estimate the cost to shisha bars of putting up new signage, we multiply our estimate of the number of shisha bars by the typical cost of a new sign (£4.00[220]). Table 26 shows the estimated one-off cost to shisha bars in the UK.

Table 26: Costs to shisha bars to put up new signage, 2024 prices

Year	United Kingdom
2027	£1,900

Profit decreased due to reduced sales

285. Data on the sales and profit margins of shisha bars is not available, so it's not possible to produce a robust estimate of the profit loss. To provide an illustration of the size of the possible profit loss for shisha bars, we can scale the profit loss from other tobacco retailers to the size of the shisha bar sector. This gives an illustrative estimated profit loss to shisha bars of around £14 million in the UK over the 30 year appraisal period. As we have only been able to provide an illustrative estimate for the loss in profits to shisha bars, this cost has not been included in the NPV and EANDCB.

Wholesalers

Profits decreased due to reduced tobacco sales from fewer smokers

286. The methodology for estimating lost profits for wholesalers is the same as for retailers above, with the only change being the overall profit per pack lost.

287. Profit estimates for wholesalers is based on information obtained through the Standardised packaging of tobacco (SPoT) impact assessment consultation. This

[219] Based on Number of employees in beverage serving businesses UK and Number of beverage serving businesses UK
[220] Compliance Posters UK Store product listing through Amazon. IT IS ILLEGAL TO SELL TOBACCO PRODUCTS TO ANYONE UNDER THE AGE OF 18 - Children and Families Act 2014 POSTER - A5 SIGN.

concluded the average profit for wholesalers to be £0.16 per pack which is adjusted to current prices.

288. Therefore, based on an estimated 4 billion fewer factory-made packs of cigarettes sold between 2027 and 2056, Table 27 shows the estimated total costs in lost profits to wholesalers in the UK (borne by all wholesalers of tobacco, and over 30 years).

Table 27: Profits decreased for wholesalers due to reduced tobacco sales from fewer smokers, 2024 prices

Year	United Kingdom
2056	£507.7 million

Increase in profits from less expenditure on tobacco

289. It is likely that losses estimated will at least in part be offset by increased profits on goods and services purchased in place of tobacco.

Manufacturers of tobacco and shareholders

Profits decreased due to reduced tobacco sales from fewer smokers

290. The methodology for estimating lost profits for wholesalers is the same as for retailers above, with the only change being the overall profit per pack lost.

291. Profit estimates for manufacturers are based on information obtained through the Standardised packaging of tobacco (SPoT) impact assessment consultation. For manufacturers this was £0.22 per pack of factory made cigarettes which is adjusted to current prices.

292. Therefore, based on an estimated 4 billion fewer factory-made packs of cigarettes sold between 2027 and 2056, Table 28 shows the estimated total costs in lost profits to manufacturers in England and the UK. However, these costs are assumed to be mostly borne by transnational tobacco companies not based in the UK. There are no major brands that still produce cigarettes in the UK[221].

293. Any information we have been able to find on the UK based tobacco product manufacturing sector shows that it is very small relative to the overall size of the UK tobacco product market and produces a diverse range of specialist products, such as, pipe tobacco and snuff, some of which is sold for export[222]. The only sector data we have been able to identify is from the ONS' Annual Business Survey[223] which for previous years has provided data on the number and turnover of UK based tobacco product manufacturers. According to the data, in 2018 and 2019 there were 9 enterprises manufacturing tobacco products in the UK. In 2018 the total turnover of these businesses was £13m. In 2019 it was £27m. This compares to an estimated revenue from tobacco product sales in the UK (from both UK and oversees manufacturers) of around £24bn[224]. In more recent years, the data in the survey has

[221] BBC. 2016. Last English-produced cigarettes made in Nottingham.
[222] For example, Gawith Hoggarth (https://www.gawithhoggarth.ltd/) and Chancellor Tobacco (HOME - The Chancellor Tobacco Company (chancellor-tobacco.com)
[223] ONS. 2023. Annual Business Survey: Non-financial business economy, UK: Sections A to S (2008 to 2021).
[224] Statista. 2024. United Kingdom (UK): tobacco products market revenue 2014-2027 | Statista

been supressed for confidentiality reasons, possibly due to the low number of businesses responding to the survey. Moreover, that survey data never included information on the proportion of turnover that was derived from UK sales as opposed to exports, which would be needed to estimate the proportion of these businesses turnovers that would potentially be affected by this policy. We have not been able to identify any other data that would allow us to estimate the loss in profit specifically to UK based tobacco manufacturers, such as, total revenue or profit margins. As a result, we have not been able to estimate the loss in profit for the limited number of small UK based tobacco manufacturers.

Table 28: Profits decreased for manufacturers due to reduced tobacco sales from fewer smokers, 2024 prices

Year	United Kingdom
2056	£698.1 million

294. The profit losses are not considered to be in the NPV or EANDCB due to the cost being borne overwhelmingly by business not based in the UK and the fact that we are not able to estimate the impacts to the very small number that are.[225]

Increase in profits from less expenditure on tobacco

295. It is likely that losses estimated will at least in part be offset by increased profits on goods and services purchased in place of tobacco.

Tobacco transportation businesses

Profits decreased due to reduced tobacco sales from fewer smokers

296. We have provided an estimate for the impact this policy would have on tobacco wholesalers and manufacturers. However, it is possible that manufacturers and wholesalers do not act as the importer for all tobacco products in England and the UK. If this is the case, some haulage and transportation businesses that bring tobacco products into the country and distribute them to retailers would also indirectly experience a reduction in profits due to the reduction in the number of smokers and tobacco sales because of this policy.

297. Evidence from the University of Bath suggests that in the UK, there are 13 businesses involved in the logistics, transport, and warehousing of tobacco products[226]. This evidence does not provide a further breakdown of whether these businesses specifically provide logistical, transportation, or warehousing services, or if they provide a combination of all of them. It also includes some tobacco manufacturers, and some of these businesses may also be providing these services for tobacco wholesalers. As a result, it is not clear how many transportation businesses would be affected by this policy.

[225] RPC. 2020. RPC short guidance note on issues around defining a 'business'.
[226] Tobacco Tactics. 2021. Supply Chain Companies.

298. In addition, we have not identified any data or evidence on the profit margins for these businesses and specifically for the transportation of tobacco products.

299. At least some or all of this impact is likely to be offset by increased demand for haulage and transportation in other sectors that see higher sales as result of would-be smokers spending money on other goods instead.

300. Due to a lack of evidence on the number of transportation businesses affected by this policy and their profit margins, and the likely offsetting effects on other sectors, we have not quantified this indirect impact of the regulation and therefore it is not included in the NPV or EANDCB.

HMRC and Taxpayers

Reduction in tobacco duty receipts

301. A reduction in the number of smokers would result in a reduction in sales of tobacco. This would also reduce the amount of tobacco tax and duty collected by HMRC.

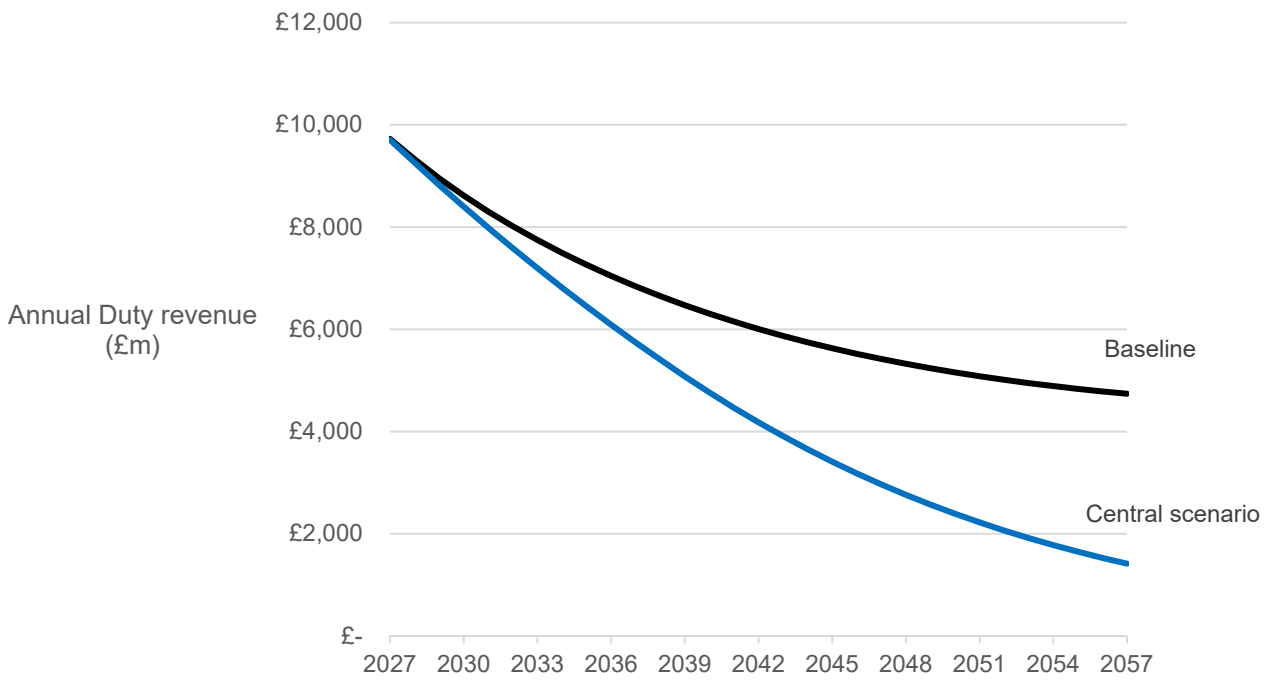
302. The OBR published the Economic and Fiscal outlook, which includes forecasts for tobacco duty revenue.[227] This estimated that duty revenue in 2026/27 would be £9,800 million, and £9,700 million in 2027/28. Taking a weighted average[228] produces a 2027 estimated duty revenue of £9,725 million. In the baseline, smoking prevalence and the number of smokers is expected to fall irrespective of any new policy implemented. While tobacco has been subject to regular duty increases through the duty escalator, this is only in place until the end of the current Parliament. For this reason, duty rates are assumed to remain the same.

303. Duty revenue forecasts are for the UK.

304. Duty revenue in the baseline is assumed to fall proportionally in line with the proportional decrease in the number of smokers each year when compared with 2027.

[227] OBR. 2023. Economic and fiscal outlook - March 2023..
[228] 1 quarter from 2026/27 and 3 quarters from 2027/28.

Figure 11: Estimated annual duty revenue, baseline and central scenario, 2027 to 2057



For example, the number of smokers in the baseline in 2030 is 4,073,698 – 89% of the 2027 figure, therefore estimated duty revenue is assumed to be 89% of 2027 figure.

305. To estimate the loss in duty as a result of the central scenario, the same assumptions of a decrease in revenue proportionally based on the number of smokers is applied. The loss in duty is taken relative to the baseline. Figure 11 shows the estimated baseline duty revenue each year alongside the estimated central scenario duty revenue collected between 2027 and 2056.

306. Future years costs are discounted at a rate of 3.5% in line with The Green Book. Table 29 shows the estimated reduction in tobacco duty receipts over 30 years in the UK.

Table 29: Reduction in tobacco duty receipts, 2024 prices

Year	**United Kingdom**
2056	£23.8 billion

307. This reduction in the tobacco duty revenue represents a transfer from the government collecting this tax to the people in society previously paying the tax. The people that no longer take up smoking because of this policy benefit from an increase in the amount they can spend on other goods and services, and the government loses an equal amount that they can spend. Therefore, this reduction in tax revenue does not make society as a whole better or worse off.

308. On this basis, and in line with HMTs Green Book[229], the reduction in tobacco duty has not been included in the NPV. It also has no impact on businesses, so has not been included in the EANDCB.

309. We recognise that the estimated reduction in tobacco duty revenue over the appraisal period is much larger than any of the other costs of this option. However, it should be noted that even if this cost was included in the NPV, the option would still have a positive NPV of around £70 billion up to 2100.

Department of Health and Social Care

Communication costs

310. This policy would likely require an effective communications campaign, to ensure that retailers, enforcers, and smokers know about the change.

311. When the legal age of sale for tobacco products was raised from 16 to 18 in 2007, it was estimated, in the accompanying impact assessment, that there would be a one-off cost to DHSC of £1 million for such a communication campaign[230]. This cost was based on assessment of the costs for England and Wales. However, we expect that the cost of a communication campaign for England only would have been similar.

312. Although this policy would raise the legal age of sale by one-year every year, we anticipate that only one communication campaign would be required to inform stakeholders that from 1 January 2027 no one born on or after 1 January 2009 can be sold tobacco products.

313. We expect that it would be a similar cost to DHSC for a communication campaign for this policy. Adjusting £1 million in 2007 to current prices and applying a population adjustment to consider it UK wide puts the figure at around £1.5 million. Table 30 shows the estimated cost to DHSC of an effective communications campaign, to ensure that retailers, enforcers, and smokers know about the new policy.

Table 30: Communication costs, 2024 prices

Year	United Kingdom
2027	£1.5 million

314. This would likely be covered by the additional funding announced in October 2023 for new national anti-smoking campaigns (£5 million in year one and £15 million thereafter).[231]

Local Authorities

Enforcement costs – Underage sales

[229] HMT. 2022. The Green Book: appraisal and evaluation in central government.
[230] EXPLANATORY MEMORANDUM TO THE CHILDREN AND YOUNG PERSONS (SALE OF TOBACCO ETC.) ORDER 2007 No.767.
[231] DHSC. 2023. Stopping the start: our new plan to create a smokefree generation.

315. Local authority Trading Standards will be responsible for checking compliance with the new law on the legal age of sale for tobacco.

316. We expect there to be minimal additional costs for local authorities as a result of this policy. Local authorities already check compliance with the current legal minimum age of sale for tobacco of 18 years old through activities including underage sales test purchases and monitoring of public complaints through the Citizens Advice portal.

317. In England, under section 7 of the Children and Young Persons Act 1933[232], local authority Trading Standards officers, on conviction in a magistrate's court, are able to impose a fine of up to £2,500 for an underage sale of a tobacco product or cigarette papers. Local Trading Standards can already issue a fixed penalty of £90 for a proxy purchase of tobacco and nicotine products under The Proxy Purchasing of Tobacco, Nicotine Products etc. (Fixed Penalty Notice) (England) Regulations 2015[233].

318. With the new legal age of sale, local authorities would need to check the same number of businesses, and we expect it to take the same amount of time to investigate any potential offences.

319. Local authorities may incur some additional costs to familiarise themselves with the new law, but do not expect this to be a significant cost.

320. To support Local Authority Trading Standards to enforce the new regulations, the bill introduces fixed penalty notices (FPNs), which are £200 on-the-spot fines for breaches of certain offences in the Bill, including age of sale offences. Local authorities will be able to retain the value of the FPN, to be used for enforcement of tobacco, vaping and nicotine product regulations, which will offset some enforcement costs to local authorities.

321. As it is local authorities that will be responsible for checking compliance with the new law on the legal age of sale for tobacco, we do not anticipate any additional enforcement costs for the police.

Additional quitters engaging with stop smoking services

322. It is possible that legislating a smoke-free generation policy might plausibly lead to an increase in the number of people that attempt to quit smoking. For example, the communications campaign to explain the new law may provide more information on the health risks of smoking and encourage some current smokers to attempt to quit.

323. If this is the case, smokers could attempt to quit through a range of different methods, including using local stop smoking services. These would impose a burden on local authorities to provide support and pharmacotherapies to smokers attempting to quit.

324. The latest data from local stop smoking services shows that between April 2023 and March 2024, 193,505 people set a quit date with services in England. Of those, 104,125

[232] Children and Young Persons Act 1933 (legislation.gov.uk).
[233] The Proxy Purchasing of Tobacco, Nicotine Products etc. (Fixed Penalty Notice) (England) Regulations 2015.

were successful in quitting smoking.[234] The average cost per quitter[235] in 2023/24 was around £727, however this varies by local authority.

325. As we do not have evidence on the number of people that will quit as a result of this policy and how many of them will use local stop smoking services to do so, we have not been able to quantify this cost to local authorities.

326. Funding is also available to support people to quit smoking and additional investment was announced last year including an additional £70 million per year to support local authority-led stop smoking services and £15 million per year for new national campaigns, which will include communicating the benefits of quitting and the support available.

Retail workers

Increased aggression and abuse towards retail workers

327. Violence and abuse towards retail workers has been a concern for the retail sector for several years. Surveys conducted by the retail sector show that levels of violence and abuse in the sector remains high.

328. The British Retail Consortium 2023 Crime Report[236] showed incidents of violence and abuse stood at 867 incidents a day (316,000 in total) in 2021 to 22. Whilst this was down from 1,301 the previous year at the height of the pandemic, it was nearly double the pre-pandemic figure of 455 in 2019 to 20.

329. The Association of Convenience Stores (ACS) Crime Report 2023[237], which represents smaller and independent stores, estimated over 41,000 incidents of violence in the sector and over 750,000 incidents of verbal abuse over a 12-month period.

330. We recognise that, because this policy will increase the number of people that cannot legally be sold tobacco and could lead to more people being asked for ID when purchasing tobacco, there is a risk that it will increase the number of customers that are abusive and aggressive towards retail workers.

331. For a person charged with an underage sale offence, the Bill includes that it is a defence if that person proves they were shown what appears to be a valid identity document, and confirms the types of valid identity document, removing ambiguity and providing clarity for retailers to support them in implementing the age of sale change.

332. The government is clear that violent and abusive behaviour towards any worker, particularly those who provide a valuable service to the public, is never acceptable. The government has already taken a significant step to introduce a statutory aggravating factor for assault against those who are serving the public, via the Police, Crime,

[234] NHS Digital. 2024. Statistics on NHS Stop Smoking Services in England, April 2023 to March 2024 (Q4, Annual) - NHS England Digital.
[235] Across all Local Authorities, including pharmacotherapy costs, but excluding nil returns. Cost per quitter is estimated as the total spent divided by the number of successful quitters.
[236] British Retail Consortium. 2023. Crime Survey: 2023 Report.
[237] Association of Convenience Stores. 2023. The Crime Report 2023.

Sentencing and Courts Act 2022. This legislative change recognises the very strong public and Parliamentary feeling about assaults against public-facing workers.

333. Due to lack of evidence, we are not able to provide an estimate for how this policy may impact the number of incidences of violence or abuse towards retail workers or monetise the impact. When evaluating the impact of the policy, we will consider approaches to assess this specific impact, including using the publicly available data mentioned above.

Tourism, immigration, and international investment

Tourism and immigration

334. The smoke-free generation policy may make the UK a less attractive place to come for tourists, immigrants, and international students that are smokers. If this did happen, it could have knock-on impacts on various sectors in the economy, such as tourist attractions, hospitality, and higher education.

335. Those currently coming to the UK from outside the UK are allowed to bring an amount of tobacco for personal use without paying tax or duty[238]. This includes up to 200 cigarettes or 250 grams of tobacco. There is no personal allowance for tobacco if you are under 17. Duty free rules are not changing under the smoke-free generation policy. We expect tourists to abide by the UK law while they are in the UK.

336. For immigrants coming to the UK, data from ONS shows that the main reasons for EU and non-EU migration to the UK include work, studying, family, and humanitarian reasons[239]. Although it is possible that the actual reason people migrate to the UK is different to the reason they have been granted a visa, we have not identified any evidence to suggest that current smoking laws in this country are a significant driver of immigration. In addition, the tobacco control legislative framework in the UK is already regarded as one of the most comprehensive in the world[240].

337. As we do not have evidence on the impact this policy would have on tourism and immigration, we have not been able to quantify this impact. However, for the reasons explained above, we expect this impact to be minimal.

International investment

338. The smoke-free generation policy may also make the UK a less appealing place for business leaders who smoke to invest in. However, we have not identified any evidence to suggest that current smoking laws in this country influence decisions by business leaders to invest in the UK. Key factors affecting whether investors choose to invest in the UK from abroad include the security and stability of the economy and currency, price levels, interest rates, and tax laws[241]. In addition, as mentioned above, the tobacco

[238] Bringing goods into the UK for personal use: Arriving in Great Britain (viewed on 26 January 2024).
[239] ONS. 2023. Long-term international migration, provisional: year ending June 2023.
[240] Tobacco Control Scale. 2022. Tobacco Control Scale 2021. (viewed on 26 January 2024).
[241] ONS. 2018. Exploring foreign investment: where does the UK invest, and who invests in the UK?

control legislative framework in the UK is already regarded as one of the most comprehensive in the world.

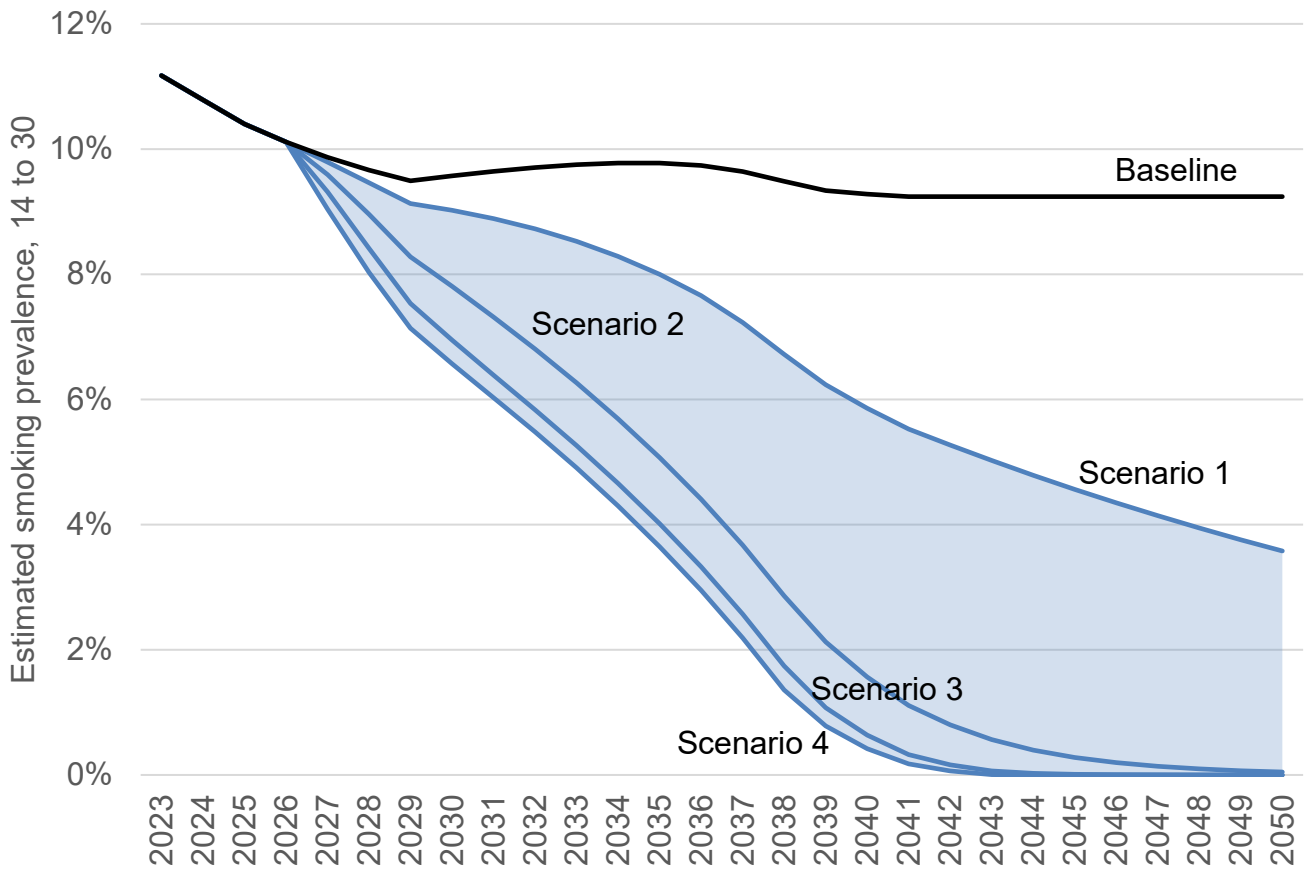
339. As we do not have evidence on the impact this policy would have on international investment, we have not been able to quantify this impact. However, for the reasons explained above, we expect this impact to be minimal.

Sensitivity analysis

Description of scenarios

340. Four scenarios were initially modelled for the smoke-free generation policy, looking at a range of different levels of impact (see Figure 12). These are either more or less optimistic than the central scenario (Scenario 2), assuming greater or lesser reductions in instigation rates for those under the age of sale. These have been updated as part of this impact assessment.

Figure 12: Modelled smoking prevalence (14 to 30 years old), command paper scenarios.



Alternative scenarios (including alternative baseline scenario)

341. Two additional scenarios have been explored as part of this impact assessment.

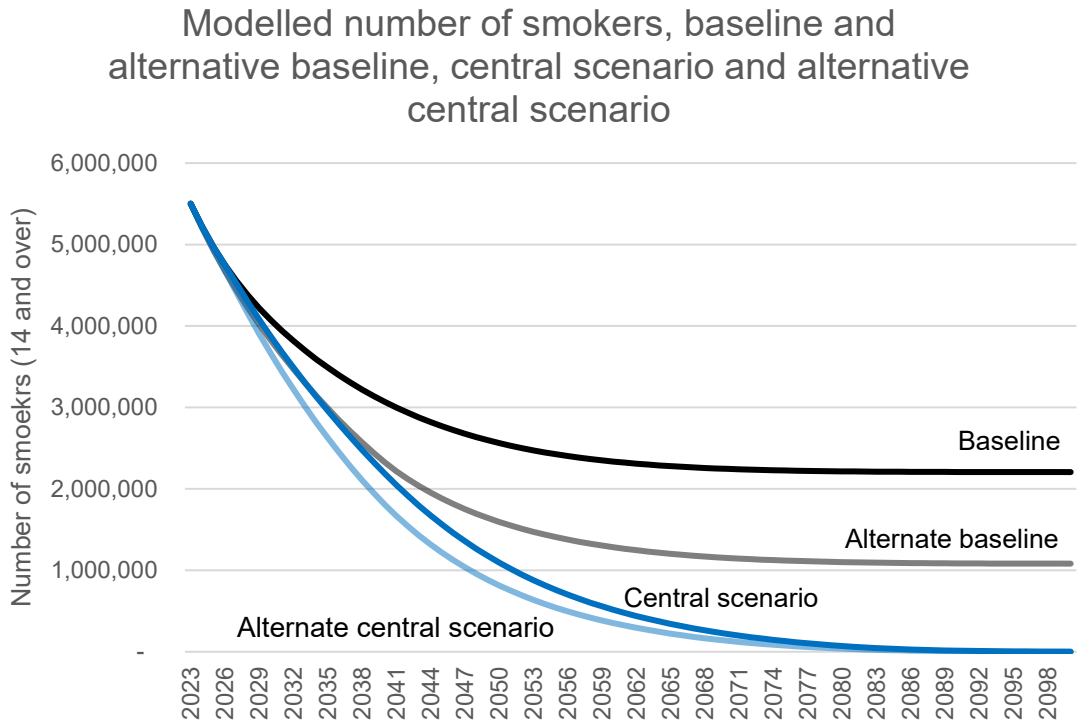
342. Scenario 5 considers a one-off drop in instigation for each age under the new age of sale each year and does not apply a year on year affect as with Scenarios 1 to 4. This one-off drop in instigation rates is modelled as 30% in this scenario (matching the reduction in the central scenario).

343. Scenario 6 assumes the same effect size as the central scenario (a 30% year on year reduction) but is compared against a different baseline. This baseline assumes a continued and projected changing trend in instigation, quit, and relapse rates up to 2040 (developed and provided by the University of Sheffield). It should be noted that the

projected changing trend in the instigation, quit, and relapse rates up to 2040 developed by the University of Sheffield assume that there is some continued policy intervention on smoking. As explained above, we have not used this as our central scenario given the uncertainty about whether these trends in transition probabilities would continue inherently or only as a result of continued policy action on smoking.

344. Figure 13 shows the difference between the two baselines and the modelled central scenario for the number of smokers aged 14 and over between 2023 and 2100.

Figure 13: Scenario 2 (Central scenario) and Scenario 6 (alternative baseline)



345. Table 31 shows the outputs and subsequent costs and benefits associated with each of the different scenarios for the UK (some figures related to the modelling are England only).

Table 31: Sensitivity analysis for England and the UK

Category	Measure, by 2056	Baseline	Scenario 1	Scenario 2 *(Central scenario)*	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Smoking metrics *(England only)*	Number of smokers (14+)	2,431,178	1,346,912	701,167	638,558	620,553	1,913,642	495,854
	Prevalence (14 to 30)	9.2%	3%	0%	0%	0%	6.7%	0%
	Prevalence (18+)	5.1%	2.9%	1.6%	1.4%	1.4%	4.0%	1.1%
Mortality and morbidity *(England only)*	Deaths avoided	-	996	2,602	3,427	3,788	1,059	1,502
	Disease cases avoided	-	4,269	11,165	14,898	16,589	4,665	6,108
Benefits *(UK)*	QALY gains (£m)	-	153	418	580	659	186	241
	Productivity gains (£m)	-	13,175	27,298	30,882	32,197	9,091	19,008
	Health care (£m)	-	1,358	2,814	3,184	3,319	937	1,960
	Social care (£m)	-	887	1,839	2,080	2,169	612	1,280
	Fire costs (£m)	-	481	982	1,107	1,153	324	572
Costs *(UK)*	Lost profits -Retailers (£m)	-	1,152.9	2,366.1	2,684.5	2,801.1	778.4	1,303.3
	Lost profits - Wholesalers (£m)	-	247.4	507.7	576.0	601.0	167.0	279.6
	Lost profits - Manufacturers (£m)	-	340.1	698.1	792.0	826.4	229.6	384.5
	Lost duty (£m)	-	11,572.4	23,750.1	26,946.5	28,116.8	7,813.1	13,387.2
	Familiarisation - Retailers (£m)	-	8.2	8.2	8.2	8.2	8.2	8.2
	Age verification - Retailers (£m)	-	112.3	83.4	75.9	73.1	121.3	83.3
	Signage - Retailers (£m)	-	0.2	0.2	0.2	0.2	0.2	0.2
	DHSC communications (£m)	-	1.5	1.5	1.5	1.5	1.5	1.5
Cost-benefit metrics *(UK)*	NPSV (£m)	-	14,531.9	30,382.9	34,486.6	36,011.0	10,073.1	21,384.1

346. The central estimate suggests that the Net Present Value (NPV) of Option 2 is around £30 billion. We recognise that there are uncertainties that could affect our estimates of each of the costs and benefits.

347. The largest quantified benefit is the productivity gains from the reduced number of smokers as a result of this policy. This is largely based on the ASH estimates for the wider societal costs of smoking in England[242], which at the time of this analysis was the best available estimate. A possible limitation of the ASH estimate is that it does not control for certain factors that may affect a person's earnings. If the ASH estimate is an overestimate of the impact smoking has on productivity in the economy, our estimate of the productivity gains from this policy will also be an overestimate.

348. Despite this, the QALY gains significantly increase over a longer period, and by 2100 are the largest quantified benefit (despite capturing only the effects of mortality, and not the very significant morbidity impact of smoking). By 2100, even if the productivity benefits were removed completely, the policy would still have a positive NPV, of over £50 billion. Therefore, by 2100 there would need to be very large changes in the estimated costs, benefits, or a combination of the two, for the costs to outweigh the benefits.

Specific Impact Tests

349. This impact assessment has considered impacts on a range of stakeholders. Below are a series of specific impact tests undertaken as part of the impact assessment, based on Option 2.

Small and Micro Business Assessment (SaMBA)

350. Based on the scope of the policy, it would not be possible to exempt small businesses[243] from these regulations while still achieving the aims and objectives of the policy. This is because a large proportion of tobacco is still sold in small businesses (retailers and shisha bars), and therefore to exempt them would significantly reduce the reach of the policy – particularly in areas with less access to larger shops (such as rural areas). In addition, this policy will apply to all tobacco products, not just cigarettes and hand rolling tobacco, to ensure that all young people are protected from the harms of tobacco. Therefore, to achieve the aim and objectives of this policy it is also not possible to exempt any tobacco manufacturers that are small businesses, even if they only manufacture specialist products such as pipe tobacco and snuff.

351. Only costs incurred by retailers and shisha bars are quantified for this Small and Micro Business Assessment (SaMBA), as no wholesalers are expected to be operating as small or micro businesses.

352. Although we are aware of a limited number of small and micro tobacco product manufacturers that are based in the UK, who mainly appear to produce a diverse range

[242] Action on Smoking and Health. 2023. £14bn a year up in smoke – economic toll of smoking in England revealed.
[243] Based on the better regulation framework guidance small businesses are defined as those employing between 10 and 49 full-time equivalent (FTE) employees. Micro-businesses are those employing between one and nine employees. Small and micro businesses include voluntary and community bodies (also known as civil society organisations)

of specialist tobacco products, we have not been able to identify sufficient data on these businesses to estimate the loss in profit for these specific businesses as a result of the smoke-free generation policy.

353. With reference to the RPC's SaMBA checklist[244], the very limited data we have been able to identify does not enable us to: i) identify the number of businesses in scope of the regulation; ii) the market share of these businesses; iii) what the impact would be in these businesses - not least because we do not have data on what proportion of their sales are oversees to determine what proportion of their sales are unaffected by this policy. For a more detailed discussion of the data that we have been able to identify see 'Manufacturers of tobacco and shareholders' section above.

354. With respect to retailers and shisha bars that are SaMBAs, the impact assessment considers the following impacts:

- Cost to check people's age
- Cost of staff training and awareness
- Cost of putting up new signage
- Lost profits as a result of reduced consumption

355. Data on the number of retailers comes from the Association of Convenience Stores (ACS), who publish annual reports which includes the number of convenience stores in the UK. In 2024, ACS reports there to be 50,387 convenience stores in mainland UK. The reports do not provide the number or proportion of these that sell tobacco, however, tobacco and e-cigarettes made around 20% of sales, suggesting it is likely the majority do sell tobacco. Of those 50,387, 71% were independent retailers. The other 29% were 'multiples,' defined by the report as '*Retail businesses operating chains of 10 or more convenience stores under a centrally owned fascia.'* For this reason, they are excluded from the SaMBA, and only the costs falling on 71% of the total number of shops is considered. Based on population estimates from ONS[245]. Adjusting the number of convenience stores in the UK by the 71% that would be considered small and micro businesses, this gives an estimated number of small and micro businesses in England of 30,233, and in the UK of 35,775 retailers.

356. That means that the number of convenience stores selling tobacco that are not small and micro retailers is estimated to be 12,349 in England and 14,612 in the UK. Also, based on the estimated number of supermarkets in the UK (5,944[246]) that we assume to sell tobacco, we estimate that there are 5,023 in England and 5,944 in the UK. In summary, the total number of retailers that sell tobacco that are not small and micro retailers is estimated to be 17,372 in England and 20,556 in the UK.

Cost to check people's age

[244] RPC. 2019. Checklist_for_high_quality_SaMBA_NEW_AUGUST_2019.pdf (publishing.service.gov.uk)
[245]ONS. 2022. Population estimates for the UK, England, Wales, Scotland and Northern Ireland.
[246] IGD. 2019. UK Grocery Store Numbers 2018.

357. The additional cost to retailers of having to check more people's age for sales of tobacco are detailed in Option 2[247]. However, this applies to all retailers – here, the specific impact on small and micro businesses is considered.

358. Evidence from the Standardised Packaging of Tobacco impact assessment[248] suggests around 46% of tobacco sales are through smaller retailers[249]. Furthermore, only 71% of the convenience stores would be considered Small and Micro, based on the ACS Local Shop Report. Applying these percentages to the overall costs of additional ID checks to retailers in England suggests that small and micro businesses in England would incur costs of roughly £22.7 million over 30 years, borne by all small and micro retailers. Applying these percentages to the overall costs of additional ID checks to retailers in the UK suggests that small and micro businesses in the UK would incur costs of roughly £26.9 million over 30 years, borne by all small and micro retailers.

359. Given the large, estimated number of small and micro retailers (35,775 in the UK), the cost to any one retailer is likely to be small and spread over 30 years (around £763 on average).

Cost of staff training and awareness

360. The additional cost to retailers of having to familiarise themselves with the new legislation and guidance, and disseminate this information to their staff, is detailed in Option 2[250]. However, this applies to all retailers – here, the specific impact on small and micro businesses is considered.

361. There are an estimated 42,582 convenience stores in England, with one store manager for each. These store managers would have to disseminate this information to 299,957 members of staff. Of those, 71% would be considered small and micro businesses based on the ACS Local Shop Report 2024. Multiplying these estimates by the estimated time it would take them to read and disseminate the guidance[251], and the estimated hourly wage for shop managers and 'Retail cashiers and check-out operators,' gives an estimated cost of around £2.0 million. The estimated cost to small and micro businesses across the UK would be £2.4 million. As this cost would be borne by 29,556 convenience stores in England, and 35,775 in the UK, the cost to any one small or micro business is likely to be small (around £70 on average).

[247] See paragraphs 242 to 250.
[248] Department of Health. 2015. Standardised packaging of tobacco products impact assessment: Specific Impact Tests.
[249] Euromonitor International. 2011. Cigarettes in the United Kingdom.
[250] See paragraphs 252 to 262.
[251] 1 hour 6 minutes for shop managers to read the guidance and 30 minutes for them to disseminate it to members of staff in shops.

Cost of putting up new signage

362. The cost to retailers of having to put up new signage is detailed in Option 2[252]. Here, the specific impact on Small and Micro Businesses is considered.

363. There are an estimated 42,582 convenience stores in England and 50,387 in the UK. Of those, 71% would be considered small and micro businesses according to the ACS Local Shop Report 2024. Assuming that the cost of a new sign is the same for all retailers, assumed to be around £4, we would expect small and micro retailers to incur a one-off cost of around £124,000 in England and £143,000 in the UK. The estimated cost to any one retailer is £4.

Lost profits

364. Lost profits as a result of reduced consumption are detailed above in Option 2[253]. However, this applies to all retailers. Here, the specific impact on Small and Micro Businesses is considered.

365. Evidence from the Standardised Packaging of Tobacco impact assessment[254] suggests around 46% of tobacco sales are through smaller retailers[255]. Further, 71% of these would be considered small and micro businesses according to the ACS Local Shop Report 2024. Applying these percentages (46% and then 71%) to the overall loss in profits (£2,000 million in England, £2,366 million in the UK) to retailers suggests that small and micro businesses would see a loss of roughly £644 million across 30 years, borne by all small and micro retailers in England, and £762 million for the UK. As explained above, there are an estimated 30,233 small and micro business retailers in England, and 35,775 in the UK, and therefore the cost to any one retailer would be spread over 30 years (around £21,600 on average).

366. Small and micro retailers may also incur lost income from reduced footfall-related sales. These are sales of non-tobacco goods bought in addition to tobacco. A 2016 report by ASH[256] reviewed data from 1,400 small retailers across the UK using an electronic point of sale system and compared tobacco and non-tobacco transaction rates. The majority of transactions did not include any tobacco (79%), 13% of transactions included both tobacco and non-tobacco products, and 8% were for tobacco products only. The analysis compared the average values of the different types of transaction and concluded that were was no relationship between the sales of tobacco products and non-tobacco products, and that "*smokers approach the till with a similar basket of everyday items to those who come into the shop with no desire to buy tobacco.*" This evidence suggests that impact of lost income from reduced footfall-related sales for small and micro retailers as a result of this policy may be limited.

367. It may even be the case that small and micro retailers experience an increase in profits from less expenditure on tobacco, as consumers who previously spent money on tobacco now spend money on other products.

[252] See paragraphs 263 to 264.
[253] See paragraphs 265 to 274.
[254] Department of Health. 2015. Standardised packaging of tobacco products impact assessment: Specific Impact Tests.
[255] Euromonitor International. 2011. Cigarettes in the United Kingdom.
[256] Action on Smoking and Health. 2016. Counter Arguments – How important is tobacco to small retailers?

368. However, we have not been able to quantify the net impact for small and micro retailers of a change in products purchased.

Shisha bars

369. It is assumed that all shisha bars are either small or micro businesses. Therefore, the estimated costs to these businesses in Option 2 also reflect the estimated costs to small and micro shisha bars.

- Cost to check people's age: non-monetised
- Cost of staff training and awareness: £50,000 in England; £59,000 in the UK
- Cost of putting up new signage: £1,800 in England; £2,200 in the UK
- Lost profits: non-monetised

Health and longevity impacts

370. Health and longevity impacts are discussed in detail above in Option 2.

Equalities assessment

371. This is a wide-ranging public health measure, aimed at preventing ill health among the population by reducing the number of people that take up smoking.

372. Smoking prevalence is higher in more deprived areas, and so these communities may see a bigger positive impact and reduction of health inequalities caused by tobacco use.

373. This is also the case among certain groups, such as those with mental health conditions, and those in routine and manual occupations. People with poor mental health die on average 10 to 20 years earlier than the general population, and smoking is the biggest cause of this life expectancy gap. As a result, we would expect that the reductions in smoking prevalence delivered by this policy to improve people's mental health, compared to if they had started smoking in the absence of this policy.

374. In relation to sex and sexual orientation, there is evidence that indicates smoking rates are higher among men rather than women, and are higher among bisexual men and bisexual women[257]. Therefore, the policy may have a more positive impact on the health of men as opposed to women, and may also be more beneficial to bisexual people than gay, lesbian and heterosexual people.

375. Smoking prevalence is higher amongst white and mixed communities in England. Also, it is understood that use of tobacco is not limited to just cigarettes and hand rolling tobacco, and that certain tobacco (such as waterpipe and chewing tobacco) may also be more prevalent in some demographic groups. As this policy will apply to all tobacco products, not just cigarettes and hand rolling tobacco, it will ensure that all young people

[257] Jackson and others. 2020. Smoking and Quitting Behavior by Sexual Orientation: A Cross-Sectional Survey of Adults in England | Nicotine & Tobacco Research | Oxford Academic (oup.com)

are protected from the harms associated with all the relevant products covered by the Bill.

376. In England and the UK, smoking prevalence is higher among those who are younger (25 to 34 year olds) compared to those who are older (over 65). This policy will only target those born on or after 1 January 2009, and so will only impact current younger teenagers. The restriction will stay with them throughout the course of their life, and so the positive impact of the policy will later be seen by older age ranges.

377. This policy will not have a direct impact on existing smokers. As a result, this policy is not expected to directly impact adults already living with these characteristics, or in more deprived areas. However, it is likely to ensure that future generations in these groups will have lower smoking rates and therefore improved health outcomes.

378. Overall, we do not assess this policy to have a negative impact on any protected characteristic or other groups assessed.

379. This policy proposal is compliant with age discrimination legislation (Equality Act 2010 and ECHR Article 14) as there is an objective and reasonable justification behind it – the reduction of harm from smoking to public health, which data and consultation back up.

380. A more detailed Equalities Impact Assessment will be completed in due course, which will analyse the impact of the Bill on each of the protected characteristics and considers the impact on the aims of the Public Sector Equality Duty.

Rural proofing

381. There is no evidence to suggest that the smoke-free generation policy will have a significant impact on people living in rural areas. As smoking prevalence is higher in more deprived areas, it may have more of a positive impact on health in deprived rural areas, but also more of an impact on retailers.

Competition assessment

382. As all retailers will have to adhere to the same legal age of sale for purchasing tobacco, this policy does not directly affect the number or range of suppliers. The policy also does not indirectly limit the number or range of suppliers, nor does the policy limit the ability of suppliers to compete. The policy also does not reduce suppliers' incentives to compete vigorously.

383. The impact on retailers could vary between different size businesses, for example, if small and micro businesses faced larger profit losses than larger businesses. However, as explained above, we have limited evidence on the profit margins of retailers for tobacco products, and the evidence we do have does not provide a breakdown of the profit margins for different size businesses.

Environmental impact

384. The overall cost of tobacco litter to local authorities has been discussed above in the assessment of option 2. While we expect the policy will have a positive impact on the environment, we have not currently been able to quantify the overall cost of any changes in tobacco litter. An environmental impact assessment will be conducted in due course.

Human rights

385. We consider the proposal to legislate a smoke-free generation policy to be compatible with the European Convention on Human Rights.

Justice

386. A full justice impact assessment will be conducted in due course.

Vaping and nicotine product policies

387. This section provides an assessment of the costs and benefits of the measures in the Bill to regulate vaping and nicotine products. The Bill will:

- Prohibit advertising and sponsorship agreements for vaping and nicotine products
- Ban vending machines for the sale of vaping and nicotine products.

388. These measures will be implemented by the Bill; therefore, we have attempted to provide a comprehensive assessment of the cost and benefits of these policies and provided a Net Present Value (NPV) and Equivalent Annual Net Cost to Business (EANDCB) for them. Using RPC guidance, our assessment of these policies is in Scenario 1[258].

389. This section also provides an initial assessment of the costs and benefits of measures in the Bill to take regulation making powers to:

- Regulate the contents and flavours of vaping and nicotine products – including any accessories to vaping products which impact their flavour.
- Regulate packaging and product requirements of vaping products and nicotine products.
- Regulate point of sale displays in retail premises of vaping and nicotine products.

390. The detail of how the powers created by the Bill will be used in regulations will be outlined at a later date, following further public consultation. This consultation will also be an opportunity for government to gather further evidence and data regarding these measures. Therefore, this section only provides indicative estimates for some of the costs and benefits and does not provide a NPV EANDCB for these policies. Using RPC guidance, our assessment of these policies is in Scenario 2. Impact assessments (including NPV and EANDCB assessments) will be developed in advance of secondary legislation being brought forward to implement policy changes using these powers. The impact assessments at that stage will also consider the impact of the regulations on other nicotine products, such as nicotine pouches.

391. As outlined in the Policies section of this impact assessment, whilst the above restrictions and regulations will also apply to nicotine products, herbal smoking products and cigarette papers (or in the case of the ban on vending machines, just nicotine products and cigarette papers) the analysis of these measures only considers nicotine and non-nicotine vaping products. This is in part due to limited evidence on evidence and data on other nicotine products, herbal smoking products and cigarette papers. However, the evidence that we do have suggests that the market for these products and use of them among the population is relatively small compared to nicotine and non-nicotine vapes. For the measures that the Bill provides regulation making powers, we

[258] Regulatory Policy Committee. 2019. RPC case histories: assessment and scoring of primary legislation measures.

will look for further data and evidence on other nicotine products when developing impact assessments in advance of secondary legislation being brought forward.

392. As described above, these measures and powers in the Bill will apply to the whole of the UK.

393. For each cost and benefit we have provided a final or indicative estimate for the UK. As we have not identified data to calculate indicative estimates for the UK for every cost and benefit, the UK estimates are the England estimates adjusted based on the relative size of the population in England compared to the whole of the United Kingdom. Based on population estimates from ONS[259], England accounts for around 85% of the population of UK. Therefore, the England estimates have been uplifted by 1.19[260] to provide estimates for the costs and benefits of the vaping policies for the UK.

394. The commencement of these policies in the Bill will be influenced by timelines for Bill passage and any necessary secondary legislation, therefore it is not possible to say exactly when they will come into force. However, for the purposes of this assessment we have assumed that:

- Prohibiting advertising and sponsorship agreements for vaping and nicotine products will apply from 2027.

- Banning vending machines for the sale of vaping and nicotine products will apply from 2026. It is assumed that this policy will come into force earlier than the other polices mentioned in this section because the commencement of the ban on sales from vending machines is prescribed on the face of the Bill and will come into force six months after the Bill achieves Royal Assent.

- Regulations on vaping and nicotine products flavours, packaging and product presentation and point of sale displays will apply from 2027.

395. For clarity, these are presented in 2024 price base and 2024 present value throughout the impact assessment in order to make the figures more comprehensible. The interpretation of the figures throughout the impact assessment then is: '*If this measure were introduced this year, the costs and benefits in today's prices would be this much'*.

396. The Bill will also:

- Ban the free distribution of vaping and nicotine products, to people of all ages, with exemptions for arrangements made by public authorities.

- Ban the sale of non-nicotine vapes and nicotine products to under 18s. The Bill will also ban the purchase of these products on behalf of someone under 18.

397. Although these measures will be implemented by the Bill, we expect that these policies will have limited impacts, particularly on businesses. Given this, we have included them in the 'Other measures' section and provided a proportionate assessment of the

[259] ONS. 2022. Population estimates for the UK, England, Wales, Scotland and Northern Ireland.
[260] Calculated by dividing the population of the UK by the population of England.

potential impact of these policies and demonstrated why we do not expect them to have a significant impact on businesses.

Background and overview

398. Vapes can either contain nicotine or be nicotine-free. Vapes work by heating a liquid that creates a vapour which is then inhaled. A nicotine vape typically contains nicotine, propylene glycol and/or vegetable glycerine, and flavourings.

399. The Bill also refers to 'nicotine products' other than vapes to ensure that all current and future nicotine products are regulated in the same way. Nicotine products are any item or device, or a part of such items and devices, which enables nicotine to be delivered into the human body. The most prominent example currently of a nicotine product other than a nicotine vape is nicotine pouches.

Vapes as a smoking cessation tool

400. The latest evidence has found that, in the short and medium term, vaping poses a small fraction of the risks of smoking[261], because vapes do not contain tobacco.

401. Vaping can therefore provide a less harmful alternative for an adult smoker, by giving the person the nicotine they crave through heating e-liquid but creating fewer toxins and at lower levels.

402. Recent evidence shows that, for many adult smokers, vapes can be an effective tool in supporting smoking cessation, especially when combined with expert support[262, 263]. It found that adverse events from vapes are rare, and as rare as adverse events from nicotine replacement therapies[264]. Ensuring vapes continue to be made available to current smokers can be helpful in reducing smoking rates.

Health risks associated with youth vaping

403. Vaping is less harmful than smoking. However, given the potential health harms, vapes should only ever be used as a smoking quit aid.

404. The main ingredient of vapes that poses a health risk to young people is nicotine. When inhaled, nicotine is a highly addictive drug. The addictive nature of nicotine means that a user can become dependent on vapes when they use them regularly.

405. Giving up nicotine can be very difficult because the body has to get used to functioning without it. Withdrawal symptoms can include cravings, irritability, anxiety, trouble concentrating, headaches, and other mental and physical symptoms.

406. There are also some health risks associated with the other ingredients in vapes. For example, propylene glycol and glycerine (components of e-liquids) can produce toxic

[261] OHID. 2022. Nicotine vaping in England: 2022 evidence update.
[262] Boyce and others. 2022. Electronic cigarettes for smoking cessation.
[263] Lindson and others. 2023. Pharmacological and electronic cigarette interventions for smoking cessation in adults: component network meta-analyses.
[264] Beard and others. 2019. Association of prevalence of electronic cigarette use with smoking cessation and cigarette consumption in England: a time–series analysis between 2006 and 2017.

compounds if they are overheated[265]. The long-term health harms of colours and flavours when inhaled are unknown, but they are very unlikely to be beneficial.

407. There is uncertainty about the scale and nature of long-term vaping harms. Not all the risks from vapes have been fully investigated, including inhaling additives for flavours, and the long-term effects of vaping are yet unknown, although further evidence will likely emerge in the future.

Number of young people that vape

408. It is illegal to sell nicotine vapes to people aged under 18. However, the number of young people that have vaped has increased significantly in recent years. NHS Digital's report, Smoking, drinking and drug use among young people in England 2021[266], showed a recent doubling of regular vape use for 11 to 15 year olds, from 2% in 2018 to 4% in 2021. This is equivalent to around 140,000 children in England aged 11 to 15 years old regularly vaping. The report also shows that vaping prevalence is higher among older children, where 1% of 11 year olds were current vape users, compared with 18% of 15 year olds[267].

409. More recent analysis by ASH also shows the number of young people who have tried vaping has increased. The ASH Use of e-cigarettes (vapes) among young people in Great Britain report showed that in 2024, 18% of children (aged between 11 and 17) had tried vaping, up from 16% in 2022, and 14% in 2020 before the first COVID-19 lockdown[268].

410. The ASH survey also shows that of 11 to 17 year olds who vape, 27% report that they used vapes below the maximum nicotine strength for adults (20mg/ml or 2%), 24% used vapes at the limit and 12% use vapes above the limit. This is compared to 5.3% of 11-17 year olds that currently vape said they usually use non-nicotine vapes.

Environmental impact of vapes

411. This rise in youth vaping in recent years has happened concurrently with the increase in the use of disposable vape products. For example, in 2024, among young people that vape in Great Britain, 54% said the most frequently used device was a disposable (single use) vape, up from 7.7% in 2021[269]. However, as a note of caution, this data is from a cross sectional survey and therefore does not provide a causal link between the increase in youth vaping and the increase in the availability and use of disposable vapes.

412. The rise in the use of disposable vapes has inevitably led to a rapid increase in the volume of these products becoming waste. When littered, disposable vapes introduce plastic, nicotine salts, heavy metals, lead, mercury, and flammable lithium-ion batteries into the natural environment. This contaminates waterways and soil, posing a risk to the

[265] Komura and others. 2022. Propylene glycol, a component of electronic cigarette liquid, damages epithelial cells in human small airways.
[266] NHS Digital. 2022. Smoking, Drinking and Drug Use among Young People in England, 2021.
[267] Regular users were those who used vapes at least once a week. Current use includes regular users and occasional users who used vapes less than once a week.
[268] Action on Smoking and Health. 2024. Use-of-vapes-among-young-people-in-Great-Britain-2024.pdf (ash.org.uk).
[269] Action on Smoking and Health. 2024. Use-of-vapes-among-young-people-in-Great-Britain-2024.pdf (ash.org.uk).

environment and animal health. Disposable vapes also pose a fire risk when not separately collected for specialist recycling, as lithium-ion batteries can ignite when crushed in a refuse vehicle or at waste-processing plants.

413. Research on vape disposal by YouGov, commissioned by Material Focus[270], found that almost 5 million disposable vapes are either littered or thrown away in general waste every week. This has quadrupled in the last year and is equivalent to the lithium batteries that could power 5,000 electric vehicles being thrown away per year. The report found 52% of 18 to 34 year olds who bought a vape in the last year bought a single-use product. The report also found that over 360 million single use vapes are bought in the UK each year, and concerningly, only 73% of these vapes are thrown away.

414. Regulating vape flavours, packaging, and presentation, as well as point of sale displays, is expected to reduce the number of people taking up vaping, and therefore it is expected that there will be environmental benefits from reduced litter from vaping products. The government had published a draft impact assessment[271] and statutory instrument banning the sale and supply of disposable vapes. We are committed to reducing the environmental harm caused by disposable vapes and will look to progress the necessary secondary legislation.

Vape industry

415. The increase in the number of people vaping in recent years has increased the size of the vaping market.

416. To explore the current trends in the disposable vapes market, sales data from a Defra-commissioned report by the consultancy Eunomia has been used[272]. Their research was conducted in 2023 to specifically enhance the evidence base on the single-use/disposable vape market and its environmental impacts within the UK. This included an evidence review, engagement with key stakeholders, and preliminary impact modelling analysing the environmental impacts of single-use vapes. The costs and benefits of the preferred option are assessed against the counterfactual where there is the absence of a ban (i.e. in the 'do-nothing' scenario).

Projected disposable vape sales

417. It was estimated that 360 million disposable vapes were placed on the market (POM) in the UK in 2023[273]. This figure has been projected forward by Eunomia, showing that around 1 billion disposable vapes could be placed on the UK market by 2030. This is based on the assumption that consumption will continue to increase at a declining rate relative to the rapid growth seen prior to 2023 and in the absence of any policy interventions. This also takes into account that some of the more regular disposable vape users would transition to reusable vapes given that these are significantly cheaper over the long term.

[270] Material Focus. 2023. Number of disposable single-use vapes thrown away have in a year quadrupled to 5 million per week.
[271] DEFRA. 2024. Proposal to ban the sale and supply of disposable vapes (UK-wise assessment).
[272] Eunomia. 2023, Analysis of the Market for Vapes: Exploring the environmental impacts of single-use vapes.
[273] Material Focus. 2023. Number of disposable single-use vapes thrown away have in a year quadrupled to 5 million per week.

418. DEFRA initially extrapolated this further to 2034 for their Ban on the sale and supply of disposable vapes in England impact assessment[274], and we have extrapolated the data two years further using the same methodology to reach 1.6 billion projected disposable vape sales in 2036 to cover the appraisal periods for the following two impact assessments: Advertising and sponsorship restrictions for vaping, nicotine products, herbal smoking products, and cigarette papers; and the Ban on vaping product, nicotine product and cigarette paper vending machines.

419. These two policies have different implementation years, and therefore have different appraisal periods.

Table 32: Appraisal periods for prohibiting advertising and sponsorship agreements for vaping and nicotine products and ban on vaping product, nicotine product and cigarette paper vending machines

Impact assessment	Appraisal length	Appraisal period
Prohibiting advertising and sponsorship agreements for vaping and nicotine products	10 years	2027 to 2036
Ban on vaping product, nicotine product and cigarette paper vending machines	10 years	2026 to 2035

420. As it is not specified in the report, we have assumed that the sales estimates reported accounts for both nicotine and non-nicotine vapes. Additionally, we are not able to isolate consumer characteristics from this sales data, and therefore we are unable to estimate the impact on youth sales specifically. As a result, it is not possible to tell in our counterfactual whether some of these sales are illegal nicotine products sold to under 18s, and therefore should be included in the impact on business as outlined by HMT's Green Book.

The modelled counterfactual scenario can be seen in the figure below. For example, figures for years 1,5, and 10 of the vape advertising and sponsorship IA appraisal period have also been displayed in Table 33

421. Table 33 below.

[274] Department for Environment and Rural Affairs (DEFRA). 2024. Ban on the sale and supply of disposable vapes in England. Final Stage IA.

Figure 14: Projected number of disposable vape sales in the UK, 2026 to 2036

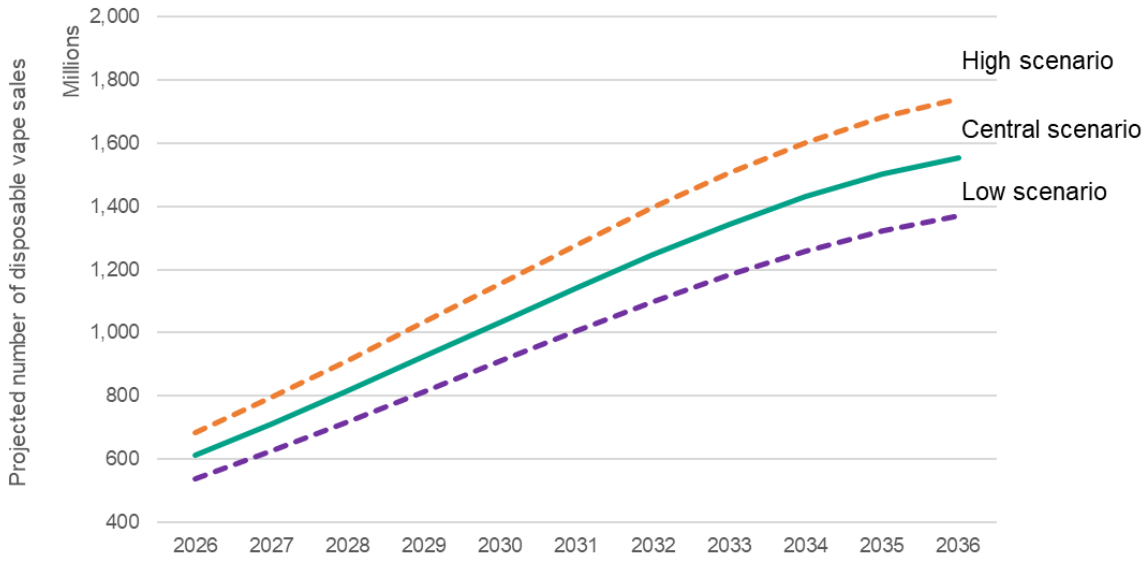


Table 33: Project disposable vape sales in the UK in low, central, and high consumption scenarios

Year	2027	2031	2036
Low	624,409,427	1,005,315,678	1,368,867,885
Central	709,611,198	1,142,492,781	1,555,652,330
High	794,812,969	1,279,669,884	1,742,436,775

422. The forecasts are recognised as being uncertain, and therefore sensitivity analysis around the central scenario has been undertaken to explore this risk, based on the high and low scenarios in single-use-vape consumption forecast in Zero Waste Scotland for the period 2022 to 2027 as Eunomia used the same growth rate for this period. This works out to 12% (to the nearest percent) above and below the average/central scenario for disposable vapes POM, whilst keeping the year-on-year growth rate the same.

423. The year-on-year growth rates of sales in summarised in Table 34, with values to the nearest percent.

Table 34: Year-on-year growth rates of disposable vape sales

Year	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Year-on-year growth rate	18%	16%	15%	13%	12%	11%	9%	8%	6%	5%	4%

424. Eunomia's projection is based on the year-on-year growth rate in single-use-vape consumption forecast in Zero Waste Scotland, for the period 2022 to 2027[275]. This growth trend is assumed to continue between 2027 and 2030, and has been

[275] Zero Waste Scotland. 2023. Scoping policy options for Scotland focusing on understanding and managing the environmental impact of single use e-cigarettes.

extrapolated further assuming it will continue until 2036. In the absence of any intervention, key changes are expected to be a continued growth in the uptake of vapes across the population along with a rising share of disposable vape users (and share of sales revenue) among the growing number who use vapes.

425. Zero Waste Scotland's forecast took into consideration the following:

- The evolution in the proportion of the adults using vapes (all types, not only disposables) appears to be growing at roughly 0.55 percentage points per annum at the Great Britian level, based on data from the yearly GB survey by Action on Smoking and Health (ASH). In addition to the latest figures for the proportion of adults using vapes in Scotland being around 13.2% in October 2022.

- The radical shift reported in sales and the increased use of disposable vapes as a main vaping device indicates a direction of travel, but the pace of the change that was witnessed in 2021-2022 will not be sustained.

- Across a 10-year time period from 2012 to 2022, various 'uptake' surveys (including from the ONS, ASH and the Smoking Toolkit Study) suggested that further increases in user numbers for vapes are likely in the coming years, in addition to there being a decline in smoking prevalence across the same period suggesting that further decline is likely in the future (i.e. since vapes are a smoking-cessation tool, some of the uptake can be attributed to the decline in smoking as smokers quit).

426. As such, it was deemed reasonable to consider that, in the absence of any intervention, key changes to be expected are:

- A continued growth in the uptake of vapes across the population;

- Alongside this growth, a rising share of disposable vape users among the number of those who use vapes (irrespective of some users switching to reusables).

427. More specifically, Zero Waste's Scotland projection was based on the following assumptions based on current trends:

- Uptake of vapes in the under 16s increasing by 2 percentage points per annum[276];

- Uptake of vapes in the population aged 16 and over increasing by 1.5 percentage points per annum (i.e. 1.5% of the population are added to the number of vape users in each year);

- Increase in the proportion of vape users whose main device is disposable vapes of 4% per annum (of e-cigarette users in the age-bracket) across the under 16s, the 16-24 age bracket, and the 25-34 age bracket;

- Increase in the proportion of vape users whose main device is disposable vapes of 2% per annum (of e-cigarette users in the age-bracket) across those aged 35 and upwards;

[276] Zero Waste Scotland's projection note that in their forecast this is not a 'legally compliant' situation, otherwise there would be zero sales of single-use e-cigarettes to under-18s.

- The number of disposable vape units purchased per annum, expressed per person for whom disposable vapes are the main device used, remains constant (139 to 177 disposable vape units per annum per user for the low and high scenarios).

428. The forecasts are recognised as being uncertain, and therefore sensitivity analysis around the central scenario has been undertaken to explore this risk, based on the high and low scenarios in single-use-vape consumption forecast in Zero Waste Scotland for the period 2022 to 2027 as Eunomia used the same growth rate for this period. This works out to 12% (to the nearest percent) above and below the average/central scenario for disposable vapes POM, whilst keeping the year-on-year growth rate the same.

Projected business profits from sales

429. The policies considered in the impact assessments for the vaping policies in this section are expected to reduce the number of people that vape and/or reduce the amount that people vape. This in turn will reduce profit for businesses in the vaping industry.

430. To estimate the impact on businesses profit in the vaping industry because of these policies, we need to apply the above sales projections to assumed sales price and profit margins for businesses.

431. We have assumed retailer, wholesaler, and producer profit margins to be 45%, 12% and 15%[277] respectively. These profit margins have been tested in the sensitivity analysis.

432. Retailer, wholesaler, and producer profit margins have been chosen to be in line with DEFRA's Ban on the sale and supply of disposable vapes in England impact assessment[277] which was collected as part of DEFRA's stakeholder engagement process undertaken in Spring 2024. DEFRA provide a range of profit margins which have been tested in the sensitivity analysis. Based on the average unit price of a vape of £5.38[278] (2024 prices), applying the retailer and wholesaler profit margins, we can estimate that in 2026 the estimated profit per vape for retailers and wholesalers is £2.42 and £0.35 respectively. Retailers' profits per vape are estimated by multiplying the retail price of a vape (£5.38) by retailer profit margin (45%). From here, wholesaler profit per unit is estimated by multiplying retailer price (£5.38 – profit of £2.42), by wholesaler profit margin (12%).

433. Manufacturers' profit margin is assumed to be 15%. DEFRA did not include impacts to manufacturers in their impact assessment as stakeholder engagement highlighted there was likely to be limited domestic manufacturers of disposable vapes, however they used a 15% profit margin for importers/re-branders, which was verified as part of DEFRA's stakeholder engagement process undertaken in Spring 2024. A previous estimate we used for manufacturers was 11% in the Nicotine Inhaling Products impact

[277] Department for Environment and Rural Affairs (DEFRA). 2024. Ban on the sale and supply of disposable vapes in England. Final Stage impact assessment.
[278] Defra research conducted in 2023 based on a sample (a compiled list of approximately 40 products that were deemed to be disposable vapes based on the definition given in paragraph 80) of products for sale from both online and in-store retailers, including specialist vape stores, newsagents and supermarkets.

assessment[279] which was calculated based on accounts filed by two of the largest vape manufacturers, however it is now several years old. We consider 15% as a reasonable assumption for manufacturer profit margins, as it has recently been tested with stakeholders for a similar group of producers. Also, as it is higher than the profit margin used for manufacturers in the Nicotine Inhaling Products impact assessment, 11%, it reduces the risk of underestimating the impact on businesses. Based on the average unit price of a vape of £5.38, we can estimate that in 2026 the estimated profit per vape for manufacturers is £0.39. Manufacturer profit per unit can be estimated by multiplying wholesaler price (£2.95 – profit of £0.35), by manufacturer profit margin (15%).

Table 35: Profits of retailers, wholesalers, and manufacturers. 2024 real prices, not discounted, £m

	Unit cost, £	Unit sales price, £	Profit, £	Profit margin
Manufacturer	2.21	2.60	0.39	15%
Wholesaler	2.60	2.95	0.35	12%
Retailer	2.95	5.38	2.42	45%

434. As the projected vape sales above have been produced for disposable vapes only, we have applied an uplift to estimated profits to account for the non-disposable market. We have applied an uplift to the projected profits for businesses based on industry body stakeholders reporting the single-use vape market sits at around 50% of the market in the UK, as reported by Eunomia[280]. We have applied sensitivity around this for the specific polices.

435. Multiplying the projected vape sales, by business sales price, profit margin and uplifting for non-disposable vapes we are able to estimate business profits in the counterfactual scenario over the appraisal period. For the advertising and sponsorship IA, the counterfactual profit from 2027 to 2036 totals £56bn. For the vending machines IA, the counterfactual profit from 2026 to 2035 totals £53bn.

Table 36: Counterfactual business profits for the vape retailers, wholesalers, and producers in the UK, 2024 price base, 2024 present value, discounted, £m

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Retailer	2,762	3,099	3,436	3,763	4,071	4,349	4,587	4,776	4,910	4,981	4,985
Wholesaler	404	454	503	551	596	637	672	699	719	729	730
Producer	445	499	553	606	656	700	739	769	791	802	803
Total	**3,611**	**4,052**	**4,493**	**4,920**	**5,322**	**5,686**	**5,997**	**6,245**	**6,419**	**6,512**	**6,518**

436. This counterfactual profit has been used in the vape policies below to estimate the impact of the policy options.

[279] Department of Health. 2015. Age of Sale- Nicotine Inhaling Products Impact Assessment.
[280] Eunomia. 2023. Analysis of the market for vapes: exploring the environmental impacts of single-use vapes.

Rationale for government intervention

437. A range of measures are already in place which are intended to deter and restrict children and non-smokers from vaping.

438. As explained above it is already illegal to sell nicotine vapes to people aged under 18[281]. The Government is investing £3 million over two years to support Trading Standards specifically to tackle underage and illicit vape sales[282].

439. Also, under the Tobacco and Related Products Regulations 2016 (TRPR)[283], vape packaging already must contain a message that states that 'This product contains nicotine which is a highly addictive substance'.

440. In October 2022, new content was published on the risks of vaping for young people on the FRANK[284] and Better Health[285] websites, and DHSC provided input to educational resources produced by partners including the PSHE Association. A new resource pack for schools on vaping, intended for children aged 11 to 13, was available for schools for 2023/34 academic year[286].

441. Despite the measures already in place, the data described above shows that youth vaping prevalence continues to increase. Therefore, further government intervention is required to tackle youth vaping and reduce the associated health risks.

442. The Youth vaping: call for evidence[287] which launched in April 2023 looked to identify opportunities to reduce the number of children accessing and using vaping products. It explored the following issues: (i) regulatory compliance, (ii) the appearance and characteristics of vapes, (iii) the marketing and promotion of vapes, (iv) the role of social media, (v) the environmental impact of vapes, and (vi) the vaping market.

443. Through the call for evidence, we heard that vape use among children is increasing, and that vapes are appealing to children and are being marketed and promoted to them. Respondents were concerned about the use of disposable vapes and stated that children find the vape packaging and the products themselves attractive, including the diverse range of available flavours and colours. This was supported by the evidence submitted by respondents.

444. Evidence shows that vaping products are regularly promoted in a way that appeals to children, through flavours and descriptions, in-store marketing of cheap and convenient products. This marketing of vapes encourages children then to vape, which may lead them to become addicted to nicotine when they may not be fully aware of the associated harms of nicotine, and before they are able to make informed, adult decisions.

[281] The Nicotine Inhaling Products (Age of Sale and Proxy Purchasing) Regulations 2015 (legislation.gov.uk), Health (Miscellaneous Provisions) Act (Northern Ireland) 2016 (legislation.gov.uk)
[282] DHSC and Neil O'Brien MP. 2023. Crackdown on illegal sale of vapes.
[283] The Tobacco and Related Products Regulations 2016 (legislation.gov.uk)
[284] FRANK. Vapes. (viewed on 26 January 2024)
[285] NHS. Vaping to quit smoking. (viewed on 26 January 2024)
[286] PHE. Vaping – KS3 form time activities. (viewed on 26 January 2024)
[287] OHID. 2023. Youth vaping: call for evidence.

445. The consultation that was launched in October 2023 under the previous government asked questions about policies which have the potential to reduce the appeal, availability, and affordability of vaping to children. The Bill will provide powers to introduce restrictions on vaping in Regulations. Further impact assessments will be developed for any secondary legislation that is implemented using powers created by the Bill.

446. The government will intervene to limit the extent to which vaping products are promoted to children, including:

- Prohibit advertising and sponsorship agreements for vaping products, nicotine products, herbal smoking products and cigarette papers
- Ban vending machines for the sale of vaping or nicotine products and cigarette papers
- Regulate vaping and nicotine product contents and flavours via further regulations (referred to as ‘Restricting vape flavours’ in this impact assessment)
- Regulate vaping and nicotine product retail packaging and product requirements via further regulations (referred to as ‘Regulating nicotine and non-nicotine vape packaging and product presentation' in this impact assessment); and
- Regulate displays of vaping and nicotine products via further regulations (referred to as ‘Regulating point of sale displays for nicotine and non-nicotine vapes' in this impact assessment)

447. The following sections of this chapter provides details of these proposed policies and analysis of the costs and benefits for restrictions on vaping products (both nicotine and non-nicotine), but not other nicotine products which will also see the same restrictions and regulations as a result of the Bill. The decision to extend these provisions to cover nicotine products is because they contain nicotine, are growing in popularity and thus should be subject to similar regulatory restrictions as nicotine vapes to protect children’s health. There is a growing use of these products amongst younger people, and the government wants to ensure that regulations are future-proof so that nicotine products cannot become as enticing to children as vapes are now. The consultation also highlighted the importance of regulating nicotine products under a single regulatory framework to ease enforcement and reduce the likelihood of loopholes.

Prohibit advertising and sponsorship agreements for vaping and nicotine products

Title: Advertising and sponsorship restrictions for vaping, nicotine products, herbal smoking products, and cigarette papers **IA No:** DHSCIA9618 (1) **RPC Reference No:** RPC-DHSC-5316(3) **Lead department or agency:** Department of Health and Social Care **Other departments or agencies:**	Impact Assessment (IA) **Date:** 05/11/2024 **Stage:** Final **Source of intervention:** Domestic **Type of measure:** Primary legislation **Contact for enquiries:**

Summary: Intervention and Options

RPC Opinion: GREEN

Cost of Preferred (or more likely) Option (in 2024 prices)			
Total Net Present Social Value	**Business Net Present Value**	**Net cost to business per year**	**Business Impact Target Status**
-6251.7m	-6271.7m	728.6m	Qualifying provision

What is the problem under consideration? Why is government action or intervention necessary?

Selling nicotine vapes to under 18s is illegal. Yet youth vaping has nearly tripled in the last four years and 18% of children tried vaping in Great Britain in 2024, which could, in part, be driven by advertising of vapes to children. Vapes should only ever be used as a smoking quit aid. Evidence suggests that use of other nicotine products, such as nicotine pouches, is also increasing.

Due to nicotine content and the unknown long-term harms, vaping and nicotine products carry risk of harm and addiction; this is particularly acute for adolescents whose brains are still developing.

Despite advertising restrictions existing for nicotine vapes in some settings including television, radio and through information society services, such as internet advertising or commercial email, evidence shows advertising is noticed more by young people, and this has increased in some settings in recent years. Additionally, despite being prohibited under TRPR, the ASA report social media is increasingly being used to advertise vapes to children.

Sponsorship agreements are a form of indirect advertising and there has recently been growing concern about the existence of agreements which promote vaping and nicotine products. These agreements normalise the products and may make them seem cool, having a potentially negative influence on the usage of the products among children and non-smokers.

For nicotine vapes, Ofcom regulations prohibit sponsorship of news and current affairs programmes, and any sponsorship of programming which promotes nicotine vapes. The Communications Act 2003 also prohibits sponsorship of on-demand programme services or a programme on these services which promote nicotine vapes. However, for broader settings such as sports events and teams, music festivals and cultural events, sponsorship which promotes nicotine vapes is permitted.

Herbal smoking products contain cancer causing chemicals, tar and carbon monoxide, similar to a tobacco cigarette. Cigarette papers contain bleaches and dyes which add to the range of toxicants added to smoke. Advertising these products normalises smoking.

Government intervention is necessary to restrict advertising and sponsorship to children and young people to prevent the use of harmful products.

Tobacco product advertising and sponsorship is already banned, and these were successful in reducing tobacco consumption.

What are the policy objectives of the action or intervention and the intended effects?

As set out in the government's manifesto and health mission, the government intends to ban vaping and nicotine products from being deliberately branded and advertised to children. This is a key part to stop the next generation from becoming addicted to nicotine.

The intended outcome is that by restricting advertising and sponsorship, vaping and nicotine products will be less visible, appealing and normalised for children and non-smokers, thus reducing their use and protecting

children and non-smokers from the health harms that these products could cause. Therefore, a key indicator of success will be whether uptake of these products, and prevalence amongst young people, decreases.

As with other measures for vaping and nicotine products in the Bill, the restrictions on advertising and sponsorship will be extended to include herbal smoking products and cigarette papers. The government's aim is to break the cycle of addiction and disadvantage by introducing a smoke-free generation policy. Herbal smoking products and cigarette papers have been included due to the harmful nature of smoking. Advertising and sponsorship regulations are already in place for all tobacco products.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

- **Option 1 (Do nothing/BAU)**: continue with the current reduced advertising and sponsorship restrictions for nicotine vapes and full advertising and sponsorship restrictions for tobacco products only.
- **Option 2**: Full ban of advertising or sponsorship which is intended to promote herbal smoking, vaping or nicotine products, or cigarette papers, and powers to create regulations on brandsharing.

Will the policy be reviewed? It will be reviewed. **If applicable, set review date:** 2032

Is this measure likely to impact on international trade and investment?		No		
Are any of these organisations in scope?	**Micro** Yes	**Small** Yes	**Medium** Yes	**Large** Yes
What is the CO_2 equivalent change in greenhouse gas emissions? (Million tonnes CO_2 equivalent)		**Traded:** N/A	**Non-traded:** N/A	

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister: Andrew Gwynne Date: 04/11/2024

Summary: Analysis & Evidence

Policy Option 2

Description: Prohibit advertising and sponsorship agreements for vaping and nicotine products

FULL ECONOMIC ASSESSMENT

Price Base Year 2024	PV Base Year 2024	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low:	High:	Best Estimate: -6251.7

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low				
High				
Best Estimate			781.9	**6572.1**

Description and scale of key monetised costs by 'main affected groups'

The appraisal period is 10 years from the date of implementation (2027). A comprehensive ban on advertising is expected to reduce consumption of vapes, and consequently reduce profits for business (retailers, wholesalers, and producers) by £6,571m. Expected familiarisation costs to retailers for all products in scope, and producers for nicotine vapes and e-liquids are £0.82m. Familiarisation costs to enforcement agencies are estimated to be £0.03m. There will also be an economic transfer of VAT of £1,861m. Estimates are based on limited evidence and assumptions and therefore are uncertain.

Other key non-monetised costs by 'main affected groups'

- Transition costs to business from shifting in how businesses promote their products
- Reduced profits to business from reduced sales of vaping and nicotine products, herbal smoking products, and cigarette papers
- Reduced profits to business from reduced sponsorship for all products in scope
- Reduced profits to business from reduced use of advertising companies
- Familiarisation costs for producers of vaping, nicotine and herbal smoking products and cigarette papers
- Disposal and environmental costs of removing physical advertising and sponsorship
- Health impacts of fewer people using vaping and nicotine products to quit smoking

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low				
High				
Best Estimate			37.3	**320.4**

Description and scale of key monetised benefits by 'main affected groups'

A comprehensive ban on advertising is expected to remove vape advertising costs to business by £300m over the appraisal period. There are also expected benefits to government through reduced fires from vapes of £20m. Estimates are based on limited evidence and assumptions and therefore are uncertain.

Other key non-monetised benefits by 'main affected groups'

- Savings to business from reduced advertising costs of vaping, nicotine and herbal smoking products, and cigarette papers
- Savings to business from reduced sponsorship costs of vaping, nicotine and herbal smoking products, and cigarette papers
- Health gains to individuals due to reduced consumption of the relevant products
- Environmental benefits to society from reduced litter associated with fewer vapes
- Reduced cost to recycle vapes

We expect the majority of the non-monetised benefits to arise within the appraisal period, however we are uncertain on when the health gains to individuals may arise and therefore they could arise outside of the appraisal period.

Key assumptions/sensitivities/risks	Discount rate (%)	3.5%

- Whilst using a regulated vape is far less harmful than smoking in the short to medium term and about as safe as using a nicotine replacement therapy, the long-term health impacts of vaping are unknown, so we are banning advertising and sponsorship of a product where the full negative impacts are not understood.
- We are not able to monetise the impact on children and young people specifically (who are the main target for this policy).
- Estimates are based on limited evidence and assumptions and therefore are uncertain.
- Impacts to business have been estimated using a simplified supply chain model, that may not reflect the market in practice.
- We have considered the counterfactual under the current policy environment; however upcoming policies may impact this.
- The impacts of this policy have been analysed individually, and therefore may not consider the wider changing environment including potential interactions between other policies in this Bill.
- The policy start date in practice may not align with the assumed start date in the analysis (Jan 2027) This is because the restrictions will be commenced by regulations following Royal Assent to ensure a sufficient transition period for industry.

BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £m:			**Score for Business Impact Target (qualifying provisions only) £m:**
Costs:	**Benefits:**	**Net:**	
763.5	**34.9**	728.6	N/A

Evidence Base

Problem under consideration and rationale for intervention

Background and overview

Product definitions

448. Vapes can either contain nicotine or be nicotine-free. Vapes work by heating a liquid that creates a vapour which is then inhaled. A nicotine vape typically contains nicotine, propylene glycol and/or vegetable glycerine, and flavourings.

449. The Bill also refers to 'nicotine products' other than vapes to ensure that all current and future nicotine products are regulated in the same way. Nicotine products are any item or device which enables nicotine to be delivered into the human body. The most prominent example currently of a nicotine product other than a nicotine vape is nicotine pouches.

450. Tobacco products are products consisting wholly or partly of tobacco and intended to be smoked, sniffed, sucked, chewed or consumed in any other way.

451. Herbal smoking products are products consisting wholly or partly of vegetable matter and intended to be smoked but not containing tobacco. They contain cancer causing chemicals, tar and carbon monoxide similar to a tobacco cigarette.

452. Cigarettes papers are anything intended to be used for encasing tobacco products or herbal smoking products for the purpose of enabling them to be smoked.

453. For a full list of products in scope of this impact assessment, please see Annex **.**

Number of people who use these products

454. It is illegal to sell nicotine vapes to people aged under 18. However, the number of young people that have vaped has increased significantly in recent years, and a 2024 ASH survey[288] shows that of 11 to 17 year olds who vape, 27% report that they used vapes below the maximum nicotine strength for adults (20mg/ml or 2%), 24% used vapes at the limit and 12% use vapes above the limit. This is compared to 5.3% of 11-17 year olds that currently vape said they usually use non-nicotine vapes.

455. NHS Digital's report, Smoking, drinking and drug use among young people in England 2021[289], showed a recent doubling of regular vape use for 11 to 15 year olds, from 2% in 2018 to 4% in 2021. This is equivalent to around 140,000 children in England aged 11 to 15 years old regularly vaping. The report also shows that vaping prevalence is higher among older children, where 1% of 11 year olds were current vape users, compared with 18% of 15 year olds[290].

456. More recent analysis by ASH also shows the number of young people who have vaped has increased. The ASH Use of e-cigarettes (vapes) among young people in Great

[288] Action on Smoking and Health. 2024. Use of vapes (e-cigarettes) among young people in Great Britain.
[289] NHS Digital. 2022. Smoking, Drinking and Drug Use among Young People in England, 2021.
[290] Regular users were those who used vapes at least once a week. Current use includes regular users and occasional users who used vapes less than once a week.

Britain report showed that in 2024, 18% of children (aged between 11 and 17) had used a vape, up from 16% in 2022, and 14% in 2020 before the first COVID-19 lockdown[291].

457. ASH[292] report the main source of youth accessing a vape is being given them (54%), followed by purchasing in shops (48%), and informal purchasing (27%). Amongst youth never smokers, the most popular reason for vaping in was reported to be 'just to give it a try' (51%), followed by 'other people use them so I join in' (18%).

458. Young people vaping coincides with the increased use of disposable vapes, with ASH reporting younger adults are the largest driver behind the rise between 2021 and 2023 of people using disposable vapes as their main type of vape[293]. Rising from 2.8% in 2021, it is reported that in 2023 57% of current vapers aged 18-24 used disposables as their main type of device[294]. Amongst youth, in 2024 54% reported disposables were their most frequently used device, this has fallen from 69% in 2022, but is still a large increase from 7.7% in 2021[295]. However, it should be noted that this data is from a cross sectional survey and does not demonstrate that the increase in youth vaping has been driven by the increase in the availability and use of disposable vapes.

459. The ASH survey also shows that children are increasingly aware of vape marketing. 55% of children aged 11 to 17 reported being aware of promotions within shops (up from 37% in 2022), and 29% of children reported being aware of promotions online (up from 24% in 2022).

460. We have limited data on the prevalence of nicotine products (not including vapes), herbal smoking products, and cigarette papers for under 18 year olds.

461. One study indicated that in 2019 1.3% of those aged between 16 and 19 had used a nicotine pouch within the last 30 days[296] . Based on the available evidence on prevalence for those aged between 16 and 19, we assume prevalence for those aged 16 and 17 to be 1.3%, which equates to 19,563 individuals in England. The same study also reported waterpipes (including herbal or tobacco) use amongst 16 to 19 year olds to be 5.8% and nicotine replacement therapies (NRTs) to be 2.7% in 2019.

462. Cigarette papers are used in tandem with tobacco products such as cigarettes and cigars, as they are used to encase the tobacco for smoking. They are also used to encase herbal smoking products.

Vaping and use of nicotine products as smoking cessation tool

463. The latest evidence has found that, in the short and medium term, vaping poses a small fraction of the risks of smoking[297], because vapes do not contain tobacco.

[291] Action on Smoking and Health. 2024. Use of vapes (e-cigarettes) among young people in Great Britain.
[292] Action on Smoking and Health. 2024. Use of vapes (e-cigarettes) among young people in Great Britain.
[293] Action on Smoking and Health. 2024. Use of vapes (e-cigarettes) among young people in Great Britain.
[294] Action on Smoking and Health. 2024. Use of vapes (e-cigarettes) among young people in Great Britain.
[295] Action on Smoking and Health. 2024. Use of vapes (e-cigarettes) among young people in Great Britain.
[296] East, K.A., Reid, J.L., Rynard, V.L. and Hammond, D., 2021. Trends and patterns of tobacco and nicotine product use among youth in canada, england, and the United States from 2017 to 2019. Journal of Adolescent Health, 69(3), pp.447-456
[297] OHID. 2022. Nicotine vaping in England: 2022 evidence update main findings.

464. Vaping can therefore provide a less harmful alternative for an adult smoker, by giving the person the nicotine they crave through heating e-liquid but creating fewer toxins and at lower levels.

465. Recent evidence shows that, for many adult smokers, vapes can be an effective tool in supporting smoking cessation, especially when combined with behavioural support[298,299]. It found that adverse events from vapes are rare, and as rare as adverse events from nicotine replacement therapies[300]. Ensuring vapes continue to be made available to current smokers can be helpful in reducing smoking rate.

Health risks of using these products

466. Vaping is less harmful than smoking. However, given the potential health harms, vapes should only ever be used as a smoking quit aid.

467. The main ingredient of vapes that poses a health risk to young people is nicotine. When inhaled, nicotine is a highly addictive drug. The addictive nature of nicotine means that a user can become dependent on vapes when they use them regularly. Adolescent brains are particularly susceptible to the effects of nicotine.

468. Giving up nicotine can be very difficult because the body has to get used to functioning without it. Withdrawal symptoms can include cravings, irritability, anxiety, trouble concentrating, headaches, and other mental and physical symptoms.

469. There are also some health risks associated with the other ingredients in vapes. For example, propylene glycol and glycerine (components of e-liquids) can produce toxic compounds if they are overheated[301]. The long-term health harms of colours and flavours when inhaled are unknown, but they are very unlikely to be beneficial.

470. There is uncertainty about the scale and nature of long-term vaping harms. Not all the risks from vapes have been fully investigated, including inhaling additives for flavours, and the long-term effects of vaping are unknown, although further evidence will likely emerge in the future.

471. Additionally, evidence has been found that vaping in early adolescents has been shown to increase the likelihood of tobacco cigarette use in later adolescents in the UK and USA[302].

472. While herbal smoking products are not as popular as tobacco products, their smoke contains cancer causing chemicals, tar and carbon monoxide, similar to a tobacco cigarette. Cigarette papers contain bleaches and dyes which add to the range of toxicants in the smoke.

[298] Hartmann-Boyce and others 2022. Electronic cigarettes for smoking cessation. Cochrane Database of Systematic Reviews 2022, Issue 11.
[299] Lindson and others. 2023. Pharmacological and electronic cigarette interventions for smoking cessation in adults: component network meta-analyses. Cochrane Database of Systematic Reviews 2023, Issue 9.
[300] Beard, West, and others 2019. Association of prevalence of electronic cigarette use with smoking cessation and cigarette consumption in England: a time–series analysis between 2006 and 2017. Addiction. 2020 May;115(5):961-974.
[301] Komura and others 2022. Propylene glycol, a component of electronic cigarette liquid, damages epithelial cells in human small airways. Respir Res 23, 216 (2022)
[302] Kelly, Vuolo, and others. 2024. E-cigarette use among early adolescent tobacco cigarette smokers: testing the disruption and entrenchment hypotheses in two longitudinal cohorts. Tobacco control 2024;33:497-502.

473. The main type of ‘nicotine product’ currently on the market are oral nicotine pouches. Pouches already on the market deliver levels of nicotine much higher than regulated vapes. The nicotine content within oral nicotine pouches can vary, typically between 4mg and 18mg of oral nicotine per pouch. Some online retailers are marketing products with pouches containing 150mg of nicotine per pouch[303]. The amount and rate of which nicotine is released during use of an oral nicotine pouch can also vary. Evidence suggests that the release of nicotine from oral nicotine pouches is similar to, or faster than, other smokeless tobacco (ST) products[304]. Oral nicotine pouches are sold in a variety of flavours, examples include black cherry, citrus, and coffee. There is evidence to suggest that oral nicotine pouches are effective at alleviating symptoms of nicotine withdrawal from tobacco-based products (containing nicotine)[305].

Environmental impacts of vapes

474. This rise in youth vaping in recent years has happened concurrently with the increase in the use of disposable vape products. For example, in 2024, among young people that vape in Great Britain, 54% said the most frequently used device was a disposable (single use) vape, up from 7.7% in 2021[306]. However, as a note of caution, this data is from a cross sectional survey and therefore does not provide a causal link between the increase in youth vaping and the increase in the availability and use of disposable vapes.

475. The rise in the use of disposable vapes has inevitably led to a rapid increase in the volume of these products becoming waste. When littered, disposable vapes introduce plastic, nicotine salts, heavy metals, lead, mercury, and flammable lithium-ion batteries into the natural environment. This contaminates waterways and soil, posing a risk to the environment and animal health. Disposable vapes also pose a fire risk when not separately collected for specialist recycling, as lithium-ion batteries can ignite when crushed in a refuse vehicle or at waste-processing plants.

476. Research on vape disposal by YouGov, commissioned by Material Focus[307], found that almost 5 million disposable vapes are either littered or thrown away in general waste every week. This has quadrupled in the last year and is equivalent to the lithium batteries that could power 5,000 electric vehicles being thrown away per year. The report found 52% of 18 to 34 year olds who bought a vape in the last year bought a single-use product. The report also found that over 360 million single use vapes are bought in the UK each year, and concerningly, only 73% of these vapes are thrown away.

477. Regulating vape flavours, packaging, and presentation, as well as point of sale displays, and banning vending machines which sell vapes and nicotine products is expected to reduce the number of people taking up vaping, and therefore it is expected that there will be environmental benefits from reduced litter from vaping products.

[303] For example. Vaporizer Hut. CUBA Ninja Orange Nicotine Pouches - UK (vaporizerhut.co.uk). Accessed August 2024.
[304] Aldeek, and others. 2021. Dissolution Testing of Nicotine Release from OTDN Pouches: Product Characterization and Product-to-Product Comparison. Separations, 8(1), p.7
[305] Thornley and others. 2009. A single-blind, randomized, crossover trial of the effects of a nicotine pouch on the relief of tobacco withdrawal symptoms and user satisfaction. Nicotine & Tobacco Research, 11(6), pp.715-721
[306] Action on Smoking and Health. 2024. Use of vapes (e-cigarettes) among young people in Great Britain.
[307] Material Focus. 2023. Number of disposable single-use vapes thrown away have in a year quadrupled to 5 million per week.

Current advertising and sponsorship legislation

478. Advertising and sponsorship regulations are already in place for all tobacco products, and for some mediums of advertising of nicotine vapes, which is outlined in the Tobacco and Related Products Regulations (TRPR) 2016[308]. This includes a ban on TV advertising, internet and social media, and some types of physical media (e.g. magazines, newspapers). This however is not a complete ban across all media types. For a full list of the products in scope of this impact assessment, please see Annex .

479. The Tobacco Advertising and Promotion Act (2002) (the 2002 Act)[309] introduced measures to limit the marketing and promotion of tobacco products and to reduce exposure to tobacco advertising and promotional activities. The 2002 Act prohibited the advertising of tobacco products to the public, with an exemption for specialist tobacconists, and sponsorship agreements which promote tobacco products.

480. Article 20(5) of the Tobacco Products Directive 2014/40/EU requires EU Member States to introduce restrictions on the advertising of electronic cigarettes. In the UK, these rules have been implemented in the Communications Act 2003, changes by Ofcom (the communications regulator in the UK) to the BCAP Code (UK Code of Broadcast Advertising) and Broadcast Code and in the Tobacco and Related Products Regulations (TRPR) 2016.

481. Brandsharing is the practice where one business's products or services carry the insignia, logos, colours or other identifiable markings of an unrelated product as a way of promoting or marketing goods or services. This is a power in the Tobacco and Vapes Bill, and therefore will be introduced through secondary legislation.

482. Under the Health (Tobacco, Nicotine etc. and Care) (Scotland) Act 2016[310], Scotland has powers to go further on advertising and sponsorship. For instance, they have the power to ban nicotine vape advertising in more settings than those in TRPR, ban sponsorship agreements for nicotine vapes and introduce regulations on brandsharing.

483. Advertising is currently permitted in all advertising mediums for non-nicotine liquids, non-nicotine disposable vapes (not able to be refilled), non-disposable vapes designed to only take cartridges with non-nicotine containing fluid, and medicinal products. However, advertising of these products must not indirectly promote nicotine containing products.

484. Advertising also remains permitted in all advertising mediums for nicotine products, herbal smoking products and cigarette papers. The latter two products have been included in scope of this impact assessment, as they are the only products currently on the market that are not captured by the Tobacco Advertising and Promotion Act 2002, or the TRPR 2016.

485. The Advertising Standards Authority (ASA)[311] requires all permitted advertising for vaping to be socially responsible, not targeted at children and to not make unauthorised

[308] The Tobacco and Related Products Regulations 2016.
[309] Tobacco Advertising and Promotion Act 2002 (legislation.gov.uk)
[310] Health (Tobacco, Nicotine etc. and Care) (Scotland) Act 2016 (legislation.gov.uk)
[311] ASA. 22 Electronic cigarettes. CAP code. Accessed July 2024.

health and/or safety claims. This means that no medium should be used to advertise these products or services if more than 25% of its audience is under 18 years of age.

486. All sponsorship activity is currently prohibited for tobacco products. For nicotine vapes, Ofcom regulations prohibit sponsorship of news and current affairs programmes, and any sponsorship of programming which promotes nicotine vapes.

487. The Communications Act 2003 also prohibits sponsorship of on-demand programme services or a programme on these services which promote nicotine vapes. However, for broader settings such as sports events and teams, music festivals and cultural events, sponsorship which promotes nicotine vapes is permitted.

488. A Cancer Research UK (CRUK) report[312] reveals that most advertising is compliant with current regulations based on expenditure data, with only 0.1% of advertising expenditure in 2019 being in media channels not permitted under TRPR (press and internet). It should be noted however internet only included certain formats, and they were not able to examine spend data based on whether a particular product contained nicotine or not. In their content analysis, a social media advertisement sample was analysed, revealing that all samples were in breach of ASA CAP Code Rule 22.12.

489. CRUK survey analysis[313] also suggests that TRPR has prevented further increases in youth in England noticing vape marketing in prohibited channels. This was concluded by comparing survey results between young people aged 16 to 19 years in England, with youth in Canada and the United States (US). Between 2017 and 2019, England saw relatively stable levels of young people noticing vape marketing in prohibited channels, whereas Canada and the US saw an increase for the same channels, where marketing was not uniformly prohibited.

490. However, whilst awareness of advertising in prohibited channels by young people remained relatively stable between 2017 and 2019, overall, there was an increase in young people's awareness of channels that promote vapes between 2017 and 2019. Awareness of advertisements in permitted channels saw particular increase, however CRUK do not conclude whether this is because of displaced spending following the implementation of TRPR, or an overall increase in the amount of vape marketing.

491. Furthermore, whilst we do not have data on advertising content from 2019 onwards, there are articles indicating the increased use of social media to advertise vapes to children in recent years, despite it being prohibited under TRPR. In 2023 ASA released an enforcement notice to vape manufacturers and retailers requiring them to stop paid promotions on the social media platform TikTok and announced in 2024 they are now expanding their efforts to other social media platforms[314].

492. The TRPR Post Implementation Review (PIR)[315], showed mixed results on the public's opinion on whether the partial restrictions on vape advertising had been an effective way to discourage young people and non-smokers from using e-cigarettes: 40%

[312] Cancer Research UK. 2021. E-cigarette marketing in the UK.
[313] Cancer Research UK. 2021. E-cigarette marketing in the UK.
[314] ASA. 2024. CAP takes action against e-cigarette ads breaking the rules. Accessed July 2024.
[315] OHID. 2022. The Tobacco and Related Products Regulations 2016: post-implementation review - GOV.UK (www.gov.uk)

answered no, 32% yes, and 28% don't know. Whilst some people showed support of advertising bans, 438 responses said restrictions on advertising discourages both young people and non-smokers from using vapes, 323 responses said restrictions should be relaxed, and 170 said restrictions should be tightened. Public Sector bodies had the clearest majority arguing that restrictions on vape advertising should be more severe.

Advertising activity

493. Existing evidence on advertising activities for vapes, other nicotine products, herbal smoking products, and cigarette papers is somewhat limited. However, Cancer Research UK (CRUK) have produced a report[316] exploring vape advertising in the UK. We are not able to comment on the prevalence, content, and expenditure of other products in scope of this impact assessment.

494. Cancer Research UK (CRUK)[316] published a report in 2021 analysing vape marketing in the UK to assess compliance with and the impact of the current UK vape marketing regulations. To assess advertising expenditure and the content of a sample of advertising in 2019, CRUK funded the University of Stirling to produce this analysis. They define advertising in their study as 'the promotion of e-cigarettes through the placement of paid advertising communications'. It should be noted that it is not known whether data from 2019 is reflective of the current advertising market.

495. Advertising expenditure data was obtained from Nielsen's sub-market electronic nicotine delivery systems advertising spend data for the 2019 calendar year. The data covers nine advertising channels and does not examine advertising dependant on the nicotine status of vapes in the study. Nielsen found advertising in six channels: cinema; direct mail; door drops; internet (certain forms only); outdoor; and press. They found no spend data for TV; radio; or email.

- It should be noted that because this is an evolving market it is not known whether data from 2019 is reflective of the current advertising market.
- In 2019, it was reported that advertising expenditure in the sector totalled £32m, with 99.9% being in permitted channels.
- By media channel, the largest expenditure was reported to be outdoor advertising at £29m, accounting for 90% of sector advertising spend. However, it should be noted that advertising expenditure does not necessarily reflect advertising activity.
- CRUK report that twelve brands of vaping products were analysed in this analysis, and six were owned, or partially, owned by tobacco companies. They analysed that 90% of advertising expenditure in 2019 by brands owned by a tobacco company, and when looking at specific media channels, sometimes they accounted for 100% of the expenditure.

[316] Cancer Research UK. 2021. E-cigarette marketing in the UK.

Table 37: Vape advertising expenditure by media channel, 2019, Cancer Research UK[317]

Media channel	2019 spend, £	% of total spend
Permitted		
Cinema	1,576,860	4.9%
Direct mail	303,791	0.9%
Door drops	1,286,863	4.0%
Outdoor	29,035,424	90.1%
Prohibited		
Press	35,346	0.1%
Internet	767	0.0%
Total	**32,239,052**	**100%**

Table 38: Vape advertising expenditure by media channel and tobacco company status, 2019, Cancer Research UK[318]

	Cinema	Direct mail	Door drops	Outdoor	Press	Internet	Total
Tobacco company brand							
Expenditure	1,576,860	303,791	1,286,863	25,836,647	0	690	29,004,851
% of media channel	100%	100%	100%	89%	0%	90%	90%
Non-tobacco company brand							
Expenditure	0	0	0	3,198,778	35,346	77	3,234,201
% of media channel	0%	0%	0%	11%	100%	10%	10%
Total	**1,576,860**	**303,791**	**1,286,863**	**29,035,424**	**35,346**	**767**	32,239,052

496. To analyse vape advertising content, CRUK produced a content analysis[316] of paid-for advertising across seven media channels for the UK in 2019. They produced this analysis based on two samples of advertising. The first sample was obtained from Nielsen and collected examples of real-world advertising, of which 134 examples were found and 100 randomly selected. The second sample was collected for social media, via one social media platform (Instagram), and three "popular e-cigarette products and specialist e-cigarette retailers on the UK market with Instagram accounts were selected", and a random sample of 10 Instagram posts were selected for analysis from each of the brands.

497. From content analysis, outdoor advertising remains the most frequently appearing advertising with 51% of the sampled adverts classified as outdoor ads. This includes digital, static, and transport advertisements. More detail on the content within the adverts are provided at the linked source.

498. CRUK also used the ITC Youth Tobacco and Vaping Survey[319] waves 1(2017), 2(2018) and 3 (2019) which measures uptake of nicotine vaping products amongst youth (16 to 19 years old) in the US, Canada, and England. They recruited respondents via Nielsen Consumer Insights Global Panel and affiliated partners. They also analysed adults through the ITC 4CV Survey waves 1 (2016) and 2 (2018) which measures adults (aged 18+) who smoke and/or vape, or who have quit smoking in Canada, the US, England, and Australia.

499. CRUK results[316] suggest advertising is noticed more by younger people in England.

[317] Cancer Research UK. 2021. E-cigarette marketing in the UK.
[318] Cancer Research UK. 2021. E-cigarette marketing in the UK.
[319] Hammond and others. 2020. Youth Tobacco and Vaping Survey Technical Report- Wave 3 (2019). Waterloo, Ontario.

- CRUK survey results reveal for all types of media analysed, apart from ‘email/SMS’, youth (16 to 19 years) noticed advertisements more than adults (18 years and older) in 2018 in England. The locations and media channels surveyed included: inside shops selling cigarettes; kiosks; web/social media; billboards/posters; newspapers/magazines; events/festivals; bars/pubs; and email/SMS. The largest difference in the two age groups was seen for 'billboards and posters’ with 31.4% of youth noticing marketing compared to 5.9% of adults.

- Likewise, youth (16 to 19 year olds) never users (who have never smoked or vaped) report higher noticing of vape advertising across all media types, apart from email/SMS compared to adult exclusive smokers. Additionally, young adults (aged 18 to 24) report noticing vape marketing more across all media types than older adults (aged 25+). CRUK report that they could not find literature suggesting young people notice advertising more than adults, however their survey results suggest there may be an association between noticing of vape marketing and age.

- Similarly, an Action on Smoking and Health survey[320] found that more than half (55%) of 11 to 17-year-olds are aware of vape promotion in shops compared to 37% two years ago, while 15% see adverts on billboards, up from 12% two years ago.

500. Evidence suggests that vape advertising is appealing to young people.

- Respondents from the Youth Vaping: Call for Evidence[321] in 2023 noted that vape adverts are appealing to children, with some citing evidence on the susceptibility[322] of young people to vape advertising, including from adverts that were not designed to appeal to young people.

- Other respondents mentioned the 2021 CRUK report[323] where survey results found that over a third of 16 to 19 year olds in England across 2017 to 2019 believed that vape marketing made vaping seem either appealing or very appealing.

501. While we do not have data on advertising content from 2019 onwards, there are articles indicating the increased use of social media to advertise vapes to children in recent years, despite it being prohibited under TRPR. In 2023 ASA released an enforcement notice to vape manufacturers and retailers requiring them to stop paid promotions on the social media platform TikTok, and announced in 2024 they are now expanding their efforts to other social media platforms[324].

502. Social-cognitive theories suggest that the effects of advertising are subtle yet have impacts on behaviours that may be outside the participants’ awareness through ‘priming’[325]. Priming studies have demonstrated that complex social and physical behaviours can be subconsciously activated through external stimuli. This is to say,

[320] Action on Smoking and Health. 2024. New figures show youth vaping has plateaued whole adult vaping is at an all-time high.
[321] OHID. 2023. Youth vaping call for evidence analysis.
[322] Williams and others. 2023. Use of tobacco and e-cigarettes among youth in Great Britain in 2022: Analysis of a cross-sectional survey. Tobacco Induced diseases. 21(January), 5.
[323] Cancer Research UK. 2021. E-cigarette marketing in the UK.
[324] ASA. 2024. CAP takes action against e-cigarette ads breaking the rules. Accessed July 2024.
[325] Bargh and others. 2008.The unconscious mind. Perspectives on Psychological Science. 2008;3:73–79

many of the messages delivered through advertisement may not affect conscious decision-making behaviour but will act in the subconscious. The implication of this is that if advertising were to act on the subconscious through 'priming', then young people and adults may not even be aware of the effect advertising is having.

503. Because children and adolescents are still developing cognition it could be the case that they may not be able to fully understand the effect that advertising could be having on them. A recent House of Commons research briefing[326], outlined that children are less likely to be able to understand and process commercial messages in advertisement than adults. A meta-analysis[327] of advertising for unhealthy products (e.g. unhealthy foods, tobacco, and alcohol) concluded that "Evidence shows that the attitudes of young people were influenced by advertising. Critical reasoning abilities did not appear to be fully developed during adolescence and not found to be protective against the impact of advertising".

Sponsorship activity

504. Sponsorship is a form of indirect advertising and vape sponsorship of sport has recently been in the press for its potentially negative influence on youth uptake. All sponsorship activity is currently prohibited for tobacco products. For nicotine vapes, Ofcom regulations prohibit sponsorship of news and current affairs programmes, and any sponsorship of programming which promotes nicotine vapes. The Communications Act 2003 also prohibits sponsorship of on-demand programme services or a programme on these services which promote nicotine vapes. However, for broader settings such as sports events and teams, music festivals and cultural events, sponsorship which promotes nicotine vapes is permitted.

505. It is thought that having vape sponsorship encourages an environment where vaping is becoming more socially accepted and frequently used. Whilst vaping can be an effective tool for smoking cessation, there is concern that it will encourage younger members of the audience to take up vaping.

506. Whilst we do not think vape sponsorship is hugely prevalent; it could still contribute to an environment of social acceptance. Evidence is limited on the causal links between vape companies sponsoring events and youth uptake of vaping, however concerns have been raised.

507. The Youth vaping call for evidence analysis (2023)[328] reported hearing about vape companies providing sponsorship in sports which would potentially expose children to their branding. For example, a small number of football teams have been reported to have sponsorship deals with vape companies[329].

508. A recent consultation undertaken by the Scottish Government[330] reported a mixed response for support of their proposal to make vape sponsorship agreements in respect to vaping products illegal with 44.9% of respondents in support and 48.7% not in

[326] House of Commons. 2024. Advertising to children.
[327] Packer and others. 2022. Advertising and Young People's Critical Reasoning Abilities: Systematic Review and Meta-analysis. Pediatrics 2022 Dec 1;150(6
[328] OHID. 2023. Youth vaping call for evidence analysis.
[329] BBC. 2024. Prime minister questioned over vapes advertising on sports kits. Accessed July 2024.
[330] Scottish Government. 2022. Vaping products- tightening rules on advertising and promoting: consultation analysis.

support. Additionally, they report the existence of music events and festivals being sponsored by vaping brands and the concern that “whilst some of these events are 18+, not all are”.

509. Whilst now banned, sponsorship of sporting events was thought to be a key advertising technique used by tobacco companies to promote cigarettes. Linking sport sponsorship to youth smoking, a UK study found a preference for motor racing amongst boys aged 12 to 13 was significant in the progression to regular smoking[331].

Rationale for government intervention

Vaping and nicotine products

510. Restrictions on advertising and sponsorship are part of the Tobacco and Vapes Bill. Therefore, while advertising and sponsorship alone may not completely reduce the usage of vaping and nicotine products by children and non-smokers, the package of landmark policies will work together to protect children and non-smokers from the potential harms of vaping and the risk of nicotine addiction.

511. The Bill will also:

- introduce a minimum age of sale of 18 on non-nicotine vapes and nicotine products to ensure they cannot be sold to children;
- ban the free distribution of vaping and nicotine products;
- ban vending machines that stock vaping and nicotine products.

512. It also provides the government with regulation making powers to:

- restrict flavours, point of sale display, and packaging for all vaping and nicotine products;
- make places that are smoke-free also vape-free; and
- strengthen existing product standards and improve the current vape notification system.

513. The government is best placed to intervene in this market because:

- The numbers of children and young people vaping has increased significantly in recent years[332,333].
- Children and young people are particularly vulnerable to advertising, and it is thought that the products being developed in the market are increasingly becoming

[331] The Lancet. 1997. Boys’ smoking and cigarette-brand-sponsored motor racing. Accessed via: U.S. National Cancer Institute and World Health Organization. 2016. The Economics of Tobacco and Tobacco Control. National Cancer Institute Tobacco Control Monograph 21. NIH Publication No. 16-CA-8029A.
[332] NHS Digital. 2022. Smoking, Drinking and Drug Use among Young People in England, 2021.
[333] Action on Smoking and Health. 2024. Use of vapes (e-cigarettes) among young people in Great Britain.

appealing to younger children through introduction of increased flavours, disposable products, and bright packaging.

- It is thought that children and young people notice vape advertising more than adults, with the rate of 11 to 17 year olds being aware of vape advertisements increasing[334], and adolescents agreeing that adverts are appealing[335]. Whilst there is limited literature on the link between age and vape advertising, CRUK survey[336] results could suggest a link.

- Whilst partial bans are already in place, advertising of permitted channels has been seen to be increasingly noticed, especially by young people, and the overall noticing of vape advertising has increased[337]. Additionally, evidence for tobacco found that partial bans are not as effective as comprehensive bans, which were successful in reducing tobacco consumption[348] suggesting that a comprehensive ban could be more effective in reducing consumption of vapes[338].

- Additionally, whilst advertising vapes online is not permitted under TRPR, it is difficult to enforce and in 2023 it is reported that the ASA issues enforcement notices to vape manufacturers and retailers requiring them to stop paid promotions on the social media platform TikTok[339].

- Additionally, the long-term harms from vaping and use of nicotine products are not well evidenced, and therefore consumption decisions are being made without health implications being known.

Herbal smoking products and cigarette papers

514. The government's aim is to break the cycle of addiction and disadvantage by introducing a smoke-free generation policy, gradually ending the sale of tobacco products across the country. Herbal smoking products and cigarette papers have been added to the smoke-free generation policy and other measures due to the harmful nature of smoking.

515. Whilst herbal smoking products do not contain nicotine or tobacco, they do contain cancer causing chemicals, tar and carbon monoxide, similar to a tobacco cigarette. Cigarette papers have also been included as they are burnt with the tobacco. This is consistent with other parts of the Bill.

Rationale and evidence to justify the level of analysis used in the IA

516. The evidence base for the influence and impact on vaping and nicotine products is limited, compared to evidence for tobacco. This could be due to vaping being a relatively new activity, with the product coming to market in the UK around 2007. Additionally, it is believed that the market has grown substantially in the past few years, however there is a data reporting lag and limited information, so the data and analysis is

[334] Action on Smoking on Health. 2024. New figures show youth vaping has plateaued while adult vaping is at an all-time high.
[335] Cancer Research UK. 2021. E-cigarette marketing in the UK.
[336] Cancer Research UK. 2021. E-cigarette marketing in the UK.
[337] Cancer Research UK. 2021. E-cigarette marketing in the UK.
[338] U.S. National Cancer Institute and World Health Organization. 2016. The Economics of Tobacco and Tobacco Control. National Cancer Institute Tobacco Control Monograph 21. NIH Publication No. 16-CA-8029A.
[339] ASA. 2024. CAP takes action against e-cigarette ads breaking the rules - ASA | CAP

limited. This holds for other countries as well, whilst there have been some global studies, the evidence base remains weak.

517. Herbal smoking products are not as popular as tobacco products, so the evidence base is limited in comparison to tobacco products.

518. The appraisal period used in this impact assessment is 10 years. We have used the default time horizon, as suggest by HMT Green Book[340] as we do not think there is rationale for extending the period if the long-term impacts of the products in scope are unknown. In addition, some cost estimates in the impact assessment are based on projected consumption. Projecting these figures beyond a 10 year appraisal period would likely decrease the robustness of the estimates. We expect the majority of the non-monetised benefits to arise within the appraisal period, however we are uncertain on when the health gains to individuals may arise and therefore they could arise outside of the appraisal period.

519. Due to the limited evidence base, we have had to make assumptions in our analysis to provide monetised costs and benefits. Where assumptions have been taken, they are clearly outlined in the impact assessment, and where they have been identified as key assumptions, they have been tested in the sensitivity analysis.

520. For several of our assumptions we have not been able to test them with industry. This is partially due to the time scales at which the analysis needed to be produced, as well as Article 5.3 of the World Health Organization's Framework Convention on Tobacco Control (FCTC), which protects public health policy from the vested interests of the tobacco industry. To test the assumptions, we have provided a thorough quality assurance and sensitivity analysis to provide a robustness check and show their influence on the quantified costs and benefits.

521. When developing the evaluation, we will consider where data can be collected to improve the evidence base in this area.

Policy options

Policy objective

Vaping and nicotine products

522. The government's aim is to ban vaping and nicotine products from being deliberately branded and advertised to children to stop the next generation from becoming addicted to nicotine.

523. Evidence[341] shows young people's (11 to 17 year olds) noticing of vape promotion has increased in recent years across several settings, and therefore could suggest advertising may be being deliberately targeted to children and this is extremely worrying given the unknown long-term health impacts and the addictive nature of the nicotine

[340] HMT. 2022. The Green Book: appraisal and evaluation in central government.
[341] Action on Smoking and Health. 2024. New figures show youth vaping has plateaued whole adult vaping is at an all-time high.

contained in vapes. More detail on the health harms of vaping and nicotine addiction have been set out elsewhere in this impact assessment.

524. Even though non-nicotine vapes do not contain nicotine, it has been observed that nicotine can be manually added to non-nicotine vapes, and so restricting the legislation to nicotine vapes opens up a loophole.[342] Some products that have been marketed as nicotine free have been found to contain nicotine when tested by trading standards. There are also some health risks associated with the other ingredients in vapes. For example, propylene glycol and glycerine (components of e-liquids) can produce toxic compounds if they are overheated.[343]

525. Therefore, introducing bans on advertising and sponsorship of vaping and nicotine products will help to achieve the aim of reducing the appeal of these products to children and non-smokers. This policy does not impact the existing regulations for tobacco products. Therefore, this impact assessment does not consider these regulations as there has been no policy change and as a result will not have additional costs and benefits.

Herbal smoking products and cigarette papers

526. The government's aim is to break the cycle of addiction and disadvantage by creating a smoke-free generation policy, gradually ending the sale of tobacco products across the country. Herbal smoking products and cigarette papers have been added to the smoke-free generation policy and other measures due to the harmful nature of smoking.

527. Whilst herbal smoking products do not contain nicotine or tobacco, they do contain cancer causing chemicals, tar and carbon monoxide, similar to a tobacco cigarette. Cigarette papers have also been included as they are burnt with the tobacco. This is consistent with other parts of the Bill.

Description of options considered

528. Two policy options have been considered in this Impact Assessment, which are either maintaining the current position for herbal smoking, vaping and nicotine product and cigarette paper advertising and sponsorship or extending the current restrictions for tobacco products to include current position for herbal smoking, vaping and nicotine products and cigarette papers.

529. The following options were previously considered but discounted:

- Extending current regulations[344] relating to nicotine vapes to include non-nicotine vapes and nicotine products- this was discounted as settings visible to under 18s and non-smokers would remain, such as on billboards, posters and public transport. There would also be disparity with the advertising of tobacco products which may confuse retailers.

[342] For example, IndeJuice, provide guidance on adding nicotine to vapes. IndeJuince. 2022. https://indejuice.com/vape-guides/how-do-you-add-nicotine-to-0mg-juice. Accessed August 2024.
[343] Komura and others. 2022. Propylene glycol, a component of electronic cigarette liquid, damages epithelial cells in human small airways.
[344] The Tobacco and Related Products Regulations 2016 (legislation.gov.uk)

- Banning sponsorship in certain settings, such as of sports kits. There was lots of parliamentary interest in this option given there are examples of vaping companies sponsoring sports teams. However, this was discounted as sponsorship agreements promoting vapes and nicotine products may also occur in other sectors such as music events. Therefore, there would be possible loopholes and a lack of futureproofing. It would also be inconsistent with the sponsorship bans for tobacco products which may be confusing for industry.

Option 1: Do nothing

530. This option would mean that the current advertising restrictions continue for nicotine vapes, which includes a ban in some settings (TV, radio, printed publications) but not others (public transport, billboards).

531. There would continue to be no restrictions for non-nicotine vapes or nicotine products which would mean adverts which appeal to children can continue to exist.

532. Herbal smoking products and cigarette papers would continue to be advertised to non-smokers and those trying to quit smoking.

533. Sponsorship deals which promote vaping and nicotine products would also be able to continue. For example, it would mean that vape companies could sponsor sports teams which are visible to children.

534. Therefore, keeping restrictions as they are would not achieve the policy objective or tackle the challenge of vapes and nicotine products appealing to children and non-smokers, so this option was discounted.

Option 2: Ban of all advertising of nicotine and non-nicotine vapes and nicotine products, and sponsorship which promotes these products, and prohibiting the advertising of herbal smoking products and cigarette papers, and regulate brandsharing

535. This option would ban all advertising of nicotine and non-nicotine vapes and nicotine products, and sponsorship which promotes these products, which creates alignment with the current legislative framework for tobacco products.

536. In practice, this would mean adverts which we have heard appeal to children will no longer be permitted on posters, billboards, or on the side of buses. It also means the existing legislation for nicotine vapes will apply to non-nicotine vapes, which can have nicotine added to them, and nicotine products. This is important given nicotine is addictive and the government wants to protect the next generation from becoming addicted to nicotine.

537. By removing these adverts and sponsorship, vaping and nicotine products will be less visible to children and non-smokers and is likely to reduce them finding these products attractive or using them.

538. This approach also aligns with other countries who have taken similar bans on advertising. For instance, Norway and Australia have banned the advertising and promotion of vapes in line with tobacco products which is a blanket ban.

539. This option would also ban all advertising of herbal smoking products and cigarette papers, aligning them with tobacco products. Smoking would become denormalised and is likely to reduce non-smokers and those looking to quit smoking from finding these products attractive or using them.

540. Aligning with the current tobacco regulations will also mean that most retailers are familiar with the restrictions so it should be easier for them to adapt to the new framework, rather than them being required to follow a separate legislative framework for vaping, nicotine, tobacco and herbal smoking products and cigarette papers.

541. All size businesses are in scope of this impact assessment given advertising and sponsorship is prevalent in a variety of settings including both small and larger retailers or organisations. Therefore, to achieve the aim of reducing the visibility of vaping and nicotine products, including to children, all advertising and sponsorship must be restricted.

542. This policy is being taken forward UK-wide as with other measures in the Tobacco and Vapes Bill. This ensures that children and non-smokers across the UK will be protected nicotine addiction. Advertising is mostly reserved, however there are some areas of advertising and sponsorship which are devolved. On these areas, we have had agreement from the Devolved Administrations to include on the face of the Bill given this is a shared policy aim.

Changes to legislation under Option 2

543. The Tobacco and Vapes Bill repeals and replaces the Tobacco Advertising and Promotion Act (2002) and extends the scope of the provisions relating to advertising, sponsorship and brandsharing of tobacco products in the 2002 Act to include herbal smoking products, cigarette papers, vaping and nicotine products. These measures are UK-wide.

544. The existing regulations on advertising restrictions of nicotine vapes as set out in the Tobacco and Related Products Regulations (TRPR) 2016[345] will be replaced by the provisions in this Bill. The settings where advertising is banned for nicotine vapes under these regulations will be captured by the Bill and extended to include further settings such as public transport, billboards, and posters, and capture nicotine products that are currently not captured in a similar way to tobacco products.

545. The Tobacco and Vapes Bill makes it an offence to publish, design, print and distribute any advertisements which promote tobacco products, cigarette papers, herbal smoking, nicotine and vaping products in the course of business. It also makes it an offence to cause the publication, designing, printing and distribution to capture those who commission others to support with advertising, and makes it an offence to provide an internet service by means of which an advertisement is published or distributed.

546. The reference to ‘in the course of business’ means that the ban does not apply to individuals acting in a private capacity (for instance they could share an advertisement on their social media as long as there is no business interest). The ban will also not

[345] The Tobacco and Related Products Regulations 2016 (legislation.gov.uk)

apply to the government's Swap to Stop initiative or to Stop Smoking campaigns which promote vaping.

547. The advertising clauses in the Bill do not include free distribution, point of sale display or packaging and product requirements. These are captured in different parts of the Bill.

548. It also makes it an offence to enter a sponsorship agreement where the purpose or effect is to promote a tobacco product, herbal smoking product, cigarette papers, vaping product, or nicotine product in the course of business. For example, this clause will prevent sports teams from being sponsored by a vaping company.

Summary and preferred option with description of implementation plan

549. Option 2 to ban the advertising of vaping, nicotine products, herbal smoking products and cigarette papers and sponsorship agreements which promote these products is the option being progressed in the Tobacco and Vapes Bill, with commencement being by secondary legislation following the Bill receiving Royal Assent. The secondary legislation will set out the exact timings of when the changes will come into force, however we will ensure there is sufficient time for businesses and retailers to transition.

550. This will achieve the aim of preventing advertisements and sponsorship agreements which promote vaping, nicotine products, herbal smoking products and cigarette papers from being visible to children and non-smokers. By doing this, the appeal of these products and therefore the usage of the products is likely to reduce.

551. These restrictions will be enforced in the same way as tobacco advertising and sponsorship laws with the responsible enforcement authority being Local Authority Trading Standards in England, Scotland and Wales and district councils in Northern Ireland. The Bill also includes the power for the relevant national authority to undertake the investigation and enforcement, rather than the local enforcement authority, in relation to cases of a particular description or in a particular case, and the power to undertake the conduct of proceedings.

552. The Advertising Standards Authority also play a role in regulating advertising through producing guidance and monitoring media to ensure compliance. Ofcom enforce advertising rules for broadcast media, including TV and radio, and have the power to take legal action against those who do not comply.

Monetised and non-monetised costs and benefits of each option (including administrative burden)

553. Where possible, the costs and benefits of policy options have been monetised. However, data for vaping, nicotine and herbal smoking products, and cigarette papers remains scarce and therefore assumptions have been taken, or monetised impacts have been outlined.

554. If monetised, estimates will be displayed in real 2024 prices and discounted in line HMT's Green Book. Monetised impacts will be measured over a ten-year appraisal policy.

555. In the absence of evidence and intelligence on the supply chain of vapes and nicotine products, where we have estimated the impact of the policy on business, we have assumed a simplified supply chain route of UK producer (manufacturers and importers), to UK wholesalers, to UK retailer. We have taken the definition of producers in line with MHRA's notification data, as described in paragraph 602603. In practice this route may not be taken, and other parties may be involved.

556. This adds uncertainty to our estimates on the cost of business. However, for producers this could be an overestimate as we're assume all impacts on vapes sales will be felt by UK firms, when in reality some of this will be impacting manufacturers outside of the UK, who are not in scope of this impact assessment. For example, from MHRA intelligence and their notification data, it is estimated that China (47%) and the UK (34%) make up c.81% of the nicotine vapes and re-fill container producers registered with MHRA. Additionally, we may not be accounting for the impacts on other potential stages in the supply chain. We may also be capturing producers who do not have a role in advertising, such as those only importing finished goods, compared to those importing but may be more involved in advertising if they are launching a brand for example.

Option 1: Do nothing

557. There are no additional costs or benefits from implementing Option 1 as existing restrictions would remain in place.

558. As existing regulations have been in place since 2016, we consider it reasonable to assume their impact would be reflected in current trends in the market. Additionally, we do not have historic evidence on the growth of advertising or sponsorship for the products in scope, and therefore we are unable to predict how activities may change in the future. Therefore, we do not expect any additional costs or benefits to business over the appraisal period as a result of advertising or sponsorship.

559. For specific products in scope, vapes, we can estimate the counterfactual sales and profit loss to business over the appraisal period using consumption projections as explained in paragraphs 415 to 436. More detail on this methodology can be found under Option 2 below, as we have used Option 1 as our counterfactual when considering costs and benefits of Option 2. Under this growth in revenue in the counterfactual, we have assumed this has come from increasing demand, rather than a change in supply. An increasing demand in the counterfactual could therefore be associated with increasing negative impacts of vaping including potential health and environmental impacts.

560. Therefore, under the counterfactual there could be increasing societal costs from the health and environmental impacts of vaping, however we do not believe these would be additional costs as a result of implementing Option 1 as the legislation is already in place. But it could be a seen as a risk of not implementing Option 2.

561. These impacts have been discussed in more detail under Option 2 below.

Option 2: Complete ban on advertising and sponsorship

562. The costs and benefits of this option were identified through production of a logic model. It enabled clear outputs and outcomes to be identified. The logic model can be seen in Annex **.**

563. We have not included costs and benefits of replacing TAPA for tobacco products with a new joint law as there would not be any additional new costs or benefits to society, as restrictions will remain the same for tobacco products.

Table 39: Summary of costs and benefits of Option2: Complete ban on advertising and sponsorship, 2024 price base, 2024 present value

Economic summary, 2024 prices, discounted, £m	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**Total**
Costs											
Reduced profits to retailers, wholesalers, and manufacturers from reduced consumption of vapes	474	526	576	623	665	702	731	751	762	763	6,571
Familiarisation costs for retailers and advertising companies of all products in scope and producers for nicotine vapes and e-liquids	1	-	-	-	-	-	-	-	-	-	1
Enforcement costs to Trading Standards and Ofcom and for all products in scope	0	-	-	-	-	-	-	-	-	-	0
Enforcement costs for ASA for all products in scope	0	-	-	-	-	-	-	-	-	-	0
Total cost	475	526	576	623	665	702	731	751	762	763	6,572
Tax transfer											
Reduced VAT from reduced retail consumption	134	149	163	176	188	199	207	213	216	216	1,861
Benefits											
Savings to business from reduced advertising costs of vapes	35	34	33	31	30	29	28	27	27	26	300
Savings to government from reduced fires from vapes	1	2	2	2	2	2	2	2	2	2	20
Total benefit	**36**	**35**	**34**	**33**	**32**	**32**	**31**	**30**	**29**	**28**	320

Net benefits	**-439**	**-490**	**-541**	**-589**	**-633**	**-670**	**-700**	**-721**	**-733**	**-735**	-6,252

Monetised costs

564. The monetised costs of Option 2 include:

- Reduced profits to retailers, wholesalers, and producers from reduced consumption of vapes
- Familiarisation costs for retailers and advertising companies of all products in scope, and producers (manufacturers + importers) for nicotine vapes and e-liquids
- Enforcement costs to Trading Standards, Ofcom, and ASA for all products in scope
- Economic transfer of VAT

565. These have been outlined in more detail below.

Reduced profits to retailers, wholesalers, and producers from reduced consumption of vapes

566. As a result of Option 2 we expect sales of vapes to reduce, and consequently profits to fall for each stage of vape supply chain (retailers, wholesalers, and producers). As stated in paragraph 555, we have assumed the supply chain to be retailers, wholesalers, and producers.

567. To estimate the cost to business, we have estimated it in the following way:

A. Estimate the counterfactual sales and business profits as in paragraphs 415 to 436. Within this we have estimated the sales cost and profit margins at each stage of the supply chain.

B. Identify the percentage of reduced sales expected from a comprehensive ban on advertising.

C. Apply the percentage sales reduction to the counterfactual scenario.

D. Multiply reduction in sales by sales costs and profit margins of businesses.

A. Counterfactual sales and business profits

568. As outlined in paragraphs 417 to 428, in the counterfactual we project the number of disposable vape sales to be 11.7bn over the appraisal period. This number of sales is therefore not equivalent to total vape sales expected in the market. However, from inflating the estimated profits to account for non-disposable vapes being 50% of the market[346] we are able to estimate profit to businesses of all vapes to be £56bn in total over the appraisal period (£43bn for retailers, £6bn for wholesalers, and £7bn for producers).

[346] Eunomia. 2023. Analysis of the market for vapes: exploring the environmental impacts of single-use vapes.

B. Identify the percentage of reduced sales expected from a comprehensive ban on advertising

569. Following a similar methodology to that used in the Tobacco Products Directive (TPD) 2016 Impact Assessment[347], we then apply a percentage reduction that an advertising ban could have to total industry revenue.

570. Upon a review of the literature, we could not source any estimates examining the reduction in consumption because of a ban on vape advertising. In the absence of this, we have used analysis conducted by the National Cancer Institute and the World Health Organisation (WHO) as a proxy, who estimate advertising bans reduce consumption of tobacco by 11.7%.

571. The National Cancer Institute and the WHO (2016) examined the evidence base surrounding the economics of tobacco control, including the impact of tobacco industry marketing communications on tobacco use[348]. They extended and updated analysis by Belcher (2008)[349] (more detail in paragraph 573 below) and used a sample of 66 countries (31 high income countries (HIC) and 35 low or middle income countries (LMIC)). They used consumption data from 1990 to 2013 from an independent market research firm, ERC Group[350], cigarette price data from the Economist Intelligence Unit[351], and Per Capita GDP from the Word Bank[352] as a proxy for income. Using these sources, they examined the impact of weak, limited, or full advertising bans on tobacco consumption using a methodology taken in a previous study by Belcher. This is defined based on the number of media types banned, with five or more being a comprehensive ban. Their regression results revealed that comprehensive bans on tobacco advertising had significant negative effects on consumption, but limited bans had no statistically significant effect. They estimate advertising bans to reduce tobacco consumption by 28.3% in LMICs and 11.7% across all 66 countries (HICs and LMICs).

572. It should be noted that the 11.7% reduction used in our analysis could be an overestimate as it is based on multiple countries including LMIC, which the study reports are more influenced by an advertising ban.

573. Other econometric studies on tobacco advertising bans referenced in the NCI and WHO report slightly lower estimates. However, the NCI and WHO analysis is the most recent analysis and builds upon previous research. The main study that this research aimed to extend and update is based on Blecher (2008)[353]. Blecher estimated that comprehensive bans have a significant negative impact on consumption by 6.7% in per capita consumption, with limited bans having no significant impact. However, when analysing developing countries only these estimates were 23.5% and 13.6% respectively.

574. The MHRA Tobacco Products Directive impact assessment[347] applied a 20% reduction in the consumption as a result of a ban on vape advertising (this was for a partial ban

[347] MHRA. 2016. Tobacco Products Directive Impact Assessment.
[348] U.S. National Cancer Institute and World Health Organization. 2016. The Economics of Tobacco and Tobacco Control. National Cancer Institute Tobacco Control Monograph 21. NIH Publication No. 16-CA-8029A.
[349] Blecher, E. 2008. The impact of tobacco advertising bans on consumption in developing countries.
[350] ERC Group. World cigarettes. 1990-2013
[351] Economist Intelligence Unit. Worldwide cost of living survey. 1990-2013
[352] World Bank. World Bank Group - International Development, Poverty, & Sustainability
[353] Blecher, E. 2008. The impact of tobacco advertising bans on consumption in developing countries.

applied under Tobacco and Related Products Regulation (TRPR) 2016). However, the use of a reduction of 20% is reported to be decided hypothetically: *"we consider a possible scenario where the advertising restrictions reduce the value of the e-cigarette market by 20% compared to the Euro-monitor forecasts. We can be fairly certain that the actual impact will be much less than this".* The 20% assumption was used in this impact assessment to illustrate that there would be limited impact on the vape industry as the benefits to industry will be similar to the costs, and that there would only be a cost to advertising companies. However, they were under the assumption that market growth was expected to level off by 2019, which we now know was not the case from looking at prevalence data[354].

575. Whilst literature on the impact of a vape ban on consumption is not provided, a 2024 meta-analysis (Yang et al.) [355] concludes that exposure to advertising increases the likelihood of vaping. Yang et al. included 43 papers in their meta-analysis and aimed to reconcile the impact of vape advertising on vaping activity. Their effect size is measured through hedges g which tells you the difference between two groups. It is calculated by taking the difference in means between two groups and dividing by the standard deviation. Their post hoc univariate analyses concluded that vape campaigns exert stronger effects on consumers vaping tendency among non-smokers (g=.573) than among smokers (g=.094). Additionally, they found the relationship between vape campaigns and vaping tendency are stronger for adolescents (g=.494) than adults (g=.071).

576. However, uncertainties remain due to lack of intelligence and analysis of the impact current partial bans on advertising applied under TRPR. The limited evidence on this report mixed effects.

577. Evidence[356] suggests that partial bans are not effective, and therefore may not be having an effect on consumption.

578. The Post Implementation Review (PIR)[357] did not report any additional information on impact on consumption and industry costs because of the partial advertising ban under TRPR. The PIR did qualitatively report that respondents had commented that advertising restrictions of vapes were discouraging use amongst young people.

579. Analysis from Cancer Research[358] suggests that TRPR has prevented further increases in youth noticing vape marketing in prohibited channels.

580. Due to the limited quantitative evidence on this we have assumed the current restrictions have had no impact on consumption in our baseline. However, this could mean that the 11.7% reduction in consumption applied may be an overestimate, if current restrictions make up a part of this estimated percentage reduction.

[354] NHS Digital. 2022. Smoking, Drinking and Drug Use among Young People in England, 2021.
[355] Yang, Z and others 2023. How do vape campaigns affect consumers' vaping tendency? A meta-analytic investigation
[356] U.S. National Cancer Institute and World Health Organization. 2016. The Economics of Tobacco and Tobacco Control. National Cancer Institute Tobacco Control Monograph 21. NIH Publication No. 16-CA-8029A.
[357]OHID. 2022. The Tobacco and Related Products Regulations 2016: post-implementation review - GOV.UK (www.gov.uk)
[358]Cancer Research UK. 2021. E-cigarette marketing in the UK (cancerresearchuk.org)

581. Therefore, we consider the 11.7% reduction a reasonable assumption to use on our analysis as a proxy for a reduction in vape consumption from an advertising ban. This is because of supporting evidence on the link between vape advertising and consumption, and the other estimates that we identified indicates this would not underestimate the impact. We have however tested this percentage reduction in the Sensitivity Analysis.

C. Apply the percentage sales reduction to the counterfactual scenario

582. Taking the projected number of disposable vapes in step (A) and applying an assumed 11.7% reduction in sales in step (B), as a result of a comprehensive ban on vape advertising we can estimate the difference in disposable sales as a result of Option 2.

583. It should be noted that because we only have projections for disposable vapes, rather than all vapes, we only apply the 11.7% assumption to those projected sales. However, as in the counterfactual, once we translate disposable vape sales to profits, we uplift this figure to account for non-disposable vapes representing 50% of the market (outlined in step D). This will mean we are assuming disposable and non-disposable vapes have the same unit costs, profit margins, and are consumed in equal numbers. At this time, we do not have intelligence on the unit costs or profit margins of non-disposable vapes to be able to comment on whether an 11.7% reduction in consumption as a result of an advertising ban would lead to a different impact on businesses profit than disposable vapes.

584. It is not possible from this analysis to estimate who the reduced sales would come from, in terms of adults or children. Based on the evidence that advertising is noticed more by young people[316,320], and vape advertising has been found to be appealing for children[321,322,323], we believe it is sensible to assume some of this reduction in consumption would come from people under 18 years, however we are not able to quantitatively assess this.

585. If some of these reduced sales are reduced sales of nicotine vapes to under 18s, this would mean that the costs estimated would include reduced profits from illegal sales. Whilst the HMT Green Book advises to not include lost profits from current illegal activity, we are not able to establish who is reducing their sales, and whether these are sales of a nicotine or non-nicotine vape.

586. Additionally, we are not able to estimate whether this reduction in sales would translate to reduced prevalence in terms of absolute numbers of vapers.

587. Applying this 11.7% annually across the ten-year appraisal period would mean we are assuming the impact of advertising on consumption behaviour is immediate and does not have a staggered impact affect. Applying an immediate effect will ensure we do not underestimate the potential cost to industry over the appraisal period, however in practice it could take time to reach maximum impact.

Table 40: Reduction in number of disposable vape sales under Option 2: Complete ban on advertising and sponsorship, millions

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	Total

Reduction in disposable vape sales	83	95	108	121	134	146	157	167	176	182	1,369

D. Multiply reduction in sales by sales costs and profit margins of businesses.

588. Multiplying the estimated reduction in vape sales in step (C) by sales prices, profits margins of businesses, and uplifting to account for 50% of the market being non-disposable vapes, we can estimate the reduction in profits to business.

Table 41: Profit loss under Option 2: Complete ban on advertising and sponsorship, 2024 base year, 2024 present value, £m

Profits	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**Total**
Retailers	363	402	440	476	509	537	559	574	583	583	5,026
Wholesalers	53	59	64	70	74	79	82	84	85	85	736
Producers	58	65	71	77	82	86	90	93	94	94	809
Total	474	526	576	623	665	702	731	751	762	763	6,571

589. As stated in paragraph 555 this analysis is only indicative because we are assuming that the supply chain of all reduced vape sales has followed a pathway from UK producers, to UK wholesalers, to UK retailers. In practice, this may not be the supply chain pathway and vapes may not all follow the same pathway. For example, it is unlikely that the reduced sales would only impact vapes manufactured in the UK, and any potential profit losses to foreign manufacturers would be out of scope of this impact assessment according to Green Book guidance. It could therefore be the case that the calculated cost to the sector as a result of Option 2 is an overestimate.

590. Additionally, this could be an overestimate by including reduced profits of current illegal sales of nicotine vapes to Under 18s. Given we are not able to establish who the reduced sales could come from, we are assuming this is a maximum cost to businesses, which may be lower if we could exclude the existence of illegal sales from our counterfactual.

591. It is likely that any loss in profits will at least in part be offset by increased profits on goods and services purchased in place of vapes.

Cost to business from reduced profits - sense check

592. Logically the monetised gains that businesses receive from investing in advertising would be larger than their spend on advertising. Cancer research[323] estimated the spend on advertising in the sector to be £32m in 2019. We can therefore logically conclude that, at best, there would be no net cost to business if lost profits equal reduced spend on advertising (£32m). However, in practice we hypothesise this would be a lot larger based on the expected return from advertising is likely to be greater than the spend.

Familiarisation costs

593. Retailers, producers, and advertising companies would need to become familiar with the new restrictions as we assume they are the parts of the supply chain involved in advertising.

594. We have assumed that one member of staff per business would need familiarising with guidance on new advertising policy. We recognise that on the one hand this could be an overestimate given not all advertising companies in the UK will be involved with, or specialise in, vape advertising so this could be an overestimate of the number of businesses needing to be familiarised with this policy. Additionally, not all producers included in our analysis will be involved in advertising, for example importers of finished products, however we cannot distinguish this in our evidence, so all have been included to minimise risk of underestimation.

595. On the other hand, for the businesses that do need to familiarise this could be an underestimate as more than one person in these businesses could be required to read the guidance or the guidance could be cascaded to other members of staff. However given this is a blanket ban on advertising, we do not think that this is complex guidance to be familiarised with and communicate to other colleagues.

596. We have assumed that wholesalers will not have familiarisation costs as we do not believe they would be involved in advertisement of products.

597. We have assumed that there would only be a familiarisation cost in the first year of the appraisal period.

Familiarisation for retailers of vaping products

598. We have assumed that all convenience stores, supermarkets (excluding discounters who generally don't sell vapes), and specialist vape shops would need to spend time familiarising themselves with the changes in advertising policy. We recognise that this list may not capture the full number of retail businesses that would require familiarisation, for example, online businesses or other types of retail store, however we do not have data to identify the number of businesses this would be.

599. Data we have identified suggests that in the UK there are:

- 50,387 convenience stores[359], of which 71% are independent retailers.
- 5,944 Supermarkets[360, 361], excluding discounters that generally don't sell vapes.
- 3,573 specialist vape shops[362]

600. To estimate the time it may take for retailers to familiarise themselves with this policy we have assumed the length of any guidance to be approximately 8 pages in length. This is based on current advertising guidance for e-cigarettes[363]. Reviewing the current guidance there is approximately 33 lines per page with 12 words per line, equalling an

[359] Association of Convenience Stores. 2024. The Local Shop Report 2024.
[360] IGD. 2019. UK Grocery Store Numbers 2018.
[361] Data from 2018 as most recent we have been able to obtain.
[362] Independent. 2024. Number of independent vape shops across UK jumps again.
[363] ASA. 2017. Electronic cigarette advertising prohibitions.

estimate of 2,880 words to read. Assuming guidance is read at 75 words per minute[364], the time taken to read the guidance calculates to be 0.6 hours.

601. We assume that one member of staff at each retailer will need familiarising. The number of retailers, multiplied by the number of hours required, and the median wage of a shopkeepers and sales supervisors(£12.13 per hour)[365] and uplifted with non-wage costs, would provide a total cost of £0.56m for retailers to familiarise themselves with a new policy. In 2024 present value this is equal to a cost of £0.51m.

Familiarisation for producers of nicotine vaping products and e-liquids

602. Based on MHRA intelligence and their notification data, the number of UK producers of nicotine products is approximately 394 in the UK. MHRA intelligence estimates for UK businesses this is estimated to be made of 323 manufacturers, and 71 importers.

Table 42: Number of UK producers of nicotine containing vaping products

UK producers of nicotine containing vaping products	Manufacturer	Importer	Total
Number of producers	323	71	394

603. Submitters to the MHRA notification data define themselves as manufacturer or importer. Under TRPR, they are defined as producers. Under this definition producers are:

- Manufacturers of the product;
- Puts a name, trade-mark, or other distinguishing mark on it by which the person is held out to be its manufacturer or originators; or
- Imports it into the UK.

604. For the purposes of advertising, we believe 394 could be an overestimate this could include businesses that are not involved in the advertising process. Because we cannot distinguish how many companies of the 394 this applies to, we have taken the maximum amount to avoid the risk of underestimating the impact on business.

605. Assuming it takes producers the same amount of time to familiarise themselves with the guidance as retailers, we estimate it will take one members of staff at each producer company 0.6 hours.

606. Multiplying this by the average wage of a production managers/directors in manufacturing (£24.95 an hour)[365] and uplifted for non-wage costs, would equate to a total cost of £0.01m. In 2024 present value this is equal to a cost of £0.01m.

Familiarisation for advertising companies

[364] EFTEC. 2013. “Evaluating the cost savings to business from revised EA guidance – method paper”. Accessed via: Department for Business, Energy, & Industrial Strategy. 2017. Business Impact Target: appraisal of guidance - assessments for regulator-issued guidance (publishing.service.gov.uk)
[365] ONS. 2023. Earnings and hours worked, occupation by four-digit SOC: ASHE Table 14 - Office for National Statistics (ons.gov.uk)

607. The estimated number of advertising companies in the UK is 17,553, with the total number of employees in advertising agencies being 118,000[366]. We assume that one person in each advertising agency will need to familiarise themselves with the new legislation and will cascade to others.

608. Assuming it takes advertising agency staff the same amount of time to familiarise themselves with the guidance as retailers and manufacturers, we estimate it will take members of staff 0.6 hours.

609. Multiplying this by the average wage of a production managers/directors in manufacturing (£24.95 an hour)[365] and uplifted for non-wage costs, would equate to a total cost of £0.34m. This wage has been used as a proxy for advertising. In 2024 present value this is equal to a cost of £0.30m.

Enforcement costs

610. There would be three main regulatory bodies for advertising and sponsorship restrictions on the products in scope: (1) Trading Standards for non-broadcast media; (2) Ofcom for broadcast media; and (3) the Advertising Standard Authority (ASA) for first line regulatory check on the industry.

611. The main costs to enforcement bodies would be familiarisation costs. We have estimated this as an additional cost, assuming that familiarisation is a form of training and therefore would take time away from daily job roles and responsibilities. We have assumed that any ongoing enforcement activity, as the result of new legislation, will be incorporated into employees existing roles, and therefore will not be an additional cost.

612. Whilst we have assumed the above, from intelligence received from ASA, we are aware that their work is increasingly proactive. Therefore, it may be the case that additional changes may require some additional proactive work, potentially adding a burden to enforcement agencies and their time. However, at this time, we are not able to quantify this potential cost.

Enforcement costs for Trading Standards

613. There are 197 Trading Standards (TS) services[367], and an average TS service have an average of 9.4 FTE professionally qualified staff per service[368].

614. It is assumed that every Trading Standards Officer would need familiarising with the policy. For every Trading Standards worker we assume will we also assume a familiarisation time to be 0.6 hours and assume a salary of £34,500 (a mid-point in the published salary range)[369]. Dividing the annual salary by 52 weeks, and again by 36.4 hours[370] we are able to estimate the average hourly wage cost. Adjusting for non-wage

[366] IBIS World. 2024. Advertising Agencies in the UK- Market Size, Industry Analysis, Trends and Forecasts (2024-2029). (Data access from publicly available data).
[367] The Chartered Trading Standards Institute report there to be 220 local authority weights and measures authorities in the UK, however they outline that a number of authorities have arrangements to share services and therefore the total number of services is estimated to be 197.
[368] Chartered Trading Standards Institute. 2019. Workforce Survey 2018-2019.
[369] National Careers Service. Trading Standards Officer. Accessed August 2024.
[370] ONS. 2024. Average actual weekly hours of work for full time-workers (seasonally adjusted).

costs, and multiplying together, provides and estimated total cost of £25,652 in the first year of the appraisal period. In 2024 present value this is equal to a cost of £23,137.

Enforcement costs for Ofcom

615. An Ofcom freedom of information request (2024)[371] revealed that of Ofcom's 1,353 members of staff, 215 worked in the broadcasting and online content group. It is assumed that each member of staff in this group would require familiarising with the new restrictions under Option 2.

616. Taking the same assumptions used for Trading Standards familiarisation, it is assumed that each member of staff would require 0.6 hours to familiarise themselves with the guidance. We have assumed that the annual salary of an Ofcom member of staff to be £44,450. This is sourced from a Freedom of Information request (2023)[372], where we have taken the maximum salary for an associate as a proxy for all 215 staff. Dividing the annual salary by 52 weeks, and again by 36.4 hours we are able to estimate the average hourly wage cost.

617. Multiplying the above salary (and adjusting for non-wage costs), by 0.6 hours we estimate a total cost of £3,896 in the first year of the appraisal period. In 2024 present value this is equal to a cost of £3,514.

Enforcement costs for Advertising Standard Authority (ASA)

618. ASA employee approximately 110 members of staff[373], with online recruitment websites suggesting a salary range of between £20,968 to £76,673. Taking the mid-point of this this estimate, it is assumed workers at ASA earn an annual salary of £48,821.

619. Taking the same assumptions used for Trading Standards and Ofcom familiarisation, it is assumed that each member of staff would require 0.6 hours to familiarise themselves with the guidance.

620. Multiplying the above salary (and adjusting for oncosts), by 0.6 hours we estimate a total cost of £2,156 in the first year of the appraisal period. In 2024 present value this is equal to a cost of £1,945.

Economic transfer: VAT transfer

621. As discussed above, as a result of this policy option it is estimated that there will be a reduction in consumption and therefore profits for retailers over the ten-year appraisal period. From this we can estimate a VAT value of approximately £2,455m. Discounting to be in 2024 present value provides a transfer of £1,861m.

622. However, this reduction in tax revenue represents a transfer from the government collecting the revenue to the people in society previously paying the tax. The people that no longer vape or reduce the amount they vape because of this policy benefit from an increase in the amount they can spend on other goods and services, and the

[371] Ofcom. 2024. Freedom of Information Request: Right to know request. Reference 01775065.
[372] Ofcom. 2024. Freedom of Information Request: Right to know request. Reference 01552065.
[373] ASA. ASA Council Member Candidate Pack. Accessed August 2024.

government loses an equal amount that they can spend. Therefore, this reduction in tax revenue does not make society as a whole better or worse off.

623. It should also be noted that reduced profit may indirectly lead to a reduced direct tax liability for businesses. Given this is an indirect impact we have not monetised this, however it should be noted that this could offset the impact on businesses to a small extent.

624. On this basis, and in line with HMTs Green Book, the tax revenue has not been included in the NPSV. It also has no impact on businesses, so has not been included in the EANDCB.

Non-monetised costs

625. Due to the limited evidence based for vapes, nicotine products herbal smoking products and cigarette papers, it was not possible to quantify all the expected societal costs. The non-monetised costs include:

- Transition costs from shifting in how businesses promote their products
- Reduced profits to business from reduced sales of nicotine products, herbal smoking products, and cigarette papers
- Reduced profits to business from reduced sponsorship for all products in scope
- Reduced profits to business from reduced use of advertising companies
- Familiarisation costs for producers of non-nicotine vapes, herbal smoking products and cigarette papers
- Disposal and environmental costs of removing physical advertising and sponsorship
- Health impacts of fewer people using vapes and nicotine products to quit smoking

626. Details of these expected costs are outlined below, and evidence provided where possible.

Transition costs to shifting how businesses promote their products

627. Banning advertising or sponsorship of vapes to increase sales and/or market share could create costs to retailers and producers of all products in scope, as well as advertising firms that retailers or producers may use to outsource their advertising activities.

628. There are potentially transition costs to retailers and producers of products to re-think how they will promote their products by removing advertising and sponsorship from their toolkit.

629. There are potentially transition costs to advertising companies to re-think how they may want to shift to advertising different industries. We imagine this cost would be larger for advertising firms if they specialise in the products in scope.

630. Additionally, transitioning to a business model where advertising and sponsorship cannot be used, could cause an indirect impact of increased barriers to entry of business to the industry. This may benefit businesses that have been in the market for many years and previously been able to use advertising and sponsorship to grow their brand.

631. However, we have not identified any evidence to allow us to quantify these costs to businesses.

Reduced profits to business from reduced sales of nicotine products, herbal smoking products, and cigarette papers

632. Following the same methodology as in the *Reduced profits to business from reduced vape consumption* section above, a reduction in advertising of nicotine products, herbal smoking products, and cigarette papers could result in reduced consumption, and consequently reduced profits for retailers, wholesalers, and producers. It is not possible to estimate who would reduce their consumption of these products as a result of advertising.

633. Sun et al. (2024)[374] have researched the marketing trends of oral nicotine pouches across online media, sports sponsorships, and out-of-home advertising. They observed the is an “extensive use of visually appeals content, influencer partnerships, and event sponsorships aimed at potentially young and naive audiences”.

634. Tattan-Birch et al. (2022)[375] survey data from adults in Great Britain reveals that only 0.26% of adults in Great Britain use nicotine pouches, but the prevalence did increase between 2020 and 2021. Results also shows prevalence was higher amongst current smokers (0.87%), recent former smokers (0.97%), and former smokers (0.24%), compared with never smokers (0.06%). Likewise, prevalence was also higher for vapes (1.64%) and nicotine replacement therapy (2.02%) users was higher than non-users (0.15% and 0.21% respectively).

635. The estimated low prevalence of these products suggests that the cost to business would not be substantial. Additionally, it is likely that any loss in profits will at least in part be offset by increased profits on goods and services purchased in place of vapes.

Reduced profits to business from reduced sponsorship of all products in scope

636. If producers can no longer engage in sponsorship deals, and as a result the consumption of vapes, nicotine products, herbal smoking products and cigarette papers declines, this would result in reduced profits for these businesses, and an indirect impact of reduced income for the sponsored company.

[374] Sun and others. 2024. Sports, Gigs, and TikToks: Multi-channel Advertising of Oral Nicotine Pouches.
[375] Tattan-Birch and others. 2022. Tobacco-free Nicotine Pouch Use in Great Britain: A Representative Population Survey 2020 – 2021.

637. Whilst we cannot estimate the number of reduced consumption that could specifically come from people under 18 years old, evidence suggests that we could assume some of the impact will have come from reduced sales by this age group from concerns that have been raised in the press[376], and the Youth vaping call for evidence analysis[328].

638. We also know that children and young people could be being exposed to vape sponsorship at sports events. For example, a small number of football teams have been reported to have sponsorship deals with vape companies[376] .

639. Whilst this could impact businesses involved in sponsorship partnerships i.e. those being sponsored, from desk research we do not expect the number of sponsorships to be large and believe it is likely that any lost funding can be substituted through other sponsorship partnerships.

640. Annex C outlines this impact pathway in a logic model.

Reduced profits to business from reduced use of advertising companies

641. Advertising companies can be used as a third-party to develop advertising for a manufacturer or re-brander. Due to an absence in data, the scale and use of advertising companies by producers of vapes, nicotine products, herbal smoking products and cigarette papers is evident.

642. If each of the 17,553[377] adverting agencies produced advertising for vape, nicotine product, herbal smoking products and cigarette paper producers, they could experience reduced profits because of a ban on advertising as their services would no longer be needed from this sector. If we assume advertising businesses aren't specialised by industry, we could assume that following familiarisation of the new policy, they may not face additional profit loss as their services could be applied to other industries. However, we recognise the impact would be larger if advertising agencies specialise in the advertisement of the products in scope.

Familiarisation costs for producers of non-nicotine vapes, herbal smoking products, and cigarette papers

643. Producers of non-nicotine vapes are not required to notify MHRA, as producers of nicotine vapes are. Because of this, there is not an estimate of how many manufacturers may be present in the UK. It could be the case that there are manufacturers that produce non-nicotine vapes as well as nicotine vapes and/or nicotine products. In this case, their familiarisation cost would be captured in the monetised section above.

Disposal and environmental costs of removing physical advertising and sponsorship

644. Businesses will incur a cost of removing non-digital physical advertisements that already in use, this would likely include static and transport outdoor advertisements. In 2019, outdoor advertisements accounted for approximately 90% of total industry advertising spend (approximately £32m) and accounted for approximately 51% of the

[376] BBC Newsround. 2024. Prime minister questioned over vapes advertising on sports kits.
[377] IBIS World. 2024. Advertising Agencies in the UK- Market Size, Industry Analysis, Trends and Forecasts (2024-2029).

vape adverts in CRUK's analysis were classified as outdoor ads[378]. Some of these however will be digital advertisements so may not require physical removal unless it is only used for vape advertising.

645. These costs could include wages and time of staff to locate and remove the advertisement, potential fuel costs to transport the advertisements, and disposal costs. The cost of disposal can vary based on method chosen. If products are disposed of at landfill this would be an economic transfer as the cost is landfill tax per tonne of disposal[379].

Health impacts of fewer people using vapes and nicotine products to quit smoking

646. As explained above, the latest evidence has found that vaping poses a small fraction of the risks of smoking[380] and vapes can be an effective tool in supporting smoking cessation, especially when combined with expert support[381, 382].

647. This impact assessment has demonstrated that this policy is expected to reduce the number of vapes that are consumed. Due to data limitations, we have not been able to estimate who reduces their consumption and whether this links to uptake rates, however the reduced consumption could include people that use vapes as a smoking cessation aid.

648. According to ONS data on adult vaping prevalence in Great Britain[383], 31.6% of adults that currently vape are also current smokers, and 18.7% are ex-smokers. Data from ASH[384] on adult vaping in Great Britain shows that among current smokers 17% say the main reason they vape is to cut down on smoking, and among ex-smokers 28% say it is to help them quit smoking entirely.

649. Amongst children aged 11 to 17 in Great Britain, ASH[385] report that current use of vapes is higher amongst children who smoke (54%), than former smokers (26%), and never smokers (1.8%). They also report that in 2024, 2.8% of children are dual users of cigarettes and vapes, and more children currently vape (7.2%), than smoke (5.1%).

650. We do not envisage this to be a problem as advertising for smoking cessation services do not promote specific vaping products and are not advertisements in the course of business, so they will not be impacted by the restrictions.

651. Banning advertising and sponsorship of vapes, nicotine products, herbal products, and cigarette papers could indirectly affect this group if reduced consumption from advertising in the sector impacts supply of vapes or decreases the social acceptance of products so using them as a smoking cessation tool is less appealing.

[378] Cancer Research UK. 2021. E-cigarette marketing in the UK (cancerresearchuk.org)
[379] Business Waste. A guide to the UK landfill tax | Landfill tax rates (businesswaste.co.uk)
[380] OHID. 2022. Nicotine vaping in England: 2022 evidence update.
[381] Boyce and others. 2022. Electronic cigarettes for smoking cessation.
[382] Lindson and others. 2023. Pharmacological and electronic cigarette interventions for smoking cessation in adults: component network meta-analyses.
[383] ONS. 2024. Adult smoking habits in the UK: 2023.
[384] Action on Smoking and Health. 2024. Use of vapes (e-cigarettes) among adults in Great Britain.
[385] ASH. 2024. Use-of-vapes-among-young-people-in-Great-Britain-2024.pdf (ash.org.uk)

652. Whilst smoking prevalence in the UK has been falling for many years[386], the risk of this policy is that the potential health gains from reduced vaping consumption, could be offset by a slowing of smoking cessation at a societal level.

653. These potential offsets in benefits have been illustrated in the logic model in Annex .

Monetised benefits

654. Where possible we have monetised benefits to society as a result of Option 2. The monetised benefits identified are:

- Savings to business from reduced advertising costs of vapes
- Savings to government from reduced fires from vapes

Savings to business from reduced advertising costs of vapes

655. CRUK[387] estimate the annual cost of advertising for the sector in 2019 was £32m. Under this policy proposal, no advertising would be permitted so this previous cost would be saved by businesses, and partially offsetting their lost profits from reduced vape sales outlined in the monetised costs section.

656. Over the ten-year appraisal period we have kept these costs constant, adjusting only for inflation and discounting. We have decided not to grow these costs in line with consumption growth as we only have one year of data so it is difficult to estimate how this may fluctuate from year to year.

657. Who these savings fall to would depend on their involvement in advertising, and therefore how much they may spend. We assume most of the advertising cost would fall to manufacturers and some to retailers. However, it is difficult to estimate how advertising spend in the sector is split between different parts of the supply chain, and individual businesses within them.

Table 43: Savings to businesses from reduced spend on advertising under Option 2: Complete ban on advertising and sponsorship, 2024 price base, 2024 present value, £m

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	Total
Saving to businesses from reduced advertising	35	34	33	31	30	29	28	27	27	26	300

658. If the cost of advertising is incorporated into the unit costs of vapes, it could be the case that the unit cost of vape production could fall. In practice, we do not know where in the supply chain this reduction in unit cost may fall, however we assume most of the gain would fall to manufacturers. If reduced manufacture costs are passed on through the supply chain, it could eventually result in a lower retail price for consumers. The price

[386] ONS. 2024. Adult smoking habits in the UK: 2023.
[387] CRUK. 2010. E-cigarette marketing in the UK.

elasticity of demand for vapes is estimated to be -1.2[388], meaning a reduction in the price of vapes would lead to an increase in consumption. To conclude, if reduced unit costs are passed on to consumers, there could be an additional offset in the profit loss to business under Option 2. In practice, we do not know whether reduced costs would be passed on to consumers, and therefore what influence this will have on consumption. If businesses are profit maximising, these reduced costs may be taken by businesses as increased profit, rather than passing on reduced costs.

Savings to government from reduced fires from vapes

659. Vapes use lithium-ion batteries. According to the National Fire Protection Association (NFPA)[389], the likelihood of lithium-ion batteries overheating, catching on fire, or causing explosions increases when damaged, improperly used, charged, or stored. If disposed of in household waste or recycling it can cause fires in transport, landfill, or recyclers.

660. One report estimated that in 2021 there were 201 fires in landfill sites per year[390]. More recent survey results[391] reveal lithium batteries caused over 1,200 fires number of fires in bin lorries and on waste sites in the past year, which was a 71% increase from 700 fires in 2022. Based on this range of estimates, we use 700 as the central scenario.

661. To be in line with the sales growth we have estimated in Table 34 we have assumed the same year-on-year growth would be applied to the number of lithium-ion battery fires over the appraisal period.

662. An estimated 19% of lithium batteries paced on the UK market was accounted for by single use vapes[392]. Applying this to the number of fires described above produces the number of fires attributable to disposable vapes.

663. Assuming that because of a comprehensive ban on advertising there is an 11.7% reduction in vape consumption (as explained in paragraph 581), multiplying this by the annual number of fires a year, this equates to 506 fewer lithium-ion battery fires over the appraisal period.

664. The unit cost of a lithium-ion fire can be estimated through the Home Office estimates of the average cost of all fires in 2020, £45,900[393]. Multiplying this by the estimated annual reduction in fires, provides an annual estimate for reduced cost of vaping-related fires compared to the baseline.

Table 44: Estimated savings from reduced vape-related fires under Option 2: Complete ban on advertising and sponsorship, 2024 price base, 2024 present value

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	Total
Number of vape related fires	262	301	341	382	422	461	497	528	555	575	4,323

[388] Huang and others 2014. The impact of price and tobacco control policies on demand for electronic nicotine delivery systems. Accessed via: ASH 2023. ASH response to consultation: Youth vaping: call for evidence
[389] NFPA. Lithium-Ion Battery Safety (nfpa.org). Accessed July 2024
[390] Eunomia. 2023, Analysis of the Market for Vapes: Exploring the environmental impacts of single-use vapes.
[391] Material Focus. 2024. Over 1,200 battery fires in bin lorries and waste sites across the UK in the last year.
[392] Eunomia. 2023. Analysis of the market for vapes: exploring the environmental impacts of single-use vapes.
[393] Home Office. 2023. Economic and social cost of a fire.

Reduction in vape-related fires	31	35	40	45	49	54	58	62	65	67	506
Savings from reduced fires, £m	1	2	2	2	2	2	2	2	2	2	20

Non-monetised benefits

665. Where is has not been possible to monetise the benefits we have outlined where we logically think benefits may arise as a result of Option 2. The non-monetised benefits identified are:

- Savings to business from reduced advertising costs of nicotine products, herbal smoking products, and cigarette papers
- Savings to business from reduced sponsorship costs of vapes, nicotine products, herbal smoking products, and cigarette papers
- Potential health gains to individuals
- Environmental benefits to society from reduced litter associated with fewer vapes
- Reduced cost to recycle vapes

Savings to business from reduced advertising costs of nicotine products, herbal smoking products, and/or cigarette papers

666. Similar to the monetised benefits above for vapes, businesses who currently fund advertising of nicotine products, herbal smoking products, and/or cigarette papers will save this money following the implementation of Option 2, compared to the baseline. It is not possible to monetise these benefits as we do not have evidence on the scale of advertising of nicotine products and cost in the sector.

Savings to business from reduced sponsorship costs of vapes, nicotine products, herbal smoking products, or cigarette papers

667. Similar to the monetised benefits above for vapes, businesses who currently fund sponsorship deals will save this money following the implementation of Option 2. It is not possible to monetise these benefits as we do not have evidence for the scale of sponsorship for vapes and nicotine products.

Potential health gains for individuals

668. As described in paragraphs 466 to 473, there are health risks associated with young people vaping, mainly due to the presence of nicotine in vapes. However, vaping is estimated to be far less harmful that smoking. Additionally, herbal smoking products and other nicotine products also have health risks associated with them, but evidence is also limited.

669. This impact assessment has demonstrated that this policy is expected to reduce the number of vapes consumed. This could translate to reduced uptake of vaping, including uptake in youth vaping, however we have not been able to estimate this through quantitative analysis. If this were the case, a ban of all advertising of vapes and nicotine products, and sponsorship which promotes these products could provide health benefits through reduced uptake of vaping among young people.

670. Whilst there is limited evidence on the long-term health benefits of using these products, in theory there are potential long term health gains from uptake in youth which could translate to increased healthy life expectancy of individuals. Improved health could also translate to a direct reduction in healthcare costs to the NHS and social care services. There are also other potential economic benefits from improved health of individuals, including increased productivity of the workforce. These impact pathways are illustrated in the logic model in Annex **C.**

671. In the Government of Canada regulatory impact analysis statement for the Tobacco and Vaping Products Act it was assumed that the mortality and morbidity risks associated with vaping are 20% of the mortality and morbidity impacts of cigarettes[394]. This assumption was developed with members of an expert panel composed of five academics in tobacco control.

672. In the Standardised Packaging for tobacco products Impact Assessment[395] it was estimated the discounted number of life years saved for each young person who does not take up smoking is 1.0. Based on this estimate and the evidence from Canada, we could estimate the number of life years gained for each young person that does not take up vaping to be 0.2. HMT's The Green Book places a value of £70,000 on a QALY. In the impact assessment for mandating quit information messages inside tobacco packs[396], we explained that it remains appropriate to use the same value of a QALY for life years where QALY estimates are not readily available. Based on the evidence from Canada, for every young person not taking up vaping, the benefits could be £14,000.

673. Taking the assumption that for each young person not taking up vaping, would result in 0.2 QALYs, or £14,000, we are able to produce illustrative estimates for the number of young people the policy would need to prevent from taking up vaping for the benefits to equal the costs. As outlined in the monetised costs and benefits section above, we estimate the costs over the appraisal period to be £6,572m, benefits to be £320m, and therefore the net benefit to be -£6,252m over the ten year appraisal period. Dividing the annual absolute value of the net benefit, by the discounted health benefit from each young person not taking up vaping, equates to 497,660 people needing to be prevented from taking up vaping as a result of Option 2 over the appraisal period.

674. To put this into context, using the 2022 UK population estimates[397], and 2021 vape prevalence of 11 to 15 year old current (regular + occasional) users who vape in

[394] Government of Canada. 2021. Canada Gazette, Part 1, Volume 155, Number 25: Order Amending Schedules 2 and 3 to the Tobacco and Vaping Products Act (Flavours).
[395] The Standardised Packaging of Tobacco Products Regulations 2015 - Impact Assessment (legislation.gov.uk)
[396] OHID. 2023. Mandating quit information messages inside tobacco packs - GOV.UK (www.gov.uk)
[397] ONS. 2024. Estimates of the population for the UK, England, Wales, Scotland, and Northern Ireland - Office for National Statistics (ons.gov.uk)

England[398], and 2022 vape prevalence rates for adults aged 16+ in the Great Britian[399] (and assuming these rates are reflective of other UK nations), we estimate number of number of vapers in the UK to be around 5.8 million.

675. If we take a simplified assumption that the number of people that vape will remain the same in our counterfactual, in order to breakeven Option 2 would need to prevent an equivalent of 8.6% of people that vape aged 11 years + that currently vape in the UK. As stated earlier in the impact assessment, in several of our monetised estimates we have assumed the increase in profits of businesses over the appraisal period in the counterfactual is driven by increased demand for vapes, therefore in practice the number of QALYs needed to breakeven would likely be higher than in this simplified estimate which assumes the number of vapers remains the same over the counterfactual.

676. As stated above, this breakeven estimate is illustrative as there are multiple other non-monetised costs and benefits which would impact the potential breakeven point of this analysis. In addition, there is significant uncertainty on the health benefits of a young person not taking up vaping.

Environmental benefits from reduced litter associated with fewer people using disposable vapes

677. The rise in youth vaping in recent years has happened concurrently with the increase in the use of disposable vape products. For example, in 2024, among young people that vape in Great Britain, 54% said the most frequently used device was a disposable (single use) vape, up from 7.7% in 2021[400]. However, it should be noted that this data is from a cross sectional survey and does not demonstrate that the increase in youth vaping has been driven by the increase in the availability and use of disposable vapes.

678. Research on vape disposal by YouGov, commissioned by Material Focus[401], found that almost 5 million disposable vapes are either littered or thrown away in general waste every week. This has quadrupled in the last year and is equivalent to the lithium batteries that could power 5,000 electric vehicles being thrown away per year. The report found 52% of 18 to 34 year olds who bought a vape in the last year bought a single-use product. The report also found that over 360 million single use vapes are bought in the UK each year, and concerningly, only 73% of these vapes are thrown away.

679. If Option 2, reduced the number of vapes consumed, and/or produced then there will be environmental benefits from the reduced litter from vaping disposable vapes.

Reduced costs to recycle vapes

680. A report by Material Focus[402] found that, based on survey data of 16 to 17 year olds, 17% recycled single-use vapes in a shop or local recycling centre

[398] NHS England. 2022. Smoking, Drinking and Drug Use among Young People in England, 2021: Data tables - NHS England Digital
[399] ONS. 2023. E-cigarette use in Great Britain - Office for National Statistics (ons.gov.uk)
[400] Action on Smoking and Health. 2024. Use of vapes (e-cigarettes) among youth people in Great Britain.
[401] Material Focus. 2023. Number of disposable single-use vapes thrown away have in a year quadrupled to 5 million per week.
[402] Material Focus. 2023. Number of disposable single-use vapes thrown away have in a year quadrupled to 5 million per week.

681. For vapes that are recycled, there are costs to local authorities and other stakeholders to correctly recycle them. Zero Waste Scotland surveyed WEEE recycling organisations on the of recycling SU-ecigs.[403,404] WEEE recycling organisations indicated a range of values from 50p per item, to £1 per item, and also figures per tonne (£10,000 per tonne for treatment of SU-ecigs, equivalent to 30p per item).

682. Based on us assuming there would be an annual reduction in vape sales, we would also then assume there would be cost savings associated with reduced cost to recycle vapes.

Direct costs and benefits to business calculations

683. The monetised direct costs to business from Option 2 are:

- Reduced profits for retailers, wholesalers, and manufacturers from reduced sales of vapes
- Familiarisation costs for retailers and advertising companies of all products in scope and producers for nicotine vapes and e-liquids
- Enforcement costs for Advertising Standards Agency (ASA)

684. The non-monetised direct costs to business from Option 2 are:

- Reduced profits to business from reduced sales of nicotine products
- Reduced profits to business from reduced sponsorship
- Reduced profits to business from reduced use of advertising companies
- Familiarisation costs for producers of non-nicotine vapes, herbal smoking products and cigarette papers
- Disposal and environmental costs of removing physical advertising and sponsorship

Table 45: Costs to business under Option 2: Complete ban on advertising and sponsorship

Cost to business description	Cost 2027 – 2036, 2024 price base, 2024 present value
Reduced profits to retailers, wholesalers, and manufacturers from reduced consumption of vapes	£6,571m
Familiarisation costs for retailers and advertising companies of all products in scope and producers for nicotine vapes and e-liquids	£1m
Enforcement costs for Advertising Standards Agency (ASA)	£0.002m
Transition costs to shifting how businesses promote their products	Non-monetised

[403] Single Use E-cigarettes, assumed equivalent to disposable vapes.
[404] Zero Waste Scotland. 2023. Environmental impact of single-use e-cigarettes.

Reduced profits to business from reduced sales of nicotine products	Non-monetised
Reduced profits to business from reduced sponsorship	Non-monetised
Reduced profits to business from reduced use of advertising companies	Non-monetised
Familiarisation costs for producers of non-nicotine vapes, herbal smoking products and cigarette papers	Non-monetised
Disposal and environmental costs of removing physical advertising and sponsorship	Non-monetised
Total monetised cost	**£6,572m**

685. The monetised direct benefits to business from Option 2 are:

- Reduced advertising spend

Table 46: Benefits to business under Option 2: Complete ban on advertising and sponsorship

Benefits to business description	**Benefit 2027 – 2036, 2024 price base, 2024 present value**
Savings to business from reduced advertising costs of vapes	£300m
Savings to business from reduced advertising costs of nicotine products, herbal smoking products, and cigarette papers	Non-monetised
Savings to business from reduced sponsorship costs of vapes, nicotine products, herbal smoking products, and cigarette papers	Non-monetised
Total monetised benefit	**£300m**

686. Taking in to account the above monetised benefits, the net present value to business over the ten year appraisal period is **-£6,272m**.

Risks and assumptions

687. Evidence used in this impact assessment are of mixed quality.

688. Areas of strength in the analysis include:

- Understanding of vape prevalence rates through biennial robust data collection for children in England via NHS Digital. Whilst not used in monetised costs or benefits, it provides good understanding of current and recent historic use.

- Providing supporting evidence to either sense check, or further support, estimates. For example, whilst we could not source relevant literature on the impact of a vape advertising ban on consumption, we were able to:

- Source strong evidence in quality, and quantity, outlining the impact of advertising restrictions of other addictive products (e.g. smoking) that can be used as a proxy for vaping.
- Source supporting studies on the likelihood of vaping following advertising exposure for adults and children.
- Source alternative estimates for sensitivity analysis around key assumptions we have identified.

- Evidence on the profit margins to retailers and wholesalers, as they have been verified as part of DEFRA's stakeholder engagement process undertaken in Spring 2024.

- Projection methodology for the consumption of disposable vape sales aligning with DEFRA's approach.

689. There are some pieces of evidence that are sourced from official statistics and therefore we believe are robust, however, we have had to make assumption in applying them.

- Evidence on retail and manufacture wage rates sourced from ONS official statistics and updated annually. However, we have had to select their wages based on job titles that appear appropriate, this therefore may not reflect wages in practice which could vary.

- Unit cost of a vape was collected as part of DEFRA's stakeholder engagement process[405] and verified as part of DEFRA's stakeholder engagement process undertaken in Spring 2024. However, this is an estimate for disposable vapes only so may not be reflective of all products in scope.

- Evidence on the number of retailers selling vapes, has been sourced from the Association of Convenience Stores in 2024 for number of retailers, the number of supermarkets is source from IGD in 2019, and number of specialist vape stores have been sourced from the Independent (who reference the Local Data Company) in 2023 on the number of specialist stores. We have however had to assume that no other stores sell vaping products, and that all these stores sell vaping products.

690. There is a limited evidence base for all products in scope of this impact assessment, and therefore this has limited the quantitative analysis. Additionally, assumptions have had to be included in replacement of evidence in some places of the monetised costs and benefits.

691. The main evidence gaps of this impact assessment are:

- Evidence on the impact of vape advertising on business profits

- Evidence/ intelligence on supply chain pathways in the sector

[405]Defra research conducted in 2023 based on a sample (a compiled list of approximately 40 products) of products for sale from both online and in-store retailers, including specialist vape stores, newsagents and supermarkets, Tobacco and Primary Medical Services (Scotland) Act 2010 (legislation.gov.uk)

- Evidence on sponsorship use and business profits
- Evidence on nicotine products, herbal smoking products and cigarette papers sector, profits, and/or prevalence
- Evidence to verify revenue and advertising spend on vapes
- Evidence on the advertising process and use of outsourcing from advertising companies
- Transition costs to businesses

692. Where there are evidence gaps, we have either filled these with assumptions, based these on limited evidence, or produced non-monetised costs or benefits.

693. The key assumptions that have been used in the analysis have been tested through sensitivity analysis below.

694. Given the limited evidence in this area, we have been unable to further test the sources of evidence for bias against other sources. The limitations of data have been outlined when used in analysis.

Sensitivity analysis

Projection of vape sales

695. As outlined in paragraphs 417 to 424 in our baseline, and under Option 2, disposable vape sales growth has been estimated using Eunomia's[406] projections and extrapolated further by DEFRA and DHSC.

696. Eunomia's projection is based on the year-on-year growth rate in single-use-vape consumption forecast in Zero Waste Scotland, for the period 2022 to 2027[407]. This growth trend is assumed to continue between 2027 and 2030 and has been extrapolated further assuming it will continue until 2036. In the absence of any intervention, key changes are expected to be a continued growth in the uptake of vapes across the population along with a rising share of disposable vape users (and share of sales revenue) among the growing number who use vapes.

697. The forecasts are recognised as being uncertain, and therefore sensitivity analysis around the central scenario has been undertaken to explore this risk, based on the high and low scenarios in single-use-vape consumption forecast in Zero Waste Scotland for the period 2022 to 2027 as Eunomia used the same growth rate for this period. This works out to 12% (to the nearest percent) above and below the average/central scenario for disposable vapes POM, whilst keeping the year-on-year growth rate the same.

[406] Eunomia. 2023. Analysis of the market for vapes: exploring the environmental impacts of single-use vapes.
[407] Zero Waste Scotland. 2023. Scoping policy options for Scotland focusing on understanding and managing the environmental impact of single use e-cigarettes.

698. In line with the methodology used to estimate monetised profit loss to business, we have uplifted the profit loss figure by 50% to represent profits from the non-disposable market. However, we cannot comment on how many sales this profit represents.

699. Applying an approximately 12% change in sales, compared to the central projection, we estimate the following impact on sales projections and profits:

Table 47 - Projected disposable vape sales in the UK in low, central, and high consumption scenarios

Year	2027	2031	2036
Low	624,409,427	1,005,315,678	1,368,867,885
Central	709,611,198	1,142,492,781	1,555,652,330
High	794,812,969	1,279,669,884	1,742,436,775

Table 48 - Profits loss to business from reduced vape sales in the UK, 2024 price base, 2024 present value, £m

Profit loss	Low	Central	High
Total profit loss	5,782	6,571	7,360

Percentage uplift to profits to account for non-disposable vapes

700. As outlined in paragraph 434, we have applied an uplift to estimated profits to business from disposable vapes to account for profits from non-disposable vapes. We have applied a 100% uplift to the projected profits for businesses based on industry body stakeholders reporting the single-use vape market sits at around 50% of the market in the UK, as reported by Eunomia[408].

701. We have tested the impact on business profits if a different uplift was applied. This is to illustrate how profits may differ depending on what the true market vale split is between disposables and non-disposables. For a low value, we have applied a 30% uplift to estimated profits from disposable vapes. This is based on industry body stakeholders reporting the single-use vape market peaked at around 70% of the market in the UK, as reported by Eunomia. For a high value, we have applied at 70% uplift to reflect the difference between the central and low estimate. The impact on business profits can be seen in Table 50.

Table 49 - Uplift values applied in low, central, and high scenarios

Scenario	Percentage of the vape market	
	Disposable vapes	Non-disposable vapes
Low	70%	30%
Central	50%	50%
High	30%	70%

[408] Eunomia. 2023. Analysis of the market for vapes: exploring the environmental impacts of single-use vapes.

Table 50 - Profit loss to business by varied profit uplift for the non-disposable market, 2024 price base, 2024 present value, £m

Profit loss	Low	Central	High
Total profit loss	4,694	6,571	10,952

Percentage reduction in vape consumption as a result of an advertising ban

702. As outlined in the monetised costs section above, as a proxy for vaping, we have used a study that estimates the percentage reduction in consumption as a result of tobacco advertising bans of 11.7%.

703. As this is based on a behaviour response from tobacco advertising and consumption there is a risk that it is not applicable to vape advertising and consumption. To test this, we will vary the percentage reduction, to estimate what impact this could have on monetised costs and benefits.

704. For a high estimate we have used a percentage reduction of 20%. This was the percentage reduction used in the MHRA Tobacco Products Directive (TPD) impact assessment, and applied to the total value of the market. Why a value of 20% was chosen in this impact assessment was not outlined, however it is stated that MHRA are "fairly certain that the actual impact would be much less than this".

705. For a low estimate we have used a percentage reduction of 5%.

Table 51: Sensitivity scenarios for percentage reduction in vape consumption as a result of an advertising ban, 2024 price base, 2024 present value, £m

Profit loss, £m	Low estimate	Central estimate	High estimate
Total	2,808	6,571	11,233

Unit cost of a vape

706. As stated in paragraph 432, the unit cost used in our central estimate was collected[409] and verified as part of DEFRA's stakeholder engagement process undertaken in Spring 2024. However, they did also provide low (£4.01) and high (£7.10) ranges for the average value of £5.38. We have used this average cost of a disposable vape as a proxy for the retail price of all vapes. In practice this could differ, as non-disposable vapes and nicotine products vary in prices.

707. To estimate the influence of this unit cost on the monetised costs and benefits in the central scenario, we applied used the lower and upper range estimates for the retail price of a vape provided by DEFRA. The wholesale and manufacturer prices have been estimated using the same methodology as for the counterfactual and central estimate described in paragraphs 432 and 433 above.

Table 52: Sensitivity scenarios for sales price, 2024 price base, not discounted

Sales prices	Low	Central	High
Retailer	£4.01	£5.38	£7.10
Wholesaler	£2.21	£2.95	£3.90

[409] Defra research conducted in 2023 based on a sample (a compiled list of approximately 40 products) of products for sale from both online and in-store retailers, including specialist vape stores, newsagents and supermarkets

Manufacturer	£1.94	£2.60	£3.43

708. The methodology used in our central estimate are such that outputs are estimated based on projected revenue divided by unit costs. Consequently, the profits will not change as a result of a change in unit costs, however the estimated output for the expected revenue will be impacted by a change in unit costs.

709. Applying the range of unit costs above, we estimate the below impact on the number of reduced vape sales as a result of an advertising ban.

Table 53: Profit loss for low, central, and high vape unit costs, 2024 base price, 2024 present value

Profit loss (£m), discounted	Low	Central	High
Total	4,899	6,571	8,670

Profit margins for businesses

710. The costs in Option 2 are largely driven by the profit margin of retailers, at 45% of the retail price of £5.38. To test the profit margins of retailers, wholesalers, and manufacturers alternative low and high profit margins have been applied to the analysis.

711. As outlined in paragraph 432 and 433, the profit margins for retailers, wholesalers, and producers have been applied in line with DEFRA's Disposable Vapes impact assessment[410], which was verified as part of DEFRA's stakeholder engagement process undertaken in Spring 2024. This also included a low and high range for retailer and wholesaler profit margin as outlined in Table 54.

Table 54: Sensitivity scenarios for profit margins for businesses

Profit margins	Low	Central	High
Retailer	40%	45%	50%
Wholesaler	10%	12%	14%
Producer	10%	15%	20%

712. Because of the methodology we use to estimate sales price at each stage of the supply chain, the sales prices in this scenario for wholesalers and manufacturers are adjusted.

Table 55 - Sales price in low, central, and high profit margin scenarios, not discounted, 2024 price base

Sales prices	Low	Central	High
Retailer	£5.38	£5.38	£5.38
Wholesaler	£3.23	£2.95	£2.69
Producer	£2.91	£2.60	£2.15

713. Using the same methodology as outlined in the monetised costs section, and applying the varying profit margins for retailers, wholesalers, and producers we estimate a reduction in reduced profits below.

[410] Department for Environment and Rural Affairs (DEFRA). 2024. Ban on the sale and supply of disposable vapes in England. Final Stage impact assessment.

Table 56: Profit margin sensitivity, 2024 price base, 2024 present value, £m

Lost profits	Low	Central	High
Total, discounted	5,741	6,571	7,260

Fire unit costs

714. The savings in Option 2 are largely driven by the marginal costs of fires, and the number of fires. To test the overall cost savings from a reduction in fires both of these have been tested.

715. For the marginal cost of fires, the high and low marginal cost estimates are based on Home Office estimates of the average cost of fires in 2020, in different settings.[411] The total unit cost for all fires which makes up the central scenario is £45,900. Vapes have been reported to cause fires in UK waste plants[412], which could be considered 'Other buildings' (high, £124,200), and bin lorries[413], which could be considered 'Road vehicles' (low, £17,700).

716. Using the same methodology as outlined in paragraphs 659 to 664 and applying the high marginal cost of fires, and the low marginal cost of fires, we estimate the savings as a result of reduced fires over the 10 year period to be:

Table 57: Sensitivity scenarios for fire unit costs, £m, 2024 price base, 2024 present value

	Low	Central	High
Savings as a result of reduced fires, discounted	8	20	54

717. For the number of fires, the high scenario is based on Material Focus'[414] estimate of over 1,200 lithium-ion fires happening in a year. The low scenario is based on previous estimates by Eunomia reporting lithium-ion batteries to cause 201 fires in landfill a year[415].

Table 58: Sensitivity scenarios for number of fires, 2024 price base, 2024 present value

	Low	Central	High
Savings as a result of reduced fires (£m)	6	20	34

[411] Home Office. 2023. Economic and social cost of fire.
[412] The Guardian. 2023. Single-use vapes sparking surge in fires at UK waste plants.
[413] BBC News. 2024. Vapes spark fire in back of rubbish lorry.
[414] Material Focus. 2024. Over 1,200 battery fires in bin lorries and waste sites across the UK in the last year.
[415] Eunomia and Environmental Services Association .2021. Cutting Lithium-ion Battery Fires in the Waste Industry.

Small and Micro Business Assessment (SaMBA)

718. This policy will apply to all size businesses, including small and micro business. The policy extends to businesses of all sizes as it would not be possible to exempt small businesses[416] from this policy while still achieving the aims and objectives.

719. Allowing small businesses to display vape adverts in their premises, windows or storefronts would mean that children and non-smokers are still exposed to vape advertising. This undermines the overall policy objective to prevent these groups from being exposed to such advertisements. Therefore, we cannot exclude small businesses from this ban as it would undermine the overall policy of preventing the exposure of children to vape and nicotine product advertisements.

720. Only costs incurred by retailers who sell vapes are quantified for this Small and Micro Business Assessment (SaMBA), as no wholesalers or producers are expected to be small or micro businesses. As outlined in the 'monetised cost' section, we assume producing the advertising to mostly happen at producer level, and therefore the only quantified costs included in the SaMBA are reduced profits to retailers because of reduced consumption.

721. Although there may be small and micro producers or wholesalers that experience reduced profits, and there may be wholesalers or retailers that are involved in producing advertising, we have not been able to identify sufficient data on these businesses to quantify the impact for this SaMBA.

722. Also, whilst some retailers of vapes are also likely to sell other nicotine products (i.e. convenience stores), as explained in paragraph 391 we have not included these products in our analysis, partly due to limited evidence and data on these products. As a result, we have also not been able to quantify the potential impact specifically on small and micro businesses that sell these products.

723. Additionally, due to limited data we have not included the impact on businesses involved in sponsorship of vapes, nicotine products, herbal smoking products, or cigarette papers. As a result, we have also not included the impact on advertising businesses in this SaMBA.

724. With reference to the RPC's SaMBA checklist[417], the very limited data we have been able to identify for businesses involved in vape sponsorship or vape advertising businesses does not enable us to: i) identify an accurate number of businesses in scope; ii) the market share of the businesses in scope; iii) their number of employees and an accurate quantification of and disproportionate impacts small and micro businesses may have. For a more detailed discussion of the data that we have been able to identify see the monetised and non-monetised costs and benefits section above.

[416] Based on the better regulation framework guidance small businesses are defined as those employing between 10 and 49 full-time equivalent (FTE) employees. Micro-businesses are those employing between one and nine employees. Small and micro businesses include voluntary and community bodies (also known as civil society organisations)
[417] RPC. 2019. Checklist_for_high_quality_SaMBA_NEW_AUGUST_2019.pdf (publishing.service.gov.uk)

725. With respect to retailers that are small and micro businesses, the impact assessment considers the following quantified impacts:

- Reduced profits to retailers from reduced consumption of vapes
- Familiarisation costs to retailers

726. With respect to retailers that are small and micro businesses, the impact assessment considers the following non quantified impacts:

- Reduced profits to retailers from reduced consumption of nicotine products, herbal smoking products, and cigarette papers

727. Firstly, we are able to use existing data and assumptions to estimate the number of small and micro retailers that sell vapes.

The number of small and micro retailers that sell vapes

728. Assuming all convenience stores (50,387) and supermarkets (5,944) sell vapes, and based on evidence that there are 3,573 specialist vape retailers in the UK, we estimate that there 59,904 retailers in the UK that sell vapes.

729. We have assumed that all supermarkets are not small or micro businesses.

730. We estimate 35,775 convenience stores are small or micro businesses. The ACS Local Shop Report 2024[418][359] put the number of convenience stores in the UK to be 50,387 in 2024, of which 71% are independent retailers (we assume all multiple operators are not small and micro businesses). Independent retailers includes unaffiliated independents and symbol groups. We assume that all convenience stores sell vapes and all independent convenience stores are small or micro businesses. 71% of all convenience stores in the UK is equivalent to 35,775 retailers that we estimate are small and micro businesses.

731. In addition, as we do not have data on the size of the businesses that are specialist vape retailers, we assume that all the estimated 3,573 specialist vape retailers[362] in the UK are small and micro businesses. We recognise that this may be an overestimate as some of these could be larger chains.

732. Based on these categories of stores, we estimate that there are 39,348 vape retailers in the UK that are small and micro businesses. This is around 66% of our estimate for the total number of vape retailers in the UK. We do not have specific data on the proportion of sales of vapes that are in small and micro retailers.

Table 59 - Summary of business in scope of quantified SaMBA

Business type	**Number of businesses**

[418] Association of Convenience Stores. 2024. The Local Shop Report 2024. Accessed here: The Local Shop Report | ACS

Independent convenience stores	35,775
Specialised tobacco and vape retailers	3,573
Total small and micro retailers	39,348

Monetised costs to small and micro businesses

733. Taking these estimates, we are able to estimate what percentage of our estimated costs to business would fall to small and micro business.

Table 60 - Summary of monetised costs to small and micro businesses, £m

Small and micro retailers impacted	***Cost name***	***Cost (£m)***
Vape retailers	Reduced profits from reduced consumption of vapes	3,301
	Familiarisation costs to retailers	0.3
Total		3,302

Profit loss to small and micro retailers from reduced consumption of vapes

734. As discussed above, we estimate the total number of retailers in scope of this policy to be 59,904. Due to limited evidence, we cannot distinguish whether profit margins differ between different size retailers, we have therefore assumed all size retailers to have the same profit margin for vapes of 45%.

735. As outlined in the monetised cost section above, over the ten-year appraisal period, we estimate a discounted profit loss to all retailers to be c.£5bn. Dividing this through by the total number of retailers (59,904), we calculate profit loss per store over the appraisal period to be c.£84,000, or an average of £8,390 per year.

736. As outlined above, we estimate 66% of total retailers to be small and micro business, which is equivalent to 39,348 retailers (35,775 small and micro convenience stores, and 3,573 are specialist vape shops). Multiplying the profit loss per store by the number of small and micro retailers in scope, we can estimate a profit loss of c.£3,301m over the appraisal period. As we cannot distinguish between any differences in profit margins

between different size businesses, the profit loss per store remains the same as above (c.£84,000 over the appraisal period or £8,930 per year on average).

Table 61: Profit loss to small and micro retailers from reduced consumption of vapes

Year	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	Total
Number of businesses in scope	**59,904**	**59,904**	**59,904**	**59,904**	**59,904**	**59,904**	**59,904**	**59,904**	**59,904**	**59,904**	**59,904**
Micro and small	39,348	39,348	39,348	39,348	39,348	39,348	39,348	39,348	39,348	39,348	39,348
Medium and large	20,556	20,556	20,556	20,556	20,556	20,556	20,556	20,556	20,556	20,556	20,556
Annual profit loss - all retailers	**362,622,928**	**402,018,394**	**440,283,167**	**476,264,422**	**508,776,292**	**536,660,116**	**558,849,407**	**574,434,793**	**582,723,709**	**583,289,550**	**5,025,922,778**
Micro and small	*238,187,827*	*264,064,625*	*289,198,731*	*312,832,915*	*334,188,243*	*352,503,653*	*367,078,624*	*377,315,841*	*382,760,391*	*383,132,062*	3,301,262,912
Medium and large	*124,435,101*	*137,953,769*	*151,084,436*	*163,431,507*	*174,588,049*	*184,156,463*	*191,770,782*	*197,118,953*	*199,963,318*	*200,157,488*	1,724,659,866
Profit loss per store, £	**6,053**	**6,711**	**7,350**	**7,950**	**8,493**	**8,959**	**9,329**	**9,589**	**9,728**	**9,737**	**83,900**
Micro and small	6,053	6,711	7,350	7,950	8,493	8,959	9,329	9,589	9,728	9,737	83,900
Medium and large	6,053	6,711	7,350	7,950	8,493	8,959	9,329	9,589	9,728	9,737	83,900

737. For small and micro convenience stores, we can contextualise these lost profits using the ACS Local shop report publication[419]. If total revenue for the sector is forecast to be £49bn in 2024, dividing this by the number of convenience stores (50,387), the annual revenue per store in 2024 is estimated to be c.£980,000. The ACS publication reports that 20.1% of sales in 2023 we due to tobacco and vape sales, assuming this represents the value of tobacco and vapes sales of total convenience store revenue we estimate that approximately £197,063 of revenue in 2024 is due to tobacco and vape sales. Assuming all products sold under 'Tobacco and Vapes' in the ACS publication have a profit margin equivalent to that assumed for vapes (45%), we estimate profit per store in 2024 to be £88,678 per year in a counterfactual scenario. Taking the first appraisal year as an example, estimated profit loss per store is £6,053, this is equivalent to 6.8% of annual tobacco and vapes profits in 2024. However, revenue and profit may differ in our appraisal period, compared to those provided by ACS for 2024, so these estimates should be taken as indicative only.

738. Likewise, if we assume profit margins for all goods sold in convenience stores matches the 45% profit margin we have applied for vapes, we can multiply this by 2024 revenue per convenience store estimated above (£980,000) to estimate total profit per convenience store to be c. £441,00 in 2024. In reality we expect profit margins to differ between products so this estimate may not be an accurate reflection of what proportion of total convenience store profits it represents. The estimated loss in profit in 2024 (£6,053), for example, is therefore estimated to be equivalent to 1.4% of annual convenience store total profit.

739. We do not have the same data to estimate profit loss per store for specialist vape shops or supermarkets as we do not have intelligence on their annual revenue or profit. This means we are not able to provide equivalent estimates for these larger businesses and

[419] Association of Convenience Stores. 2024. The Local Shop Report 2024. Accessed here: The Local Shop Report | ACS

determine if the policy would have a disproportionate impact on different size businesses.

740. Also, it is likely that any loss in profits will at least in part be offset by increased profits on goods and services purchased in place of vapes.

Familiarisation cost - retailers

741. To estimate familiarisation costs, we multiply the familiarisation cost for all retailers by the percentage of those that are small and micro businesses. As outlined above, we estimate 39,348 retail stores are small and micro businesses, which is equivalent to 66% of all retailers in scope.

742. For all retailers, in the monetised cost section we estimate a cost of £0.5m in the first appraisal year. Multiplying this by 66%, the cost to small and micro businesses is estimated to be £0.3m, or c.£8 per store.

Table 62: Familiarisation costs for retailers, 2024 price base, 2024 present value

Familiarisation (2024 prices)	**Annual cost**
Total retailers	£505,663
Total small and micro retailers	£332,143
Small and micro retailers per store	£8

Other costs to small and micro retailers

743. As described in the non-monetised cost section above, retailers could also face reduced profits from reduced consumption of nicotine products, herbal smoking products, and cigarette papers. Due to data limitations, we have not been able to quantify these impacts, however given we have estimated approximately 66% of retailers in the UK are small and micro businesses, this is a cost that they would likely face a result of this policy.

744. Small and micro retailers may also incur lost income from reduced footfall-related sales. These are sales of goods bought in addition to vapes, nicotine products, herbal smoking products or cigarette papers. If the products in scope of this policy are the primary reason for customers entering retailers, there could be reduced profit if the secondary items are also not purchased. It could be logical to assume this is more likely to impact small and micro retailers, if a smaller number of items are typically purchased in small and micro retailers compared to supermarkets. The ACS estimate that the average number of items purchased in convenience stores is 2.8, with an average sales amount of £8.04[420]. If the items in scope of this policy are the indented purchase item, and an additional 1.8 items are bought spontaneously whilst in store this could result in additional lost profits. However, there is not sufficient evidence on whether the products in scope of this policy, are the main products that draw people to these retailers. As a

[420] Association of Convenience Stores. 2024. The Local Shop Report 2024. Accessed here: The Local Shop Report | ACS

result, we cannot conclude that this policy would also lead to reduced footfall for small and micro retailers.

745. Additionally, using tobacco as a proxy, a 2016 report by ASH[421] reviewed data from 1,400 small retailers across the UK using an electronic point of sale system and compared tobacco and non-tobacco transaction rates. The majority of transactions did not include any tobacco (79%), 13% of transactions included both tobacco and non-tobacco products, and 8% were for tobacco products only. The analysis compared the average values of the different types of transaction and concluded that were was no relationship between the sales of tobacco products and non-tobacco products, and that "*smokers approach the till with a similar basket of everyday items to those who come into the shop with no desire to buy tobacco.*" Although not specifically in relation to vapes or other nicotine products, herbal smoking products, and cigarette papers this is evidence that there isn't a single item that is the primary reason customers enter small retailers. This suggests that impact of lost income from reduced footfall-related sales for small and micro retailers as a result of this policy may be limited.

Potential disproportionate impacts

746. In addition to these costs, it could be possible that some of the costs to businesses of this policy will have a disproportionate impact on small and micro businesses.

747. One example of this is time and opportunity cost when familiarising with the policy. As small and micro businesses have less employees, the opportunity cost on their time could be greater as they have less employees to cover shifts of those familiarising themselves with the policy. However, whilst medium and large businesses may have more employees to assist with this, due to the size of their business it is logical to assume they will need to spend more time disseminating the familiarised information to more employees which could be an additional burden to medium and large businesses. This means that familiarisation costs could potentially vary in proportion with the size of the businesses and not result in a disproportionate impact on small and micro businesses. We also will come forward with clear and concise guidance that will further mitigate any potential familiarisation issues.

748. For small and micro retailers in scope of this policy, it could be possible for them to substitute advertising of vapes and other nicotine products for other products they sell. However, this would not be possible for specialist tobacco and vape retailers who we assume to sell only tobacco, nicotine, and vape products. Whilst medium and large retailers could also do this, it may be easier for medium and larger businesses who we assume sell a larger number of items to advertise.

749. Another example where there could be a disproportionate impact on small and micro retailers is on their profit margins. Throughout this IA we have assumed a retail profit margin of 45% to estimate potential impacts on profits. Due to limited data, we do not have evidence on whether profit margins differ based on the size of business selling the product. If we assume small and micro businesses hold a smaller number of products and less diversified stock than medium and large businesses, it could be possible that

[421] Action on Smoking and Health. 2016. Counter Arguments – How important is tobacco to small retailers?

sales of vapes, other nicotine products, herbal smoking products, and cigarette papers could account for a larger proportion of the business profit compared to medium and large businesses. However, we do not have sufficient data on industry profit margins to be able to verify how sales and profit margins differ between small and micro businesses and medium and large businesses.

750. Whilst we are aware small and micro business could be disproportionately impacted, we have considered mitigations for these below.

Potential mitigations to small and micro businesses

751. Whilst no small and micro businesses have been excluded for this policy, we have considered several activities to mitigate against disproportionate impacts. These include:

- Stakeholder engagement
- Lead-in times

Stakeholder engagement

752. DHSC has undertaken broad engagement on reducing the appeal and availability of vapes. Over the past year DHSC officials conducted a wide ranging consultation and engagement exercise regarding overall plans to reduce the appeal and availability of vapes (the tobacco industry and those affiliated with it were able to respond to this consultation and the consultation response makes clear the views of the tobacco industry in response any question).[422] Whilst this did not include specific questions on vape advertising as this policy was developed afterwards, the considerations of retailers and stakeholders were taken into account. Specifically, representative bodies were broadly supportive of a need to reduce the appeal and availability of vapes to children, and cited their main concerns as being lead in times and guidance. Potential loss of sales from reduced footfall was not brought up in regards to any of the vaping proposals. In addition, many of the policies that were discussed in this exercise such a restriction on flavours, and packaging would also have impacted on what adverts would be permissible and no stakeholders raised this as an issue.

753. DHSC remains in frequent contact with retailers and representative bodies, it has been announced since the publication of Labour's manifesto that there was intention to ban vape advertising to children. This has not been raised as a significant issue by stakeholders. Based on stakeholder feedback, DHSC will, in partnership with DBT and stakeholders, produce guidance to ensure a smooth implementation of the policies in the bill.

754. So whilst we have not been able to engage separately and specifically on vape advertising, we have engaged thoroughly on plans to reduce the appeal and accessibility of vapes to children and we are confident from this engagement that the primary concerns of small and micro businesses are primarily around having long-enough lead in times and clear concise guidance, both of which will be provided.

[422] Creating a smokefree generation and tackling youth vaping - GOV.UK (www.gov.uk)

755. In addition to this, before future vaping regulations, another full consultation will take place on the future regulations, whilst this will not change anything related to advertising/vending machines it will allow the government to assess whether small and micro businesses feel they have already been majorly impacted. If this is the case, then this will be taken into consideration when formulating new vaping regulations.

756. More specific engagement with stakeholders is difficult because the UK is a member of the World Health Organisation Framework Convention on Tobacco Control[423]. Article 5.3[424] of the convention states "In setting and implementing their public health policies with respect to tobacco control, Parties shall act to protect these policies from commercial and other vested interests of the tobacco industry in accordance with national law". This recognises the conclusion from the World Health Assembly that the tobacco industry has operated for years with the express intention of subverting the role of governments and of WHO in implementing public health policies to combat the tobacco epidemic. In practice, this means that we do not engage with the tobacco industry unless absolutely necessary and then ensuring the highest level of transparency within those interactions. However, they are able to and do respond to our consultations, including the one on creating a smoke-free generation held in 2023. Many Tobacco companies are diversifying as result of the decreasing prevalence of smoking, this diversification has led to many Tobacco companies owning, having shares in, or having links with vaping companies. We therefore need to be mindful of the balance between engaging and protecting public health policy from the influence of the tobacco industry, and only engage if it is absolutely necessary.

757. Whilst some vaping organisations have taken steps to remove Tobacco Industry influence this is not the case across the industry as a whole and it is difficult to verify where stakeholders are free from Tobacco Industry influence unless this is stated and proven outright. Due to this consideration, engagement outside of an open government consultation is very difficult and there had already been a consultation on measures to reduce the appeal and availability of vapes to children.

Lead-in times

758. Potential impacts on SMBs will be mitigated by lead-in times. The ban on vape advertising will come into place on a date specified by the Secretary of State, the Bill is drafted in this way so that an appropriate lead-in time can be given to allow businesses enough time to bring current agreements to an end, seek alternative advertisements to display, and existing advertisements. We are working with DCMS and other stakeholders to identify and assess an appropriate lead-in, it is likely to be a period of no less than 12 months.

759. In our engagement exercises with retailers regarding the Tobacco and Vapes Bill as a whole, it was stated repeatedly by retailer representative bodies that the main consideration for them was adequate lead in times and guidance, both of which will be provided in order to mitigate impact. Additionally, the lead-in times will allow SMBs to

[423] WHO Framework Convention on Tobacco Control. World Health Organization 2003, updated reprint 2004, 2005. Accessed here: Microsoft Word - WHO-FCTC-English-FOR PRINTING_FINAL.doc
[424] WHO FCTC. 2013. Guidelines for implementation of Article 5.3.

organise new advertising agreements for different products. The space and displays that would have been taken up by vape and nicotine product advertising can therefore be used to advertise different products. This ability to diversify away from vape and nicotine product advertisements should provide some mitigation to any loss of revenue from advertising agreements. In addition, advertisements for similar, but medicinal products, could be displayed as the measures in the bill exempt medicines and medical devices – it is therefore possible to enter into advertising and sponsorship agreements for licensed nicotine based medicines such as nicotine inhalators, mouth sprays, and patches.

760. Whilst small and micro businesses are expected to face reduced profits from a reduction in their vape sales (and potential reduction in footfall-related sales), it is expected that consumers will reallocate their income expenditure to other goods and services in the economy. Since small and micro businesses are a component of the economy, losses from reduced vape and nicotine product sales will be at least partially offset by consumption of their other products.

Ban vending machines for the sale of vaping products

Title: Ban on vaping product, nicotine product and cigarette paper vending machines **IA No:** DHSCIA9618 (1) **RPC Reference No:** RPC-DHSC-5316(3) **Lead department or agency:** Department for Health and Social Care **Other departments or agencies:**	Impact Assessment (IA) **Date:** 05/11/2024 **Stage:** Final **Source of intervention:** Domestic **Type of measure:** Primary legislation **Contact for enquiries:**

Summary: Intervention and Options

RPC Opinion: RPC Opinion Status

Cost of Preferred (or more likely) Option (in 2024 prices)			
Total Net Present Social Value	**Business Net Present Value**	**Net cost to business per year**	**Business Impact Target Status**
-1098.1m	-1101.4m	128.0m	Qualifying provision

What is the problem under consideration? Why is government action or intervention necessary?

Current legislation prohibits the sale of nicotine vapes to under 18s and the Bill extends the restrictions on sale to include non-nicotine vapes and nicotine products to under 18s. However, children under the age of 18 could currently have access to vapes from vape vending machines- while age verification software is available, it is difficult to enforce age restriction and prevent proxy sales where there is no human to observe the sale. Whilst the vending machine market is still relatively new, we anticipate that it will continue to grow, making access to vapes increasingly easier for those under the age of 18. Government intervention is necessary to restrict the access to vape vending machines and prevent underage purchasing of vapes and proxy sales of vapes via vending machines. This rationale for intervention is similar to the approach taken in 2011 when tobacco product vending machines were banned due to the difficulty of enforcing age of sale restrictions through vending machines and to prevent young people from accessing tobacco products through vending machines.

What are the policy objectives of the action or intervention and the intended effects?

The governments aim is to prevent young people from accessing vaping and nicotine products and becoming addicted to nicotine. The intended outcome is that by banning the presence of vape vending machines, access to vaping and nicotine products will be more challengeing so they will be less likely to use them. Therefore, a key indicator of success will be whether usage of these products reduces.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

- **Option 1 (Do nothing/BAU)-** continue without restrictions on vaping and nicotine product vending machines.
- **Option 2 (Preferred)-** Full ban on vaping and nicotine product vending machines.
- **Option 3-** Restrict where vape vending machines can be operated to age restricted over-18 premises.
- **Option 4-** Mandate specific age-verification software (e.g. biometric)
- **Option 5-** Restrict both the location of vape vending machines and mandate specific age verification.

The primary reason for not taking options 1 and 3-5 forward is that these options do not remove the risk of individuals using machines for proxy purchasing. In addition, the presence of machines contributes to promoting, and advertising of vapes and this would still be the case under options 1 and 3-5.

Will the policy be reviewed? will **If applicable, set review date:** 2031

Is this measure likely to impact on international trade and investment?		No		
Are any of these organisations in scope?	**Micro** Yes	**Small** Yes	**Medium** Yes	**Large** Yes
What is the CO_2 equivalent change in greenhouse gas emissions? (Million tonnes CO_2 equivalent)		**Traded:** N/a	**Non-traded:** N/a	

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister: Andrew Bowie Date: 04/11/2024

Summary: Analysis & Evidence

Policy Option 1

Description: Ban on vending machine product, nicotine product and cigarette paper vending machines

FULL ECONOMIC ASSESSMENT

Price Base Year 2024	PV Base Year 2024	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: -1098.1	**High:** -272.1	**Best Estimate:**-1098.1

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	9.1	10	31.8	**275.4**
High	36.2		127.2	**1101.4**
Best Estimate	36.2		127.2	**1101.4**

Description and scale of key monetised costs by 'main affected groups'

The appraisal period is 10 years from the date of implementation. A full ban on vaping and nicotine product vending machines is expected to reduce accessibility and consumption those products. This will prevent business activity for retailers involved in the vape vending machine market. This will also reduce profit for vaping and nicotine product retailers, wholesalers and manufacturers by £1,065m. There will be expected familiarisation costs of £0.1m. There will be expected transition costs of £0.02m. There will be asset value loss of £35m. There will be disposal costs of £1m.

Other key non-monetised costs by 'main affected groups'

- Stock costs
- Enforcement costs
- Challenge to vapes and other nicotine products as smoking cessation tools.

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	0		0.4	**3.3**
High	0		0.4	**3.3**
Best Estimate	0		0.4	**3.3**

Description and scale of key monetised benefits by 'main affected groups'

- Savings to government from reduced fires from lithium batteries in vapes of £3.3m

Other key non-monetised benefits by 'main affected groups'

- Potential health benefits
- Environmental benefits to society from reduced litter associated with fewer vapes being disposed of

Key assumptions/sensitivities/risks **Discount rate (%)** 3.5%

- Given the uncertainty a best (high) estimate and a low estimate for costs have been presented.
- Size of the vaping and nicotine product vending machine market
- Impact of ban on vaping prevalence and uptake
- The health impact of vaping is not known
- We are not able to monetise the impact on under 18s specifically due to lack of data
- Interactions with other policies may change the counterfactual
- The impact of this policy has been analysed individually to other policies and may not fully reflect the wider changing policy environment.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:	

Costs: 128.0	Benefits: 0.0	Net: 128.0	Score for Business Impact Target (qualifying
			N/A

Evidence base

Problem under consideration and rationale for intervention

Background and overview

Product definitions

761. Vapes can either contain nicotine or be nicotine-free. Vapes work by heating a liquid that creates a vapour which is then inhaled. A nicotine vape typically contains nicotine, propylene glycol and/or vegetable glycerine, and flavourings.

762. The Bill also refers to 'nicotine products' other than vapes to ensure that all current and future nicotine products are regulated in the same way. Nicotine products are any item or device, or part of any item or device, which enables nicotine to be delivered into the human body. The most prominent example currently of a nicotine product other than a nicotine vape is nicotine pouches.

763. Cigarette papers are anything intended to be used for encasing tobacco products or herbal smoking products for the purpose of enabling them to be smoked.

Number of people who use these products

764. It is illegal to sell nicotine vapes to people aged under 18. However, the number of young people that have vaped has increased significantly in recent years, and a 2024 Action on Health and Smoking (ASH) survey[425] shows that of 11- to 17-year-olds who vape, 27% report that they used vapes below the maximum nicotine strength for adults (20mg/ml or 2%), 24% used vapes at the limit and 12% use vapes above the limit. This is compared to 5.3% of 11–17-year-olds that currently vape, that said they usually use non-nicotine vapes.

765. Forthcoming vaping regulations will seek to curb this rise, however there is a risk that in order to adapt to these regulations we see more vape vending machines as they offer an easier path for under-age sales and proxy sales.

766. NHS Digital's report, Smoking, drinking and drug use among young people in England 2021[426], showed a recent doubling of regular vape use for 11- to 15-year-olds, from 2% in 2018 to 4% in 2021. This is equivalent to around 140,000 children in England aged 11 to 15 years old regularly vaping. The report also shows that vaping prevalence is higher among older children, where 1% of 11-year-olds were current vape users, compared with 18% of 15-year-olds[427].

767. More recent analysis by ASH also shows the number of young people who have tried vaping has increased. The ASH Use of e-cigarettes (vapes) among young people in Great Britain report showed that in 2024, 18% of children (aged between 11 and 17)

[425] Action on Smoking and Health. 2024. Use of vapes (e-cigarettes) among young people in Great Britain.
[426] NHS Digital. 2022.Smoking, Drinking and Drug Use among Young People in England, 2021.
[427] Regular users were those who used vapes at least once a week. Current use includes regular users and occasional users who used vapes less than once a week.

had tried vaping, up from 16% in 2022, and 14% in 2020 before the first COVID-19 lockdown[428].

768. ASH report the main source of youth accessing a vape is being given to them (54%), followed by purchasing in shops (48%), and informal purchasing (27%). Amongst youth never smokers, the most popular reason for vaping was reported to be 'just to give it a try' (51%) followed by 'other people use them so I join in' (18%)[429].

769. Cigarette papers are used in tandem with tobacco products such as cigarettes and cigars, as they are used to encase the tobacco for smoking. They are also used to encase herbal smoking products.

Vaping and use of nicotine products as a smoking cessation tool

770. The latest evidence has found that, in the short and medium term, vaping poses a small fraction of the risks of smoking[430], because vapes do not contain tobacco.

771. Vaping can therefore provide a less harmful alternative for an adult smoker, by giving the person the nicotine they crave through heating e-liquid but creating fewer toxins and at lower levels.

772. Recent evidence shows that, for many adult smokers, vapes can be an effective tool in supporting smoking cessation, especially when combined with behavioural support[431,432]. It found that adverse events from vapes are rare, and as rare as adverse events from nicotine replacement therapies[433]. Ensuring vapes continue to be made available to current smokers can be helpful in reducing smoking rate.

Health risks of using these products

773. Vaping is less harmful than smoking. However, given the potential health harms, vapes should only ever be used as a smoking quit aid.

774. The main ingredient of vapes that poses a health risk to young people is nicotine. When inhaled, nicotine is a highly addictive drug. The addictive nature of nicotine means that a user can become dependent on vapes when they use them regularly. Adolescent brains are particularly susceptible to the effects of nicotine.

775. Giving up nicotine can be very difficult because the body has to get used to functioning without it. Withdrawal symptoms can include cravings, irritability, anxiety, trouble concentrating, headaches, and other mental and physical symptoms.

[428] Action on Smoking and Health. 2024. Use of vapes (e-cigarettes) among young people in Great Britain.
[429] Action on Smoking and Health. 2024. Use of vapes (e-cigarettes) among young people in Great Britain.
[430] OHID. 2022. Nicotine vaping in England: 2022 evidence update.
[431] Boyce and others. 2022. Electronic cigarettes for smoking cessation
[432] Lindson and others.. 2023. Pharmacological and electronic cigarette interventions for smoking cessation in adults: component network meta-analyses
[433] Beard and others. 2019. Association of prevalence of electronic cigarette use with smoking cessation and cigarette consumption in England: a time–series analysis between 2006 and 2017.

776. There are also some health risks associated with the other ingredients in vapes. For example, propylene glycol and glycerine (components of e-liquids) can produce toxic compounds if they are overheated[434].

777. There is uncertainty about the scale and nature of long-term vaping harms. Not all the risks from vapes have been fully investigated, including inhaling additives for flavours, and the long-term effects of vaping are unknown, although further evidence will likely emerge in the future.

778. The main type of 'nicotine product' currently on the market are oral nicotine pouches. Pouches already on the market may deliver levels of nicotine much higher than regulated vapes. Evidence suggests that the release of nicotine from oral nicotine pouches is similar to, or faster than other smokeless tobacco (ST) products[435].

Vape and nicotine product vending machines

779. Vaping and nicotine products vending machines are machines which do not require operation by anyone other than their user. They can dispense vaping products to the users of machines. It is illegal to sell vape products to those under the age of 18. However, because of their automated nature, vape vending machines make purchasing of vapes easier for under-18s especially via proxy sales as there is often no immediate human oversight.

780. Currently, companies operate different machines with different methods of age verification. However, these may be susceptible to being bypassed by individuals as was the case with tobacco vending machines and this is particularly true of proxy sales. The intent of any action is to restrict the use of, and exposure to, vapes by young people and people who do not smoke.

781. A survey conducted by ASH[436], found that 6.6% of 11–17-year-olds who currently vape used machines as a source of vapes. Whilst this does provide some evidence that children are aware of these machines as a way to access vapes and that machines are being used by young people to purchase them, the sample is limited (213 respondents), and respondents are also likely to get their vapes from multiple sources not just machines.

782. There is limited evidence presented on the number and locations of vape vending machines, however it is suggested by online retailers[437] that they are currently predominantly placed in locations such as nightclubs, bars and pubs. It is anticipated that the market will develop further[438] and vape vending machines will become more prevalent in other locations such as supermarkets[439], train/bus stations and other locations accessible to under-18s.

[434] Komura and others. 2022. Propylene glycol, a component of electronic cigarette liquid, damages epithelial cells in human small airways.
[435] Aldeek and others. 2021. Dissolution Testing of Nicotine Release from OTDN Pouches: Product Characterization and Product-to-Product Comparison. Separations, 8(1), p.7
[436] Action on Smoking and Health. 2024. Use of vapes (e-cigarettes) among young people in Great Britain.
[437] For example, Vapehaus amongst other retailers claim their vending machines are tailored for nightclub locations. Accessed July 2024.
[438] Better Retailing. 2024. Exclusive: BAT's plans for vape vending machines in pubs revealed.
[439] The Grocer. 2021. Vape vending machines coming to UK grocery stores in trial.

783. Tobacco vending machines were banned in 2011[440]. The primary rationale for banning these machines was that they were an established pathway by which the tobacco industry could bypass age of sale laws and tobacco could be provided to under 18s. It is likely that the same considerations may begin to apply to vape vending machines, though it is important to realise that since 2011 these machines have become more sophisticated and may have more age robust age-verification software in place, although there is some evidence, as stated above, that children are still accessing vapes via these machines.

784. Whilst age verification has become more sophisticated, it is not a legal requirement to use the best possible methods of age verification, and we do not have data or evidence available on the proportion that do. Also, while there is more robust age verification software available, it does not prevent or enable any check on proxy purchasing given that there is no human element to check whether an over-18 may be accompanied by younger individuals.

785. It was suggested by the National Associated of Cigarette Machine Operators (NACMO) in the Impact Assessment for the prohibition on the sale of tobacco from vending machines[441] that 78% of cigarette vending machines were located in public houses, 10% located in clubs, 7% in hotels or restaurants, 3% in shops, 1% in bingo halls and 1% elsewhere. Despite this estimate being for cigarette vending machines, it could suggest that a similar trend could follow for a similar market in vape and nicotine product vending machines.

786. In addition, Local Authorities Coordinators of Regulatory Services (LACORS) collected data on test purchasing from tobacco vending machines in 2008/2009 and found that illegal sales were made at 58% of tobacco vending machines tested across England during this period[442]. Despite there being age-verification technology in place on some vape vending machines, the risk of proxy sales from these machines still exists, suggesting under-18s could still access vapes and nicotine products from vending machines.

787. We know that one of the main reasons children take up vaping is due to peer pressure[443]. It is therefore worth considering that instances of vape vending machines in easily accessible areas might be an enabler for those who would not otherwise seek out a vape or who would be deterred by having to speak to an adult.

788. Currently most vape vending machines dispense disposable vapes, however the market will likely adapt once vaping regulations are enacted and products are more rigorously controlled. British American Tobacco has already stated that they are “working on a product to sell out Vuse and Velo[444] brands via age-gated vending machines”[445] and are hiring for this project.

[440] Department for Health. 2012. Impact Assessment for the prohibition on the sale of tobacco from vending machines.
[441] Department for Health. 2012. Impact Assessment for the prohibition on the sale of tobacco from vending machines.
[442] Test purchasing conducted on 634 vending machines across England over 2008-09, using volunteer “test purchasers” aged 11-16 years old. As discussed in Department for health, 2012. Impact Assessment for the prohibition on the sale of tobacco from vending machines.
[443] OHID. 2023. Youth vaping call for evidence analysis.
[444] Vuse sell both disposable and reusable vape products and Velo sell nicotine pouch products.
[445] Better Retailing. 2024. Exclusive: BAT’s plans for vape vending machines in pubs revealed.

789. Vending machines can also be a source of advertising, promotion, and marketing of vapes and other nicotine products. Whilst the contents of machines will be regulated by the restrictions on vapes and other nicotine products that we bring forward in the Tobacco and Vapes Bill, the presence of the machines may allow for material which promotes vaping such as artwork and digital displays. The advertising restrictions we bring forth may capture some of these, but there will be the possibility for machines to be branded and feature artwork regardless. Article 13 of the WHO Framework Convention on Tobacco Control details a ban of all tobacco advertising, promotion and sponsorship. Guidance clarifies that vending machines constitute, by their very presence, a means of advertising or promotion. Whilst Article 13 does not include vapes, it could be logical that the same principles apply and that vape vending machines constitute a means of advertising and promotion.

790. Without government action to restrict vape vending machines, access to vapes through the bypass of age verification or proxy sales for those under the age of 18 could significantly increase in the future as forthcoming vape regulations make it harder for those under the age of 18 to access vapes. This could cause and increase in the uptake of youth vaping and could cause direct harms from the effects of nicotine.

Current vaping and nicotine product regulations

791. There are currently no restrictions specific to vape vending machines in England and Wales. However, they are subject to age of sale law which is currently 18 for nicotine-containing vapes. If the Tobacco and Vapes Bill receives Royal Assent, non-nicotine vapes, and other nicotine products will also be subject to age restrictions.

792. Scotland has banned vending machines selling nicotine and non-nicotine vapes since 2018 as set out in the Sale of Nicotine Vapour Products (Vending Machines) (Scotland) Regulations 2017[446] which were brought forward under Health (Tobacco, Nicotine etc. and Care) (Scotland) Act 2016[447].

793. Northern Ireland have regulatory making powers to bring forward restrictions on vending machines as set out in the Health (Miscellaneous Provisions) Act (Northern Ireland) 2016[448].

Rationale for government intervention

794. The ban of vaping and nicotine product vending machines are part of the Tobacco and Vapes Bill. The Bill includes a range of policies which have the aim of protecting children and non-smokers from the harms of vaping and the risk of nicotine addiction. The Bill will:

- introduce a minimum age of sale of 18 on non-nicotine vapes and nicotine products to align with nicotine vapes and to ensure they cannot be sold to children;

[446] The Sale of Nicotine Vapour Products (Vending Machines) (Scotland) Regulations 2017 (legislation.gov.uk)
[447] Health (Tobacco, Nicotine etc. and Care) (Scotland) Act 2016 (legislation.gov.uk)
[448] Health (Miscellaneous Provisions) Act (Northern Ireland) 2016 (legislation.gov.uk)

- ban the free distribution of vaping and nicotine products to anyone of any age;
- ban the advertising of vaping and nicotine products, and sponsorship agreements which promote them, to align with tobacco regulations; and

795. The Bill also provides government with regulation making powers to:

- restrict flavours, regulate point of sale display, and regulate packaging and product presentation for all vaping and nicotine products;
- make places that are smoke-free also vape-free; and
- strengthen existing product standards and improve the current vape notification system.

796. Government is best placed to intervene because:

- Information failures are present as young people are not able to make fully informed decisions when deciding whether to use vapes or other nicotine products.
- The danger of uptake in vaping and other nicotine products, for those who have never vaped or smoked prior, has unknown health implications. Vending machines may facilitate impulse purchasing, making it easier for individuals to buy vape products without considering the long-term implications.
- Vape vending machines may make it easier for underage individuals to access vaping and nicotine products. Despite there being age verification methods, these measures can sometimes be avoided or inadequately enforced.
- Ensuring that vape vending machines have adequate age verification can be challenging and there may be difficulties in monitoring and enforcing compliance effectively, leading to gaps in regulatory oversight.

Rationale and evidence to justify the level of analysis used in the impact assessment

797. The evidence base for the vape vending machine industry and the impact on vaping and nicotine products is limited. This could be due to vape vending machines being relatively new in the UK. Whilst other countries also have vape vending machines, there are limited international studies on the impact to draw upon.

798. There is limited evidence on other nicotine product vending machines. Whilst the evidence used in this analysis focuses predominantly on vapes being sold from vending machines, the impacts would also apply to other vaping products and nicotine products being sold from the machines.

799. The appraisal period used in this impact assessment is 10 years. We have used the default time horizon, as suggest by HMT Green Book[449] as we do not think there is rationale for extending the period in relation to this intervention, as the long-term

[449] HMT. 2022. The Green Book: appraisal and evaluation in central government.

impacts of the products in scope are unknown. In addition, some cost estimates in the impact assessment are based on limited historic data. Projecting these figures beyond a 10-year appraisal period is likely to decrease the robustness of the estimates. We expect the majority of the non-monetised benefits to arise within the appraisal period, however we are uncertain on when the health gains to individuals may arise and therefore, they could also arise outside of the appraisal period.

800. Due to the limited evidence base, we have had to make assumptions in our analysis to provide monetised impacts. We have clearly outlined where assumptions have been taken and where uncertainty exists.

801. We have not been able to test several of our assumptions with stakeholders. This is partly due to the timescales at which the analysis has needed to be produced, the fact that this is not yet public policy, as well as due to Article 5.3 of the World Health Organisation's Framework Convention on Tobacco Control (FCTC), which protects public health policy from the vested interests of the tobacco industry that has known financial interest in vape vending machines. To test the assumptions, we have provided thorough quality assurance and sensitivity analysis to provide a robustness check and show their influence on the quantified costs and benefits.

802. Where possible and in the absence of other data on vape vending machines, we have used data on cigarette vending machines, as a proxy market. However, evaluation evidence on the cigarette vending machine ban is limited, as it formed part of a larger package of measures. This has meant it has not been possible to use data or evidence from evaluations of the cigarette vending machine ban to inform this impact assessment.

803. Whilst the measures proposed aim to tackle youth vaping, given limited evidence it has not been possible to separate out potential impacts between young people and adults and their current use of vape vending machines.

804. When developing the evaluation, we will consider where data can be collected to improve the evidence base in this area.

Policy options

Policy objective

805. Ultimately this policy will contribute to the overall aim of reducing youth vaping. This is a preventative measure with the aim of preventing children from accessing vaping and nicotine products by circumventing age of sale and proxy sales laws by utilising vape vending machines. A secondary aim is to prevent the advertising and promotion of vapes via vending machines.

806. As a result of the intervention, vaping product, nicotine product and cigarette paper vending machines will no longer be present in the UK. This will remove an avenue by which age of sale and proxy sale restrictions can be overcome. Indicators of success will be an overall reduction in youth vaping. However, this is part of an overall package

of youth vaping restrictions that are being developed and brought in and this specific ban is intended to support those restrictions rather than being a stand-alone intervention.

Cigarette papers

807. The government's aim to break the cycle of addiction and disadvantage by introducing a smoke-free generation policy, gradually ending the sale of tobacco products across the country. Cigarette papers have been added to the smoke-free generation policy and other measures due to the harmful nature of smoking and will also be included in the vending machine ban.

Description of options considered

808. Two policy options (Option 1 and Option 2 below) have been considered in this Impact Assessment, which are either maintaining the current position for vaping and nicotine product vending machines and cigarette paper vending machines, or a full ban of them.

809. The following options were previously considered but discounted:

- **Restrict where vape vending machines can be operated to age restricted over-18-premises:** By making it an offence to locate a vape vending machine anywhere that is not age-restricted, this would remove most instances of where under-18s could access these machines.

  However, if under-18s were able to access the premises then they would be able to access the vending machine.

  This option would not tackle the issue of proxy sales from vending machines, it would still be easy for a proxy sale to occur without any staff sight of the sale from the machine. This option may also reduce advertising and exposure to vapes via the vending machine itself to under-18s.

- **Mandate age specific age-verification software (e.g. biometric):** There are various methods of age-verification, some more reliable than others. By regulating to mandate specific forms of age-verification software, or setting a duty to use the most effective, it may be possible to ensure that the instances of under-18s fooling the vending machines would be minimal. For example, the use of biometric scanning and legal I.D. (like an e-passport gate) could be mandated, which might be difficult to fool.

  However, this approach would require a lot of technical knowledge to enforce and does not solve the issue of proxy sales from vending machines. This option might also be difficult to future-proof as methods of age-verification will continue to change.

- **Restrict both the location of vape vending machines and mandate age specific age-verification:** By combining options 3 and 4 above, vending machines would both only be available in over-18 premises and would have mandated specific age-verification systems.

However, this would still be difficult to enforce and does not solve the issue of proxy sales from vending machines.

810. These options were considered but were discounted due to not meeting the objectives, therefore they have not been considered in this Impact Assessment. The primary reason for not taking these options forward is that they do not remove the risk of individuals using machines for proxy purchasing. Even if machines were restricted to over-18 premises those over the age of 18 could quickly access potentially unsupervised machines in areas like pubs, gambling establishments, and nightclubs and commit proxy purchases, they may have to verify their age with a human at the door but likely would not have to do so again – whilst this is more of a deterrent than non-age restricted premises it is still easier than proxy sale from a staff member who has opportunity to pick up on the potential offence being committed. In addition, the presence of machines contributes to promoting, advertising, and normalising vapes and this would still be the case under these options.

811. The options that have been considered include:

Option 1: Do nothing

812. In this option there would continue to be no specific restrictions to vaping product, nicotine product and cigarette paper vending machines in England, Wales, but vape vending machines will still be subject to age of sale restrictions for nicotine vapes. Scotland have already banned vending machines selling nicotine and non-nicotine vapes and that would continue. Northern Ireland have regulatory making powers to bring forward restrictions on vending machines and could still enact this themselves through regulations.

813. Vape vending machines could enable young people to obtain vapes and nicotine products through bypassing age verification methods or through proxy sales.

814. Therefore, keeping restrictions as they are would not achieve the policy objectives or tackle the challenge of vapes and nicotine products being accessible to children and young people, so this option was discounted.

Option 2: Full ban of vape and nicotine product vending machines and cigarette paper vending machines

815. This would make it an offence for anyone to have management or control of premises on which there is available a vending machine to sell vaping products, nicotine products or cigarette papers, in effect banning the use of these machines.

816. For Scotland, it would only be an addition of banning cigarette paper vending machines. For England, Scotland and Wales, there would then be a full ban in place for the aforementioned products.

817. This would stop all instances of illegal proxy sales and underage sales conducted through vending machines. It would also prevent the promotion of vapes via the vending machine itself and would contribute to a denormalisation of vaping.

Summary of preferred option with description of implementation plan

818. The preferred option is Option 2, a total prohibition on vaping product, nicotine product and cigarette paper vending machines. This option will be given effect through primary legislation and there will be a six-month implementation period for businesses to adapt and remove these machines following royal assent to the Bill. These machines do not require any staff oversight and thus enable much easier proxy sales to those under the age of 18 as well as the potential in some cases for under-18s to bypass less robust age verification systems.

819. Local Authority Trading Standards in England and Wales can prosecute anyone found to have an available vaping or nicotine product vending machine on their premises, which can result in courts imposing a fine of up to £2,500. The same offence and fine exists in Scotland. In Northern Ireland, enforcement is conducted by District Councils and the fine for this offence is £5,000.

820. In a case where someone is found to have repeatedly committed vending machine-related offences (or age of sale offences), Local Authority Trading Standards in England and Wales can apply for a restricted premises or restricted sales order which, when imposed by a court, prohibits the sale of relevant products (tobacco, vaping and nicotine products) from a given premises or by an individual, for up to one year.

Monetised and non-monetised costs and benefits of each option (including administrative burden)

821. Where possible, the costs and benefits of policy options have been monetised. However, data for vapes and other nicotine products remains limited and therefore assumptions have been taken to estimate monetised impacts. Where it is not possible to estimate impact, non-monetised benefits have been used.

822. If monetised, estimates will be displayed in real 2024 prices and discounted in line with HMT's Green Book[450]. As outlined in paragraph 799, monetised impacts will be measured over a ten-year appraisal period.

823. In the absence of evidence and intelligence on the supply chain of vapes and nicotine products, where we have estimated the impact of the policy on business, we have assumed a simplified supply chain route of UK manufacturer, to UK wholesalers, to UK retailer. In practice this route may not be taken, and other parties, such as importers, re-branders, or manufacturers outside of the UK may be involved.

824. This adds uncertainty to our estimates on the cost of business. However, for manufacturers we believe this will be an overestimate if we assume all impacts on vapes sales will be felt by UK firms, when in practice some of this will be impacting manufacturers outside of the UK. For example, from MHRA intelligence and their notification data, it is estimated that China (47%) and the UK (34%) make up c. 81% of the nicotine product producers registered with MHRA. Additionally, we may not be accounting for the impacts on other potential stages in the supply chain.

[450] HMT. 2022. The Green Book: appraisal and evaluation in central government.

Option 1: Do nothing

825. There are no additional costs or benefits from implementing Option 1 as there would be no additional restrictions on vape vending machines.

826. However, as outlined in paragraph 782, it is anticipated that the vape vending machine market will develop further. This could mean that there is an increase in the number of vape vending machines and/or vape vending machines are in a wider range of locations. If this is the case, it is likely that young people will have more access to vapes and other products via vending machines and proxy sales.

827. Given there is limited evidence and significant uncertainty on how the vape vending machine market would develop without intervention, we have not quantified how the market would develop under Option 1.

Option 2: Ban on vape vending machines

828. The costs and benefits of this option were identified through production of a logic model which can be found in Annex .

Table 63: Summary of costs and benefits of ban on vape vending machines (Option 2), 2024 prices, 2024 present value

Stakeholder		Impact	Cost/Benefit	Quantified	Estimate	In NPV	In EANDCB
Population of vapers	**1**	Reduction in vape litter	Benefit	No	**-**	No	No
	2	Loss of consumer surplus	Cost	No	**-**	No	No
Wider social gains	**3**	Reduction in recycling vapes	Benefit	No	**-**	No	No
	4	Reduction in healthcare costs	Benefit	No	**-**	No	**N**o
	5	Reduction in social care costs	Benefit	No	**-**	No	No
	6	Reduction in fire	Benefit	Yes	£3.3m	**Yes**	**No**
Vending machine host sites (nightclubs, bars, supermarkets etc).	**7**	Familiarisation	Cost	Yes	£0.05m	**Yes**	**Yes**
Vape vending machine businesses	**8**	Familiarisation	Cost	Yes	£0.00m	**Yes**	**Yes**
	9	Transition cost	Cost	Yes	£0.02m	**Yes**	**Yes**
	10	Stock costs	Cost	No	**-**	**No**	**No**
	11	Disposal costs	Cost	Yes	£1m	**Yes**	**Yes**
	12	Loss of value of machines (asset value)	Cost	Yes	£35m	**Yes**	**Yes**
Vape, retailers, manufacturers, and wholesalers	**13**	Loss of profits due to fewer vapers	Cost	Yes	£1,065m	**Yes**	**Yes**
Local authorities	**14**	Enforcement costs	Cost	No	**-**	**No**	**No**

Estimating market size

829. This section sets out the expected costs and benefits from banning the sale of vapes and nicotine products from vape vending machines and where possible provides indicative estimates.

830. The potential impact of banning the sale of vapes and nicotine products from vending machines would be a reduction in the number of people taking up vaping and a reduction in the total number of people vaping.

831. Given the vape vending machine market is relatively new and the policy acts as a preventative measure for future vape uptake from vape vending machines, there is significant uncertainty estimating the proportion of people that would be impacted by a ban of vape vending machines. Based on desk research[451] the current market can be split into three different business types:

- **Vape vending machine manufacturers**: Businesses that sell and manufacturer vape vending machines to vape vending machine distributors. We have assumed these businesses are predominantly located outside of the UK[452].

- **Vape vending machine distributors**: Specific companies set up to sell, loan or use a profit-sharing business model with host venues.

- **Vape vending machine host venues**: Venues such as pubs, bars or clubs that either purchase a vape vending machine or more commonly enter a profit-sharing agreement with a vape vending machine distributors. This agreement typically means the machines are free for host sites and they receive 30% of the revenue, while the distributor gets 70% of the revenue.

832. Within this market structure vapes can then be purchased from retailers and wholesalers to be sold from the machines. Based on our understanding, it is typically the owner of the machine (the vape vending distributor who controls the stocking of the machines).

833. Banning the sale of vapes and other nicotine products from vape vending machines would likely only impact a small proportion of people that currently vape, as we assume that currently only a small proportion of the total vapes purchased are from vape vending machines. However, as stated we also anticipate the market to grow without action in the context of other measures, meaning the impact of the measures in the future would be higher.

834. The Centre for Economic and Business Research (CEBR) produced a report for the United Kingdom Vaping Industry on the Economic Impact of the vaping industry[453]. The report estimated that 2% of respondents used 'other physical retailers' as the preferred spending avenues to purchase vaping products in 2021. In the absence of additional

[451] Desk research conducted by DHSC in July 2024, included reviewing information on 28 different vape vending machine websites.
[452] Based on DHSC desk research conducted in June 2024, vape vending manufacturers appear to be located outside of the UK. For example, Avangard Fusion Vending is a manufacturer based in Ukraine and Reyeah is located in China. Accessed June 2024.
[453]CEBR for UKVIA. 2022. Economic impact of the vaping industry.

data, we use the 2% assumption as a proxy for the percentage of vapes purchased through vape vending machines.

835. We recognise that this 2% could also be inclusive of other physical stores not otherwise specified in the survey question (e.g. market stalls) and that the preference of vapers to purchase vaping products may not directly translate to the proportion of vapes purchased through vending machines and hence the size of the vape vending machine market.

836. The Tobacco Vending Machine Impact Assessment[454] estimated that tobacco vending machines accounted for 1% of UK tobacco sales. Throughout the analysis we have applied the 2% assumption but have conducted sensitivity analysis with the 1% assumption. Throughout, we recognised that there is still uncertainty.

837. Based on DEFRA consumption estimates, outlined in paragraph 417, we estimate total revenue to be £4.7bn in 2024. This includes uplifting the value by 50% to account for non-disposable vapes. By applying the 2% to total revenue, we calculate £94m of sales comes from vending machines.

838. CEBR also estimated total revenue of the vape industry to be £1.3bn in 2021[455], which is lower than our estimated figure. However, data from 2021 is unlikely to capture the significant rise in consumption of disposable vapes and hence may underestimate the size of the market.

Number of vape vending machine host sites

839. We have not been able to identify existing evidence on the number of vape vending machine host sites or the existing number of vape vending machines in operation. Therefore, to calculate the number of vape vending machine hosts, we have used the estimated total value of sales from vape vending machines and divided this by the average revenue earned by host venues.

840. From desk research, we have calculated an average revenue of £8,900 per annum for vape vending host sites[456].Therefore, dividing the total revenue for vape vending machines (£94m in 2024) by the average revenue earned per hose site, allows us to calculate an illustrative figure of 10,547 venues in the UK with vape vending machines.

841. From initial research, it seems that most vape vending machines are in clubs, pubs and bars. The estimated 10,547 host venues would make up 29% of the total 36,630 licensed bars and pubs in the UK[457]. As explained in paragraph 782 it is likely that in the future vape vending machines are also located in other locations. However, we do not have evidence on how the vape vending machine market will develop over time.

[454] Department for Health. 2012. Impact Assessment for the prohibition on the sale of tobacco from vending machines.
[455] CEBR for UKVIA. 2022. Economic impact of the vaping industry.
[456] Average revenue is based on desk research conducted by DHSC in July 2024 figures quoted at 5 different vape vending distributors ranging from £7,800-£10,000 per annum.
[457] NOMIS. 2023. UK Business Counts- enterprises by industry and employment size band.

842. In the absence of additional evidence, we also assume that hosts venues typically have one vending machine, meaning that the total number of vending machines in operation is 10,547.

Number of vape vending machine distributors

843. There is limited evidence on the number of vape vending machine distributors in the UK. Initial desk research, detailed in Annex , identified 28 UK based vape vending machine distributors. However, we expect that the number of vape vending distributors businesses exceeds this amount and is also likely to grow in the future without any intervention.

844. In addition, a memorandum by The National Association of Cigarette Machine Operators (NACMO) stated that they had 60 members who manufactured and operated cigarette vending machines in 2010[458]. This can provide a proxy for the potential number of vape vending machine distributors / operators in the vape vending market. As such, we use 60 as our assumption when modelling the impact on the market.

845. Given vape vending machines are a relatively new and the market has grown more significantly as a result in the rise of vaping, the potential impacted audience would continue to grow as vape vending machines are rolled out in more premises in the UK, including non-age restricted premises.

846. As we expect the vaping market to grow and in turn the number of vape vending machine distributors to grow in the absence of any interventions, we consider the number of distributors identified in our desk research, 28 (noted in Annex), to be an underestimate. As a result, we consider using the number of members of NACMO in 2010, when the tobacco cigarette vending machine market was a mature market, to be an appropriate proxy for the number of distributors in the vape vending market for our analysis.

Monetised costs

Familiarisation costs

847. As a result of Option 2, we expect vape vending machine distributors and vape vending machine hosts to have to spend time familiarising themselves with the legislation.

Vape vending machine distributors

848. Vape vending machine businesses would be required to familiarise themselves with the new prohibition. There would be guidance issued which vape vending machine distributors would have to spend time reviewing.

[458] NACMO. 2009. Memorandum submitted by The National Association of Cigarette Machine Operators ("NACMO") (H 14)

849. The total cost to vape vending machine distributors to review the guidance is estimated by multiplying the number of vape vending machine businesses in the industry by the employee time it would take to review the guidance and the median hourly wage.

850. As discussed in paragraph 844, based on the cigarette vending machine market, we assume that there are 60 vape vending machine distributors in the market.

851. We also assume that there would be one person per firm to familiarise themselves with the legislation. In practice there may be additional staff members who are required to familiarise themselves with the legislation after the manager has reviewed the documentation. To account for any additional time taken, we have also considered transition costs involved with the vending machine ban being implemented.

852. The estimated time taken for managers to familiarise themselves with the legislation is based on the typical technical text reading speeds (75 words per minute[459]). Based on similar guidance[460] that already exists and was issued for the Protection from Tobacco (Sales from Vending Machines (England) Regulations 2010[461], we would expect the new guidance that businesses must review to be about 1500 words, and we assume it would take 0.3 hours to read the guidance.

853. ONS' Annual Survey of Hours and Earnings (ASHE)[462] provided a median hourly wage for managers and directors in retail and wholesale of £15.58. Adjusting this hourly wage for 2024 prices using GDP deflators[463] and by 19% to account for non-wage labour costs[464], the estimated hourly wage for a manager for a vape vending machine company is £18.50.

854. Based on this data the indicative estimate of the one-off cost to vape vending machine distributors to familiarise themselves with the new prohibition on the vape vending machines is £376. In 2024 present value the cost is £351.

Vape vending machine host sites

855. We would also expect that vape vending machine host venues (i.e. venues that currently have a vape vending machine) would also be required to familiarise themselves with the new law to ban the sale of vapes and nicotine products from vending machines. To estimate this cost, we use the same assumptions for the time it would take to review the guidance as for distributors 0.3 hours.

856. There is a lack of evidence in the exact number of host venues currently located in the UK. As explained in paragraph 840, we have estimated the number of potential venues

[459]EFTEC. 2013. Evaluating the cost savings to business from revised EA guidance – method paper as quoted in BEIS. 2017. Business Impact Target. Appraisal of guidance: assessments for regulator-issued guidance.
[460] Local Government Regulatory Support Unit and Department of Health. 2011. Guidance on sale of tobacco from vending machines
[461] The Protection from Tobacco (Sales from Vending Machines) (England) Regulations 2010 (legislation.gov.uk)
[462] ONS. 2023. Annual Survey of Hours and Earnings (ASHE) - Office for National Statistics (ons.gov.uk)
[463] HMT.2024. GDP deflators at market prices, and money GDP
[464] Based on non-wage labour costs as a percentage of total labour costs. ONS estimated that the value of labour costs was estimated at £22.80 per hour at whole economy level and wage costs contributed £19.20, with non-wage costs, such as pensions and National Insurance contributions, making up the rest. Based on this estimate we have uplifted wage costs by 19% to account for non-wage costs. ONS. 2020. Index of Labour Costs per Hour, UK: July to September 2020

to be 10,547, by dividing the estimated total sales of vapes from vending machines (£94m) by the average revenue for a host venue (£8,900)[465].

857. It is assumed that the guidance would only be read by the managers of the host venues. We do not expect that other employees in the venue would be required to familiarise themselves with the guidance as it will be the managers that are most likely to be responsible for ensuring that products in their venues are compliant with the new law.

858. We have assumed that vape vending machines are predominantly located in bars and clubs so have used the ONS Annual Survey of Hours and Earnings (ASHE) median hourly wage for catering and bar managers of £12.82. Adjusting this hourly wage for 2024 prices using GDP deflators and by 19% to account for non-wage labour costs, the estimated hourly wage for a manager for a host venue is £15.22.

859. Based on this data, the estimate of the one-off cost to existing host venues to familiarise themselves with the new law is £54,335. In 2024 present value the cost is £50,722.

Vape vending machine manufacturers

860. Based on desk research, and as mentioned in paragraph 831 we assume that vape vending machine manufacturers are likely to be based outside of the UK[466]. It is therefore unlikely that any familiarisation costs will occur domestically for vape vending machine manufacturers. As a result, familiarisation costs to vape vending machine manufacturers has not been monetised and not included in the NPV or EANDCB.

861. However, should there be a significant number of vape vending machine manufacturers operating in the UK, it is likely they will have to familiarise themselves with the new legislation and will incur costs of doing so similar to that of vending machine distributors.

Vape retailers, wholesalers and manufacturers

862. There is a lack of evidence to suggest vape retailers, wholesalers and manufacturers are directly involved in the vending machine market unless they operate, distribute or manufacture vape vending machines themselves. From the desk research outlined in Annex , vape retailers, wholesalers and manufacturers did not appear to be directly involved in the vape vending machine market. Vape vending machine distributors are often responsible for restocking the machines. Therefore, familiarisation costs have not been considered for vape retailers, wholesalers and manufacturers.

Transition costs

863. As a result of the ban, it would end all turnover from vape vending machines and cease operations in the vape vending machine industry. Businesses solely operating to sell or distribute vape vending machines would have to close their operations or where possible diversify. As a result of this we anticipate that there would be cost to these businesses of doing so.

[465] Based DHSC desk research conducted June 2024.
[466] Based on DHSC desk research conducted in June 2024, vape vending manufacturers appear to be located outside of the UK. For example, Avangard Fusion Vending is a manufacturer based in Ukraine and Reyeah is located in China. Accessed June 2024.

864. There would be some cost inherent in the retraining/reconfiguration of labour used by the vape vending machine industry, so that is could instead be used elsewhere in the economy. The geographical distribution of the jobs involved is wide and due to a lack of data is challenging to estimate the number of redundancies as a result of these businesses closing their operations. In addition, there is also likely to be redeployment as many of the employees will be able to find alternative work.

865. It should also be considered that there will be transition costs to the vape vending machine distributor businesses because of the new law. Transition costs may include organising the resale or disposal of the vending machines, closing the proportion of their business focused on vape vending machines and redistributing resources elsewhere in the business where applicable. In the absence of evidence, on how long it takes, we have costed an illustrative impact of 2 working days to take the relevant actions listed on GOV.UK[467]. Applying this assumption to the wages outlined in paragraph 853, we have estimated transition costs of £18,000. In 2024 present value the cost is £16,800.

866. However, in practice it may take longer than 2 working days for businesses to cease operations or diversify. Therefore, if it takes businesses longer, total transition costs will be higher.

Disposal costs

867. When the ban is implemented, both vape vending machine distributors and vape vending machine host venues will need to dispose of the existing vending machines. Given a large proportion of businesses are in a profit-sharing business model and the machines are predominantly owned by the vape vending distributors, we assume that any disposal costs will be on the distributors.

868. Vending machines typically have a lifespan of 10-15 years[468]. We have assumed that any disposal costs would be brought forward instead of there being an entirely new cost of disposal for businesses. Given vape vending machines seem to be relatively new, and we are assessing the policy over a 10-year appraisal period, we have assumed that the disposal has been brought forward by 10 years. We have estimated a real cost of capital of 6%, based on a nominal cost of capital of 8%.[469]

869. Disposal costs of vending machines in general depend on the business location and the method of disposal used. Large electronic items can be disposed of through private companies based on quotes, through local councils or disposed of for free through some recycling companies[470]. Councils are likely to be the most expensive of these options, with Wandsworth Council, as an example, quoting a £216.50 disposal fee[471] for

[467] Closing a limited company - GOV.UK (www.gov.uk)
[468] Vending Sense. The Importance of Vending Machine Maintenance. Accessed July 2024.
[469] The nominal cost of capital is based on the lifespan of vending machine of 12.5 years and cost of vending machine of £2,977. Depreciated would equate to £238 per year (~ 6%).
[470] For example, Vendtrade. (Vending Machine Removal | Vendtrade). Accessed July 2024.
[471] Some disposal companies, such as Vendtrade,(Vending Machine Removal | Vendtrade) offer free disposal if significant parts of the machines can be recycled. Other methods of disposal include private companies which operate on a quotation basis or recycling by local authorities. Vending machines would be classified as waste electrical and electronic equipment (WEEE). As an example, Wandsworth council charge £216.50 for collection and disposal of fridge/freezers, which would likely be similar cost to a vending machine.

a similar type of electronic item. To calculate the disposal costs we have used the midpoint of these costs of £83.47.

870. Given these assumptions, and assuming there are currently 10,547 vape vending machines at host venues, the total cost of bring disposal forward for vending machine distributors is £880,000. In 2024 present value the cost is £822,000.

871. However, this could be an underestimate as distributors may also have a stock of vending machines that have not been deployed to host venue sites that would also need to be disposed. Modelling a hypothetical 20% increase in the total number of machines in operation to include stock held by distributors would bring the total number of vape vending machines to 12,656. The total disposal cost of disposing of all machines would be £1.06m. In 2024 present value the cost is £0.99m.

872. However, it should be noted that there may be a possibility that vape vending machines can be sold abroad on the second-hand market, which would prevent the disposal cost from being incurred and allow some of the asset value to be recouped. We do not have data on the proportion of machines that would be sold on the second-hand market therefore our disposal costs may be an overestimate of the true impact.

873. When applying the 20% stock assumption, we consider that business would not hold a significant number of vending machines due to storage costs when having excess stock and potentially having uncertain demand. However, we do also recognise that businesses may hold some stock of vending machines due to potential bulk purchasing of machines from abroad at a discount and having stock ready to deploy to host sites. In practice, sites may hold more or less stock than we have modelled.

Asset value

874. Similar to the Tobacco vending machine impact assessment[472], we have considered an asset value loss. There will be a loss in asset value incurred by any vending machine owners (i.e. predominantly vape vending machine distributors). The rationale for this cost is that the value of the vending machines will be lost as a result of the ban.

875. As previously discussed, we assume there are currently 10,547 machines in host venues in the UK. Online research indicated that the cost of vape vending machines ranges from £2,200-£3,900, depending on the size and specification of the machine. In calculating the asset value, we have calculated an average of £2,977[473].

876. Multiplying the asset value by the number of machines produces a total one-off cost of £31.4m. In 2024 present value this is equal to a cost of £29.3m.

877. Again, applying a 20% uplift to the number of machines to account for machines that are not currently in premises but may be held by distributors. The potential impact would be £37.7m. In 2024 present value this is equal to a cost of £35.2m

[472] Department of Health. 2012. Impact Assessment for the prohibition on the sale of tobacco from vending machines.
[473] Average cost of vape vending machine estimate based on 8 different specifications of models from 4 different companies. Desk research conducted by DHSC, July 2024.

878. As discussed in paragraph 873, there may be a possibility for vending machines to be resold on the second-hand market, which could prevent some of the asset loss. If this is the case the asset value loss may be an overestimate, however we have not been able to identify existing evidence on the extent to which asset value will be recouped.

Reduced profits for vape retailers, manufacturers and wholesalers

879. As a result of Option 2 we expect sales of vapes to reduce, and consequently profits to fall for each stage of vape supply chain. We have assumed the supply chain to be retailers, wholesalers, and manufacturers within the UK.

880. To estimate the cost to business, we have estimated it in the following way:

A. Estimate the counterfactual sales and business profits as in paragraphs 415 to 436 . Within this we have estimated the sales cost and profit margins at each stage of the supply chain.

B. Identify the percentage of reduced sales expected from a ban on vending machines.

C. Apply the percentage sales reduction to the counterfactual scenario.

D. Multiply reduction in sales by sales costs and profit margins of businesses. 415415415436

A. *Counterfactual sales and business profits*

881. As outlined in paragraphs 415 to 436, in the counterfactual we project disposable vape sales to be 10.8bn over the appraisal period. The number of sales is not equivalent to total vape sales expected in the market as it does not include non-disposable vapes. However, from inflating the profits by to account for non-disposable vapes being 50% of the market we are able to estimate profit to businesses of all vapes to be £53bn in total over the appraisal period (£41bn for retailers, £6bn for wholesalers, and £7bn for producers).

B. Identify the percentage of reduced sales expected from a ban on vending machines

882. We have found limited evidence on the percentage of reduced sales because of a ban on vape vending machines. There is also a lack of evidence from the ban of cigarette vending machines on the percentage of reduced sales because of cigarette sales, which could be used as a proxy market. This is due to multiple policies being implemented at the same time. However, as outlined in the Tobacco vending machine Impact Assessment[474], it was estimated that tobacco vending machines accounted for 1% of the UK market tobacco sales.

883. In the absence of data on vape vending machines, we apply a 2% reduction in the consumption of vapes will occur as a result of the vape vending machine ban. This based on The Centre for Economic and Business Research (CEBR) report for the

[474] Department for Health. 2012. Impact Assessment for the prohibition on the sale of tobacco vending machines.

United Kingdom Vaping Industry on the Economic Impact of the vaping industry[475]. As outlined in paragraph 834, the report estimated that 2% of respondents used 'other physical retailers' as the preferred spending avenues to purchase vaping products in 2021. We assume that a maximum of 2% of vapes would therefore be purchased from vape vending machines as vending machines are not included in any other category in this survey. This also assumes that the preferences of where vapes are purchased translate to the proportion of vapes purchased.

884. In the absence of additional evidence, we must also consider:

- Not all of the 2% outlined in the CEBR report may be from vape vending machines. 'Other physical retailers' is likely to include other stores not otherwise specified in the survey.
- The preferences of where vapes are purchased may not translate to the proportion of vapes purchased.
- There may also be a replacement rate at which, if vape vending machines are banned, individuals may instead purchase their vapes from other retailers. This would likely reduce the impact size.

885. We recognise that there is significant uncertainty, therefore we have also considered a 1% reduction (using the assumption from the tobacco vending machine impact assessment[476]) and 0.5% reduction in vape consumption. Details of this are outlined in paragraph 951.

C. Apply the percentage sales reduction to the counterfactual scenario

886. Taking the projected number of disposable vapes in step A and applying an assumed 2% reduction in sales in step (B) as a result of a ban on vending machines, we can estimate the difference in disposable sales a result of Option 2.

887. It should be noted that because we only have projections for disposable vapes, rather than all vapes, we only apply the 2% assumption to those projected sales. However, in the counterfactual explained in paragraph 434, once we translate disposable vape sales to profits, we uplift this figure to account for non-disposable vapes representing 50% of the market (outlined in step D). This will mean we are assuming disposable and non-disposable vapes have the same unit costs, profit margins, and are consumed in equal number. At this time, we do not have data on the unit costs, or profit margins, of non-disposable vapes to be able to comment on whether a 2% reduction in consumption as a result of a vending machine ban would lead to a different impact on businesses profit than disposable vapes.

888. In addition, it is not possible from this analysis to estimate who these reduction in sales would come from in terms of adults or children. If some of these reduced sales are reduced sales of nicotine vapes to under 18s, this would be that costs estimated would

[475]CEBR for UKVIA. 2022. Economic impact of the vaping industry.

[476] Department for Health. 2012. Impact Assessment for the prohibition on the sale of tobacco vending machines.

include reduced profits from illegal sales. Whist the HMT Green Book[477] advises not to include lost profits from current illegal activity, we are not able to establish who is reducing their sales, and whether these are sales of nicotine or non-nicotine vape (which are legal for under 18s to purchase).

889. Additionally, we are not able to estimate whether this reduction in sales would translate to reduced prevalence in terms of absolute number of vapers.

890. Applying this 2% annually across the ten-year appraisal period would mean we are assuming the impact of a vending machine ban on consumption behaviour is immediate and does not have a staggered impact affect. Applying an immediate effect will ensure we do not underestimate the potential cost to industry over the appraisal period, however in practice it could take time to reach maximum impact.

Table 64: Reduction in number of disposable vape sold under Option 2

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Total
Reduction in disposable vape sold (m)	12	14	16	18	21	23	25	27	29	30	215

D. Multiply reduction in sales by sales costs and profit margins of businesses.

891. Multiplying the estimated reduction in vape sales in step (C) by sales prices, profit margins of businesses and uplifting to account for 50% of the market being non-disposable vapes, we can estimate the reduction in profits to business.

Table 65: Profit loss under Option 2, 2024 price base year, 2024 present value, £m

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Total
Retailer	55	62	69	75	81	87	92	96	98	100	1,042
Wholesaler	8	9	10	11	12	13	13	14	14	15	153
Producer	9	10	11	12	13	14	15	15	16	16	168
Total profit	**72**	**81**	**90**	**98**	**106**	**114**	**120**	**125**	**128**	**130**	**1,065**

892. As stated in paragraph 823, this analysis is only indicative because we are assuming that the supply chain of all reduced vape sales has followed a pathway from UK producers to UK wholesalers, to UK retailer. In practice, this may not be the supply chain pathway and vapes may not all follow the same pathway. For example, it is unlikely that the reduced sales would only impact vapes manufactured in the UK, and any potential profit losses to non-UK based manufacturers would be out of scope of this impact assessment according to Green Book[478] guidance. It could therefore be the case that the calculated cost to the sector as a result of Option 2 is an overestimate.

893. Additionally, as stated in paragraph 888, this could be an overestimate by including reduced profits of current illegal sales of nicotine vapes to Under 18s. Given we are not able to establish who the reduced sales could come from, we are assuming this is a

[477] HM Treasury. 2022. The Green Book: appraisal and evaluation in central government.
[478] HM Treasury. 2022. The Green Book: appraisal and evaluation in central government.

maximum cost to businesses, which may be lower if we could exclude the existence of illegal sales from our counterfactual.

894. It is also likely that any loss in profits will at least in part be offset by increase profits on goods and services purchased in place of vapes.

895. It should also be noted that reduced profit may indirectly lead to a reduced direct tax liability for businesses. Given this is an indirect impact we have not monetised this, however it should be noted that this could offset the impact on businesses to a small extent.

Economic transfer: VAT transfer

896. As estimated above, as a result of this policy option, it is estimated that there will be an approximated £2.3bn lost retail revenue over the ten-year appraisal period. Based on a VAT rate of 20%, we can estimate a tax value of approximately £386m. In 2024 present value this is equal to £302m.

897. This provides an indicative estimate of the value of the VAT, however there may be differences in VAT across the supply chain.

898. However, this reduction in tax revenue represents a transfer from the government collecting the revenue to the people in society previously paying the tax. The people that no longer vape or reduce the amount they vape because of this policy benefit from an increase they can spend on other goods and services, and the government loses an equal amount they can spend. Therefore, this reduction in tax revenue does make society as a whole better or worse off. On this basis and in line with HMTs Green Book, the reduction in tax revenue has not been included in the NPV. It also has no impact on businesses so has not been included in the EANDCB.

Non-monetised costs

899. Due to the limited evidence base for vapes and other nicotine products, it was not possible to quantify all the expected societal costs. The non-monetised costs include:

- Stock costs for businesses that must sell or dispose of vapes
- Enforcement costs
- Consumer surplus
- Health impacts of fewer people using vapes and other nicotine products to quit smoking
- Reduced profits to businesses from reduced sales of nicotine products and cigarette papers.

Stock costs

900. Another cost that businesses may incur is stock costs as it is possible that they may have to dispose of or resell vape products. It is noted in paragraph 818, that there would likely be a six-month implementation for businesses to adapt to the policy.

901. Based on desk research of the businesses listed in Annex vape vending machines can hold between 80-6,000 vape products. Therefore, the impact will differ depending on the size of the machine for each of the premises and the footfall at the specific location. However, we judge that the six-month implementation period would be sufficient time to sell on any remaining stock, so a significant cost would not be incurred by businesses.

Enforcement costs

902. Any restriction on vape vending machines could require additional enforcement activity to ensure that vape vending machines do not remain in use. Local Authority Trading Standards in England and Wales would be responsible for prosecuting anyone found to have an available vape or nicotine product vending machine on their premises. The same offence exists in Scotland. In Northern Ireland, enforcement is conducted by District Councils.

903. We have assumed that any enforcement activity be incorporated into existing roles so there will be no additional cost for enforcement. There may be some familiarisation costs involved, however we consider these to be negligible given the existing activities of the local authority trading standards.

Consumer surplus

904. Banning vape vending machines will likely result in lost utility to vape vending machine users. It is likely that using vending machines is convenient for consumers, when purchasing vapes. We would not value consumer surplus gained through illegal activity, so any surplus lost to those under the age of 18 is lost. Consumer surplus loss would be based on the reduction in vapes sold to consumers from vending machines. Given limited data and various uncertainties, we have not monetised this impact.

Health impacts of fewer people using vapes and other nicotine products to quit smoking

905. As mentioned in paragraph 770, the latest evidence has found that vaping poses a small fraction of the risks of smoking[479] and vapes can be an effective tool in supporting smoking cessation, especially when combined with expert support[480,481].

906. This impact assessment has demonstrated that this policy is expected to reduce the number of vapes that are consumed. Due to data limitations, we have not been able to estimate who reduces their consumption and whether this links to uptake rates, however the reduced consumption could include people that use vapes as a smoking cessation aid.

[479] OHID. 2022. Nicotine vaping in England: 2022 evidence update.
[480] Boyce and others. 2022. Electronic cigarettes for smoking cessation.
[481] Lindson and others. 2023. Pharmacological and electronic cigarette interventions for smoking cessation in adults: component network meta-analyses.

907. According to ONS data on adult vaping prevalence in Great Britain[482], 31.6% of adults that currently vape are also current smokers, and 18.7% are ex-smokers. Data from ASH[483] on adult vaping in Great Britain shows that among current smokers 17% say the main reason they vape is to help them cut down the amount smoked, and among ex-smokers 28% say it is to help them quit.

908. We do not envisage this to be a problem as vape vending machines should not interact significantly with smoking cessation services. However, banning vape vending machines could indirectly affect this group if the availability of vape significantly decreases and the alternative option is smoking. We do not anticipate this to be the case given that we assume only a small proportion of vapes are currently purchased from vending machines.

909. Whilst smoking prevalence in the UK has been falling for many years[66], the risk of this policy is that the potential health gains from reduced vaping consumption, could be offset by a slowing of smoking cessation at a societal level.

910. These potential offsets in benefits have been illustrated in the logic model in Annex .

Reduced profits to business from reduced sales of nicotine products and cigarette papers

911. Following the same methodology as in the 'reduced profits to business from reduced vape consumption' section above, a ban on the sale of nicotine products and cigarette papers could result in reduced consumption and consequently reduced profits for retailers, wholesalers and manufacturers.

912. Through desk research we identified mainly vapes being sold through vending machines, however there is some evidence to suggest that the market will expand and other products would also be available via vending machines eventually. British American Tobacco plan to sell its Velo products (nicotine pouches) through vending machines[484].

913. Tattan-Birch et al. (2022)[485] survey data from adults in Great Britain reveals that only 0.26% of adults in Great Britain use nicotine pouches, but the prevalence did increase between 2020 and 2021. Results also shows prevalence was higher amongst current smokers (0.87%), recent former smokers (0.97%), and former smokers (0.24%), compared with never smokers (0.06%). Likewise, prevalence was also higher for vapes (1.64%) and nicotine replacement therapy (2.02%) users was higher than non-users (0.15% and 0.21% respectively).

914. The estimated low prevalence of these products and the limited sale of them via vending machines suggests that the cost to business would not be substantial. Additionally, it is likely that any loss in profits will at least in part be offset by increased profits on goods and services purchased in place of vapes.

[482] ONS. 2024. Adult smoking habits in the UK: 2023.
[483] Action on Smoking and Health. 2024. Use of e-cigarettes among adults in Great Britain.
[484] Better Retailing. 2024. Exclusive: BAT's plans for vape vending machines in pubs revealed.
[485] Tattan-Birch and others. 2022. .Tobacco-free Nicotine Pouch Use in Great Britain: A Representative Population Survey 2020 – 2021.

Monetised benefits

915. Where possible we have monetised benefits to society as a result of Option 2. The monetised benefits identified are:

- Savings to government from reduced fires from vapes

Savings to government from reduced fires from vapes

916. Vapes use lithium-ion batteries. According to the National Fire Protection Association (NFPA)[486], the likelihood of lithium-ion batteries overheating, catching on fire, or causing explosions increases when damaged, improperly used, charged, or stored. If disposed of in household waste or recycling it can cause fires in transport, landfill, or recyclers.

917. One report estimated that in 2021 there were 201 fires in landfill sites per year[487]. More recent survey results[488] reveal lithium batteries caused over 1,200 fires number of fires in bin lorries and on waste sites in the past year, which was a 71% increase from 700 fires in 2022. Based on this range of estimates, we use 700 as the central scenario.

918. To be in line with the sales growth we have estimated in Table 34 , we have assumed the same year-on-year growth would be applied to the number of lithium-ion battery fires over the appraisal period.

919. An estimated 19% of lithium batteries placed on the UK market was accounted for by single use vapes[489]. Applying this to the number of fires described above produces the number of fires attributable to disposable vapes.

920. Assuming that because of a ban on vape vending machines there is an 2% reduction in vape consumption (as explained in paragraph 883), multiplying this by the annual number of fires a year, equates to 79 fewer lithium-ion battery fires over the appraisal period.

921. The unit cost of a lithium-ion fire can be estimated through the Home Office estimates of the average cost of all fires in 2020, of £45,900[490]. Multiplying this by the estimated annual reduction in fires, provides an annual estimate for reduced cost of vaping-related fires compared to the baseline outlined in Table 66.

Table 66: Estimated savings from reduced vape-related fires under Option 2, 2024 price base, 2024 present value, £m

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Total
No. of vape related fires	226	262	301	341	382	422	461	497	528	555	3,974
Reduction in vape-related fires	5	5	6	7	8	8	9	10	11	11	79

[486] Class Dismissed. 2024. Lithium-ion battery safety heavily featured at 2024 NFPA conference.
[487] Eunomia and Environmental Services Association. 2021. Cutting Lithium-ion Battery Waste Industry.
[488] Material Focus. 2024. Over 1,200 battery fires in bin lorries and waste sites across the UK in last year.
[489] Eunomia. 2023. Analysis of the market for vapes: exploring the environmental impacts of single-use vapes. Based on Environment Agency. Agency. 2023. UK Portable Batteries Data Summary for the 2022 Compliance Period. Final. and Allied Market Research. 2021. Portable Batter Market Outlook- 2030.
[490] Home Office. 2023. Economic and social cost of fire.

Savings from reduced fires	0.22	0.25	0.27	0.30	0.32	0.35	0.37	0.38	0.39	0.40	3.25

Non-monetised benefits

922. Given the lack of evidence we have not monetised the benefits to society as a result of Option 2. The non-monetised benefits identified are:

- Potential health gains to individuals
- Environmental benefits to society from reduced litter associated with fewer nicotine and non-nicotine vapes being disposed of.
- Reduced cost to recycle vapes

Potential health gains for individuals

923. This impact assessment has demonstrated that this policy is expected to reduce the number of people that vape, including the number of young people that vape. As a result, a ban of vape and nicotine product vending machines is expected to provide health benefits through reduced uptake of vaping among young people.

924. As described in paragraph 774, there are health risks associated with young people vaping, mainly due to the presence of nicotine in vapes. However, vaping is estimated to be far less harmful than smoking. Additionally, other nicotine products also have health risks associated with them, but evidence is also limited.

925. Whilst there is limited evidence on the long-term health benefits of using these products in theory there are potential long term health gains from uptake in youth which could translate to increased health life expectancy of individuals. Improved health could also translate to a direct reduction in healthcare costs to the NHS and social care services. There are also other potential economic benefits from improved health of individuals, including increased productivity of the workforce. These impact pathways are illustrated in the logic model in Annex .

926. In the Government of Canada regulatory impact analysis statement for the Tobacco and Vaping Products Act it was assumed that the mortality and morbidity risks associated with vaping are 20% of the mortality and morbidity impacts of cigarettes[491]. This assumption was developed with members of an expert panel composed of five academics in tobacco control.

927. In the Standardised Packaging for tobacco products impact assessment[492], it was estimated the discounted number of life years saved for each young person who does not take up smoking is 1.0. Based on this estimate and the evidence from Canada, we could estimate the number of life years gained for each young person that does not take

[491] Government of Canada. 2021. Canada Gazette, Part 1, Volume 155, Number 25: Order Amending Schedules 2 and 3 to the Tobacco and Vaping Products Act (Flavours).
[492] Department of Health. 2015. The Standardised Packaging of Tobacco Products Regulations 2015.

up vaping to be 0.2. HMT's Green Book[493] places a value of £70,000 on a QALY. In the impact assessment for Mandating quit information messages inside tobacco packs[494], we explained that it remains appropriate to use the same value of a QALY for life years where QALY estimates are not readily available. Based on the evidence from Canada, for every young person not taking up vaping, the benefits could be £14,000.

928. Taking the assumption that for each young person not taking up vaping would result in 0.2 QALYs, or £14,000, we are able to produce illustrative estimates for the number of young people the policy would need to prevent from taking up vaping for the benefits to equal the costs. As outlined in the monetised costs and benefits section above, we estimate the costs over the appraisal period to be £1101m, benefits to be £3m and therefore the net benefit to be -£1098m over the ten-year appraisal period, in 2024 present value.

929. Dividing the annual absolute value of the net benefit by the discounted health benefit from each young person not taking up vaping equates to 86,941 people needing to be prevented from taking up vaping as a result of the policy over the appraisal period.

930. To add context, using 2022 UK population estimates[495] and 2021 vape prevalence of 11- to 15-year-old current (regular and occasional) users who vape in England[496] and 2022 vape prevalence rates for adults aged 16+ in Great Britain[497] (and assuming these rates are reflective of other UK nations), we estimate the number of vapes in the UK to be around 5.8 million.

931. If we take a simplified assumption that the number of people that vape will remain the same in our counterfactual, in order to breakeven in Option 2, the policy would need to prevent an equivalent of 1.5% of vapers aged 11 years + that currently vape in the UK. As stated earlier in impact assessment, in several of our monetised estimates we have assumed the increase in profits of businesses over the appraisal period in the counterfactual is driven by increased demand for vapes, therefore in practice the number of QALYs needed to breakeven would likely be higher than in this simplified estimate which assumes the number of vapers remains the same over the counterfactual.

932. As stated above, this breakeven estimate is illustrative as there are multiple other non-monetised costs and benefits which would impact the potential breakeven point of this analysis. In addition, there is significant uncertainty on the health benefits of a young person not taking up vaping.

Environmental benefits from reduced litter associated with fewer people using disposable vapes

933. The rise in youth vaping in recent years has happened concurrently with the increase in the use of disposable vape products. For example, in 2024, among young people that vape in Great Britain, 54% said the most frequently used device was a disposable

[493] HM Treasury. 2022. The Green Book: appraisal and evaluation in central government.
[494] DHSC. 2023. Mandating quit information messages inside tobacco packs impact assessment.
[495] ONS. 2024. Estimates of the population for the UK, England, Wales, Scotland, and Northern Ireland
[496] NHS England. 2022. Smoking, Drinking and Drug Use among Young People in England, 2021: Data tables - NHS England Digital
[497] ONS. 2023. E-cigarette use in Great Britain - Office for National Statistics (ons.gov.uk)

(single use) vape, up from 7.7% in 2021[498]. However, it should be noted that this is data from a cross-sectional survey and does not demonstrate that the increase in youth vaping has been driven by the increase in the availability and use of disposable vapes.

934. Research commissioned by Material Focus[499] found that almost 5 million disposable vapes are either littered or thrown away in general waste every week, equivalent to around 260 million a year. This has quadrupled in the last year is equivalent to lithium batteries that could power 5,000 electric vehicles being thrown away per year. The report found 52% of 18 to 34 year olds who bought a vape in the last year brought a single-use product. The report also found that over 360 million single use vapes are bought in the UK each year, and concerningly only 73% of these are thrown away.

935. If Option 2, reduced the number of vapes consumed, and/or produced then there will be environmental benefits from reduced litter from vaping disposable vapes.

Reduced cost to recycle vapes

936. A report by Material Focus[500] found that, based on survey data of 16- to 17-year-olds, 17% recycled single-use vapes in a shop or local recycling centre.

937. For vapes that are recycled, there are costs to local authorities and other stakeholders to correctly recycle them. Zero Waste Scotland surveyed WEEE recycling organisations on the of recycling SU-ecigs.[501,502] WEEE recycling organisations indicated a range of values from 50p per item, to £1 per item, and figures per tonne (£10,000 per tonne for treatment of SU-ecigs, equivalent to 30p per item).

938. Based on us assuming there would be an annual reduction in vape sales, we would also then assume there would be cost savings associated with reduced cost to recycle vapes.

Direct costs and benefits to business calculations

939. The monetised direct costs to businesses from Option 2 are:

- Familiarisation costs
- Disposal costs
- Asset value costs
- Transition costs
- Lost profits for retailers, wholesalers and manufacturers from reduced sales of nicotine and non-nicotine vapes

[498] Action on Smoking and Health. 2024. Use of vapes (e-cigarettes) among youth people in Great Britain.
[499] Material Focus. 2023. Number of disposable single-use vapes thrown away have in a year quadrupled to 5 million per week.
[500] Material Focus. 2023. Number of disposable single-use vapes thrown away have in a year quadrupled to 5 million per week.
[501] Single Use E-cigarettes, assumed equivalent to disposable vapes.
[502] Zero Waste Scotland. 2023. Environmental impact of single-use e-cigarettes.

940. The non-monetised direct costs to business from Option 2 are:

- Stock costs
- Reduced profits to business from reduced sales of nicotine products and cigarette papers

Table 67: Costs to business

Cost to business description	Cost 2026-2035, 2024 price base, 2024 present value (£m)
Familiarisation costs	0.05
Disposal costs	0.99
Asset value costs	35.2
Transition costs	0.02
Lost profits for retailers, wholesalers, and manufacturers from reduced sales of nicotine and non-nicotine vapes	1,065
Stock costs	Non-monetised
Reduced profits to business from reduced sales of nicotine products and cigarette papers	Non-monetised
Total monetised cost	1,101

941. Taking into account the above monetised impacts the total cost to business over the ten year appraisal period is £1,101m.

Risks and assumptions

942. Evidence used in this impact assessment are of mixed quality and from a range of sources.

943. Areas of strength in the analysis include:

- Understanding the vape prevalence rates through robust data collection for children in England via NHS Digital. Whilst not used in monetised costs or benefits it provides a good understanding of current and recent historic use.
- Providing supporting evidence to either sense check, or further support estimates. For example, whilst we could not source relevant literature on the current vape vending market, we were able to draw upon tobacco vending machines as a proxy market.
- We have also conducted sensitivity analysis around the key assumptions that have been used in the analysis to test their robustness.
- Evidence on the profit margins to retailers and wholesalers, as they have been verified as part of DEFRA's stakeholder engagement process undertaken in Spring 2024.

944. Some evidence has been sourced from official statistics and therefore we believe are robust, however we have had to make assumptions in applying them.

- Evidence on wage rates sourced from ONS official statistics and updated annually. However, we have had to select wages based on job titles that appear appropriate. In practice wages could vary.

- Unit cost of a vape was sourced by DEFRA and verified as part of DEFRA's stakeholder engagement process undertaken in Spring 2024. However, this is an estimate for disposable vapes only so may not be reflective of all products in scope.

945. There is limited evidence base for all products in scope of this IA, and therefore this has limited the quantitative analysis. Additionally, assumptions have been included in replacement of evidence in some estimates.

946. Given the limited evidence in this area, we have been unable to further test the sources of evidence for bias against other sources. The limitations of data have been outlined when used in analysis.

947. The main evidence gaps of this impact assessment are:

- Evidence on the number of vape vending machines in operation and the number of vape vending machine businesses.

- Evidence on the supply chain pathways in the sector

- Robust evidence on the number of individuals using vape vending machines, including the proportion of youths.

- Evidence to verify the impact size of banning vape vending machines.

948. Where there are evidence gaps, we have either filled these with assumptions, based them on limited evidence, used cigarette vending machines as a proxy market or produced non-monetised costs or benefits.

Sensitivity analysis

Percentage reduction in vape consumption

949. As outlined above in the monetised cost section above, we assume a 2% reduction in the consumption of vapes as a result of the vape vending machine ban. The Centre for Economic and Business Research (CEBR) produced a report for the United Kingdom Vaping Industry on the Economic Impact of the vaping industry[503]. The report estimated that 2% of respondents used 'other physical retailers' as the preferred spending avenues to purchase vaping products in 2021. We make the assumption that a maximum of 2% of vapes would therefore be purchased from vape vending machines as vending machines are not included in any other category. This also assumes that the preferences translate to the proportion of vapes purchased. This assumption is used to

[503]CEBR for UKVIA. 2022. Economic impact of the vaping industry.

calculate the number of vape vending machines hence we have modelled the impact if this assumption is changed.

950. However, in the absence of additional evidence we must also consider:

- Not all of the 2% may be from vape vending machines
- The preferred spending avenues may not translate to proportion of vapes purchased by individuals.
- There may be a replacement rate at which, if vending machines are banned, individuals may purchase vapes from other retailers.

951. To account for some of these factors, we have modelled an alternative scenario where the core assumption of 2% from the CEBR report is changed to 1% and 0.5%. This changes the estimated number of vending machines in operation and hence impacts the estimates throughout the impact assessment. Table 68 shows a comparison of these assumptions being applied and the impacts on the estimated costs. The methodologies for estimating the impacts have remained consistent.

Table 68: Sensitivity analysis for percentage reduction in vape consumption, 2024 price base, 2024 present value

	0.5%	**1%**	**2%**
Number of vape vending machines	2,637	5,273	10,547
Familiarisation costs (£m)	0.0	0.0	0.1
Disposal costs (£m)	0.2	0.5	1.0
Asset value costs (£m)	8.8	17.6	35.2

Impact on profit

952. We have also conducted sensitivity analysis to consider the impacts on profit if there is a smaller reduction in consumption of vapes. The impact of a 1% reduction in consumption and a 0.5% reduction in consumption are outlined in Table 69.

Table 69: Sensitivity scenarios for percentage reduction in vape consumption as a result of an ban on vape vending machines, 2024 price base, 2024 present value, £m

Profit loss	**Low**	**Central**	**High**
Total	266	533	1,065

Vape sales projections

953. As outlined in paragraphs 417 and 418 in our baseline under Option 2, disposable vape sales growth has been estimated using Eunomia's projections[504] and extrapolated further by DEFRA and DHSC.

954. Eunomia's projection is based on the year-on-year growth rate in single-use vape consumption forecast in Zero Waste Scotland, for the period between 2022 to 2027.

[504] Eunomia. 2023. Analysis of the Market for Vapes: Exploring the environmental impacts of single-use vapes

This growth trend is assumed to continue between 2027 and 2030 and has been extrapolated further assuming it will continue to 2035. In the absence of any intervention, there is expected to be a continued growth in the uptake of vapes across the population along with the rising share of disposable vape users (and share of sales revenue) among the growing number who use vapes.

955. The forecasts are recognised has being uncertain, and therefore the sensitivity analysis around the central scenario has been undertaken to explore this risk, based on the high and low scenarios in single-use-vape consumption forecast in Zero Waste Scotland for the period 2022 to 2027 as Eunomia used the same growth rate for this period. This works out to 12% (to the nearest percent) above and below the central scenario for disposable vapes POM, whilst keeping the year-on-year growth rate the same.

956. In line with the methodology used to estimate monetised profit loss to business, we have uplifted the profit loss, figure by 50% to represent profits from the non-disposable market. However, we cannot comment on how many sales profit represents.

957. Applying an approximate 12% change in sales compared to the central projection, we estimate the following impact on sales projections and profits:

Table 70: Projected disposable vape sales in the UK in low, central and high consumption scenarios

Year	2026	2030	2035
Low	537,647,882	909,250,146	1,321,294,651
Central	611,010,886	1,033,318,938	1,501,587,644
High	684,373,891	1,157,387,729	1,681,880,637

Table 71: Profit loss to business from reduced vape sales in the UK, 2024 price base, 2024 present value, £m

	Low	Central	High
Total profit loss	937	1,065	1,193

Percentage uplift to profits to account for non-disposable vapes

958. As outlined in paragraph 434, we have applied an uplift to estimated profits to business from disposable vapes to account for profits from non-disposable vapes. We have applied a 50% uplift to the projected profits for businesses based on industry body stakeholders reporting the single-use vape market sits at around 50% of the market in the UK as reported by Eunomia[505].

959. We have tested the impact on business profits if a different uplift was applied. This is to illustrate how profits may differ depending on what the true market value split is between disposables and non-disposables. For a low value, we have applied a 30% uplift to estimated profits from disposable vapes. This is based on industry body stakeholders reporting the single-use vape market peaked at around 70% of the market in the UK, as reported by Eunomia. For a high value, we have applied a 70% uplift to reflect the difference between the central and low estimate. The impact on business profits can be seen below.

Table 72: Uplift values applied in low, central and high scenarios, 2024 price base, 2024 present value

Scenario	Percentage of the vape market		
	Disposable vapes	Non-disposable vapes	Total profit loss (£m)
Low	70%	30%	761
Central	50%	50%	1,065

[505] Eunomia. 2023. Analysis of the Market for Vapes: Exploring the environmental impacts of single-use vapes

High	30%	70%	1,775

Price of vapes

960. As stated in paragraph 432, the unit cost used in our central estimate was collected as part of DEFRA's stakeholder engagement process undertaken in Spring 2024[506]. A low (£4.01) and high (£7.01) estimate were also provided as part of this process. We have used the average cost of a disposable vape as a proxy for the retail price of all vapes, however in practice this could differ, as non-disposable vapes and nicotine products vary in prices.

961. To estimate the influence of this unit cost on the monetised costs and benefits in the central scenario, we applied the lower and upper range estimates for the retail price of a vape. The wholesale and manufacturer prices have been estimated using the same methodology as for the central estimate described in paragraph 433 above.

Table 73: Sensitivity scenarios for sales price, 2024 prices

Sales prices	Low	Central	High
Retailer	£4.01	£5.38	£7.10
Wholesaler	£2.21	£2.95	£3.90
Manufacturer	£1.94	£2.60	£3.43

962. The methodology used in our central estimate are such that outputs are estimated based on projected revenue divided by unit costs. Consequently, the profits will not change as a result of a change in unit costs, however the estimated output for the expected revenue will be impacted by unit costs.

963. Applying the range of unit costs above, we estimate the below impact on the number of reduced vape sales as a result of the vape vending machine ban.

Table 74: Profit loss for low, central and high vape unit costs, 2024 price base, 2024 present value, £m

Profit loss	Low	Central	High
Total	794	1,065	1,405

Profit margins for businesses

964. The costs in Option 2 are largely driven by the profit margins of retailers, at 45% of the retail price of £5.38. To test the profit margins of retailers, wholesalers and manufacturers alternative low and high profit margins have been applied to the analysis.

965. As outlined in paragraph 432, the profit margins for retailers, wholesalers and producers have been applied in line with DEFRA's disposable vapes impact assessment[507], which has been verified as part of DEFRA's stakeholder engagement process undertaken in Spring 2024[508].

Table 75: Sensitivity scenarios for profit margins for businesses

Profit margins	Low	Central	High
Retailer	40%	45%	50%
Wholesaler	10%	12%	14%

[506] Defra research conducted in 2023 based on a sample (a compiled list of approximately 40 products) of products for sale from both online and in-store retailers, including specialist vape stores, newsagents and supermarkets,
[507] Department for Environment and Rural Affairs (DEFRA). 2024. Ban on the sale and supply of disposable vapes in England.
[508] Defra research conducted in 2023 based on a sample (a compiled list of approximately 40 products) of products for sale from both online and in-store retailers, including specialist vape stores, newsagents and supermarkets,

Producer	10%	15%	20%

966. Because of the methodology we use to estimate sales price at each stage of the supply chain, the sales prices in this scenario for wholesalers and manufacturers are adjusted.

Table 76: Sales price in low, central and high profit margin scenarios, 2024 prices

Sales prices	Low	Central	High
Retailer	£5.38	£5.38	£5.38
Wholesaler	£2.23	£2.95	£2.69
Producer	£2.91	£2.60	£2.15

967. Using the same methodology as outlined in paragraph 435 of the monetised costs section and applying the varying profit margins for retailers, wholesalers and producers we can estimate a reduction in reduced profits below.

Table 77: Profit margin sensitivity, £m, 2024 price base year, 2024 present value

Lost profits	Low	Central	High
Total	931	1,065	1,253

Number of vape vending machine distributors

968. Given there is limited data on the number of vape venue hosts as mentioned in paragraph 839, we rely on using desk research and a proxy market of cigarette vending machines. This gives us a minimum number of distributors and a maximum number of distributors. This leads to the following impacts:

Table 78: Sensitivity analysis of number of vape distributors, 2024 price base, 2024 present value, £

	Minimum number of vape vending machine distributors (28)	Maximum number of vape vending machine distributors (60)
Familiarisation costs	164	351
Transition costs	7,855	16,832

Fire unit costs

969. The savings in Option 2 are largely driven by the marginal costs of fires, and the number of fires. To test the overall cost savings from a reduction in fires both of these have been tested.

970. For the marginal cost of fires, the high and low marginal cost estimates are based on Home Office estimates of the average cost of fires in 2020, in different settings[509]. The total unit cost for all fires which makes up the central scenario is £45,900. Vapes have been reported to cause fires in UK waste plants[510], which could be considered 'Other buildings' (high, £124,200), and bin lorries[511], which could be considered 'Road vehicles' (low, £17,700).

[509] Home Office. 2023. Economic and social cost of fire.
[510] The Guardian. 2023. Single-use vapes sparking surge in fires at UK waste plants.
[511] BBC News. 2024. Vapes spark fire in back of rubbish lorry.

971. 196. Using the same methodology as outlined in paragraphs 916 to 921 and applying the high marginal cost of fires, and the low marginal cost of fires, we estimate the savings as a result of reduced fires over the 10-year period to be:

Table 79: Sensitivity analysis of fire unit costs, 2024 price base, 2024 present value, £m

	Low	Central	High
Savings as a result of reduced fires	1.3	3.3	8.8

972. For the number of fires, the low estimate is based on previous Eunomia estimates for DEFRA stating that li-ion batteries cause 201 fires in landfill sites per year[512] and high estimates are based on a report by Material Focus, stating that there were over 1,200 battery fires in bin lorries and waste sites in the UK in 2023[513]. In both cases, these increase with the expected market growth in the central scenario. We have also applied an assumption that 19% of fires are attributable to vapes.

Table 80: Sensitivity analysis of number of vape related fires, 2024 price base, 2024 present value, £m

	Low	Central	High
Number of vape related fires (2023)	38	133	228
Savings as a result of reduced fires	0.7	3.3	4.0

Small and Micro Business Assessment (SaMBA)

973. It would not be possible to exempt small businesses[514] from this policy while still achieving its aims and objectives. Whilst there is limited evidence, it is likely a large proportion of the businesses are small businesses and therefore exemption would significantly reduce the reach of the policy.

974. Only costs incurred by vape vending machine distributors and vape vending machine hosts are quantified for this SaMBA. As explained in paragraph 831860, we have assumed that vape vending machine manufacturers are based outside of the UK.

975. For vape vending machines distributors the SaMBA considers the following impacts:

- Familiarisation costs
- Transition costs
- Disposal costs

For vape vending machine hosts, the SaMBA considers the following impact:

- Familiarisation costs

Number of small and micro businesses

[512] Eunomia and Environmental Services Association. 2021. Cutting Lithium-ion Battery Fires in the Waste Industry.
[513] Material Focus. 2024. Over 1,200 battery fires in bin lorries and waste sites across the UK in the last year.
[514] [240] Based on the better regulation framework guidance small businesses are defined as those employing between 10 and 49 full-time equivalent (FTE) employees. Micro-businesses are those employing between one and nine employees. Small and micro businesses include voluntary and community bodies (also known as civil society organisations)

Vape vending machine hosts

974. As outlined in paragraph 840 we have estimated that the total number of vending machine hosts is 10,547. Also as explained in paragraph 841, we assume that the majority of vape vending machines have been placed in pubs, bars and clubs. Based on ONS data, 99% of pubs bars and pubs in the UK are small and micro businesses. We can use this assumption to estimate the number of small and micro businesses that would be impacted. Given this assumption, we estimate that 10,397 businesses will be small and micro businesses.

975. However, it should also be noted that should vending machines be placed in alternative locations, the proportion of small and micro businesses will differ.

Vape vending machine distributors

967. As outlined in paragraph 844, we have estimated the total number of vape vending machine distributors to be 60. In the absence of data, for the purpose of this SaMBA, we deem it reasonable to assume that all of these businesses are small and micro businesses. This is based on the market being relatively new.

968. It would be unreasonable, to assume that the vape vending machine market has the same number of small and micro businesses as the tobacco vending machine market as the majority of that market was dominated by large businesses. This does not seem to be the case for the vape vending machine, give the market is relatively new, therefore we have not used the tobacco vending machine market as a proxy in this instance.

Monetised costs for small and micro businesses

Familiarisation costs

969. The additional time for vape vending machine distributors and hosts to familiarise themselves with the new legislation and disseminate this information to their staff is detailed in paragraphs 848 to 859. Given we have assumed there are 60 vape vending machine distributors in total of which 100% of them are small and micro businesses. The total cost to small and micro businesses would be £354, which would be £5.84 per business over the appraisal period.

970. For vape vending machine hosts, we have assumed there are 10,397 small and micro businesses. Therefore, the total cost to small and micro businesses would be £50,002, which would be £4.81 per business over the appraisal period.

Transition costs

971. The total transition costs to vape vending machine distributors has been calculated in paragraphs 863 to 866. Given we assume that all vape vending machine distributors are small and micro businesses the total transition cost would be £16,832, which would be £281 per business over the appraisal period.

Disposal costs

972. The total disposal cost incurred by vape vending machine distributors has been calculated in paragraphs 867 to 873. Given that we assume all vape vending machine distributors are small and micro businesses the total transition cost would be £1.0m, which would be £16,436 per business over the appraisal period.

Asset value

973. The total asset value cost incurred by vape vending machine hosts has been calculated in paragraphs 874 to 878. Given that we assume all vape vending machine distributors

are small and micro businesses the total asset value loss incurred would be £35.2m, which would be £0.6m per business over the appraisal period.

Other costs to small and micro businesses

974. Small and micro businesses may also incur lost income from reduced footfall-related sales. These are sales of goods bought in addition to vapes, nicotine products, or cigarette papers from vape vending machine hosts. It seems reasonable to assume that purchasing these products are not the primary reason for individuals to enter premises such as pubs and bars but recognise it could be possible that some individuals leave pubs in bars to purchase these products if they are no longer available from vending machines. However, we do not have evidence on whether there will be reduced footfall and if there is the impact that it would have on the sale of other products from vape vending machine hosts. Therefore, we cannot conclude that this would have an impact for small and micro retailers.

Potential disproportionate impacts

975. Whilst we have modelled 100% of vape vending machine hosts being small and micro businesses given the nature of the businesses and the market being relatively new, there may be a small percentage which do not fall into the category. Large businesses may be impacted less by the change if they are better equipped to diversity their business operations and will not have to cease operations entirely.

976. It could be possible that small and micro businesses experience disproportionate impacts because of the policy. An example of this could be time and opportunity cost when familiarising with the new law. As small and micro businesses have less employees, the opportunity cost on their time could be greater as they have less employees to cover shifts of those familiarising themselves. Whilst medium and large businesses may have more employees to assist with this, due to the size of their business it is logical to assume they spend more time disseminating the familiarised information to more employees which could be an additional burden to medium and large businesses. This means that familiarisation costs could potentially vary in proportion with the size of the businesses and not result in a disproportionate impact on small and micro businesses. DHSC, in partnership with DBT and stakeholders. will come forward with clear and concise guidance that will further mitigate any potential familiarisation issues.

Potential m*itigations to small and micro businesses*

977. Whilst no small and micro businesses have been excluded for this policy, we have considered several activities to mitigate against disproportionate impacts. These include:

- Stakeholder engagement
- Lead-in times

Stakeholder engagement

978. DHSC has undertaken broad engagement on the need for government action to reduce the appeal and availability of vapes. Over the past year DHSC officials have conducted a wide-ranging consultation and engagement exercise regarding overall plans to reduce the appeal and availability of vapes (the tobacco industry and those affiliated with it

were able to respond to this consultation and the consultation response makes clear the views of the tobacco industry in response any question). Whilst this did not include specific questions on vending machines as this policy was developed afterwards, the considerations of retailers and stakeholders that were captured from this consultation exercise were taken into account. Specifically, representative bodies were broadly supportive of a need to reduce the appeal and availability of vapes to children, and cited their main concerns as being lead in times and guidance. Potential loss of sales from reduced footfall was not brought up in regards to any of the vaping proposals, so it is unlikely that a comparatively small change like a vending machine ban would lead to this concern. In addition, many of the regulations that were discussed in this exercise such a restriction on displays, flavours, and packaging would also have impacted on vending machines and no stakeholders raised this as an issue.

979. Before the government enacts future vaping regulations, another full consultation will take place on the scope and technicalities of these future restrictions on vapes. Whilst this will not change anything related to advertising/vending machines it will allow the government to assess whether small and micro businesses feel they have already been majorly impacted by the vending machine ban. If this is the case, then this will be taken into consideration when formulating new vaping regulations.

980. More specific engagement with stakeholders is difficult because the UK is a member of the World Health Organisation Framework Convention on Tobacco Control. Article 5.3 of the convention states ”In setting and implementing their public health policies with respect to tobacco control, Parties shall act to protect these policies from commercial and other vested interests of the tobacco industry in accordance with national law”. This recognises the conclusion from the World Health Assembly that the tobacco industry has operated for years with the express intention of subverting the role of governments and of WHO in implementing public health policies to combat the tobacco epidemic. In practice, this means that we do not engage with the tobacco industry unless absolutely necessary and then ensuring the highest level of transparency within those interactions. However, they are able to and do respond to our consultations, including the one on creating a smoke-free generation held in 2023. Many Tobacco companies are diversifying as result of the decreasing prevalence of smoking, this diversification has led to many Tobacco companies owning, having shares in, or having links with vaping companies. We therefore need to be mindful of the balance between engaging and protecting public health policy from the influence of the tobacco industry, and only engage if it is absolutely necessary.

981. Whilst some vaping organisations have taken steps to remove Tobacco Industry influence this is not the case across the industry as a whole and it is difficult to verify where stakeholders are free from Tobacco Industry influence unless this is stated and proven outright. Due to this consideration, engagement outside of an open government consultation is very difficult and there had already been a consultation on measures to reduce the appeal and availability of vapes to children.

982. Additionally, it is extremely difficult to identify stakeholders that operate vape vending machines as currently these are not widespread and there is insufficient data to undertake a thorough engagement exercise. This is exacerbated by tobacco and vape sales often being reported together, meaning it is even more difficult to ensure freedom from tobacco industry influence.

Lead in times

983. Potential impacts on SMBs will be mitigated by lead-in times, which we know from wider engagement with retailers and others affected by measures in the Bill is a leading consideration. The ban on vape vending machines will come into place six months after the Tobacco and Vapes Bill gains Royal Assent. Assuming that passage of the Bill takes approximately six months, this means that there will be advance notice of this ban for approximately 12 months, with a transition period of six months. This lead in period should provide businesses enough time to bring current agreements to an end, amend the products being sold by vending machines, and remove the machine if they do not wish to vend alternative products.

984. We consider this measure to be clear and straightforward. Therefore, it is unlikely that any small and micro businesses will struggle to familiarise themselves with new rules. The government will come forward with clear and concise guidance that will mitigate any potential confusion.

985. Additionally, disallowing vape and nicotine product vending machines does not mean that some businesses needs to stop selling vapes and nicotine products all together, these could be sold from behind the counter for example. This is not a ban on products being sold, simply a method of selling, any legitimate sales may be recouped if the business chooses to sell these products outside of a vending machine. It is, therefore, possible that the removal of vape vending machines would not cause a significant sales loss for some small and micro businesses given that the products in question could still be sold in the businesses premises.

986. The impact will be further mitigated given that some vape vending machines could be reconfigured to stock other products. For example, a shop could in many instances stock the vending machine with confectionary and soft drinks, depending on the type of vending machine, whilst still selling vapes and nicotine products from elsewhere in the shop. As such, potential losses from the inability to vend vape and nicotine products could be mitigated by diversifying to other products.

987. Whilst small and micro businesses are expected to face reduced profits from a reduction in their vape sales, it is expected that consumers will reallocate their income expenditure to other goods and services in the economy. Since small and micro businesses are a component of the economy, losses from reduced vape and nicotine product sales will be at least partially offset by consumption of their other products.

Table 81: Small and Micro Business assessment for banning vape vending machines, 2024 price base, 2024 present value

	Cost	**Estimate for cost for small and micro businesses**	**Average cost per store**
Vape vending machine distributors (60)	Familiarisation costs	£351	£5.84
	Transition costs	£16,832	£281
	Asset value costs	£35.2m	£0.6m
	Disposal costs	£1.0m	£16,436
Vape vending machine (10,397)	Familiarisation costs	£50,002	£4.81

Restricting vape flavours

Rationale for intervention

988. TRPR currently restricts certain ingredients including colourings, caffeine, and taurine. However, it does not restrict any combinations of flavours or flavour types.

989. There is a vast and diverse variety of flavours on the UK market including: tobacco (imitating cigarettes), menthol and mint, fruit flavours (such as strawberry, blueberry and mango), dessert and sweet flavours (such as bubblegum, cotton candy, caramel, or cheesecake), tobacco blends (combining tobacco with vanilla, caramel, or nuts), and custom mixes (vape liquid mixed by users to suit their personal preferences). The attractive wording ('descriptor names') can also attract children to try vaping, such as 'fiery flavoured strawberry' and 'berry blast': sweet flavours that children may be familiar with.

990. In the UK, a 2024 survey by ASH shows that the most frequently used vape flavouring for people that vape under 18 years old is 'fruit flavour,' with 59% of people that currently vape under 18 using them[515], while 16% of children who vape choose sweet flavours such as chocolate or candy, and 5.9% choose to vape energy or soft drink flavours. The use of flavoured vapes in adult smokers has also increased. In 2015, most adults who vaped used tobacco flavour[516]. However, in recent years there has been a shift, and in 2023 more adults are choosing fruit flavours (47%), as well as mint and menthol (17%), than tobacco (12%).

991. The ASH Use of e-cigarettes (vapes) among young people in Great Britain survey 2024[517] also indicates that flavours may be an important motivator. The survey shows that among 11 to 17 year olds that have tried vaping but never smoked, 11% said liking the flavours of vapes best described why they use or used a vape. This was the third most popular reason why 11 to 17 year olds that had never smoked said they use or used a vape, behind 'other people using them, so I join in' (18%) and 'just to give it a try' (51%).

992. Multiple systematic reviews have found that the majority of young people are more likely to initiate vaping through flavoured vapes [518, 519, 520], and the use of vapes with flavours not traditionally found in tobacco products, such as fruit and coffee, is higher among youth and young adults (vs. older adults) [521], highlighting that restricting flavours in vapes may reduce vaping prevalence among youth by preventing initiation.

993. Flavourings may also encourage daily use of vapes. Among smokers not intending to quit[522], daily use is strongly associated with subsequent smoking cessation, but among

[515] Action on Smoking and Health. 2024. Use of vapes (e-cigarettes) among young people in Great Britain.
[516] Action on Smoking and Health. 2023. Use of e-cigarettes (vapes) among adults in Great Britain.
[517] Action on Smoking and Health. 2024. Use-of-vapes-among-young-people-in-Great-Britain-2024.pdf (ash.org.uk)
[518] Zare and others. 2018. A systematic review of consumer preference for e-cigarette attributes: Flavor, nicotine strength, and type.
[519] Meernik and others. 2019. Impact of non-menthol flavours in e-cigarettes on perceptions and use: an updated systematic review.
[520] Notley and others. 2022. Youth use of e-liquid flavours—a systematic review exploring patterns of use of e-liquid flavours and associations with continued vaping, tobacco smoking uptake or cessation.
[521] Goldenson and others. 2019. A Review of the Use and Appeal of Flavoured Electronic Cigarettes.
[522] Kasza and others. 2022. Associations between nicotine vaping uptake and cigarette smoking cessation vary by smokers' plans to quit: longitudinal findings from the International Tobacco Control Four Country Smoking and Vaping Surveys.

young people, daily use may be associated with a greater risk of subsequent dependence[523].

994. This evidence demonstrates that vape flavours influence children's decision to vape, and therefore restricting vape flavours is likely to reduce the attractiveness of vapes to children, and in turn contribute to reducing youth vaping rates. However, based on the data from the ASH Use of e-cigarettes (vapes) among young people in Great Britain survey 2024, we recognise that flavours are not the only reason why young people vape. Factors such as peer pressure and curiosity to try them means some young people will continue to vape, irrespective of any restrictions on vape flavours.

Description of options considered

995. The Bill provides powers to regulate vaping and nicotine product contents and flavours.

996. In the Department of Health and Social Care's October 2023 consultation, respondents were asked whether they agree or disagree that the UK Government and devolved administration should restrict vape flavours. 47.0% of those who responded to this question agreed with restricting vape flavours, 51.0% disagreed, and 2.0% said they didn't know.

997. The Department of Health and Social Care consulted[524] on options that could be implemented using the powers conferred by the Bill. Respondents could select more than one answer. the options were:

Option 1: Do nothing

998. This option would mean there would continue to be no restriction on combinations of flavours or flavour types for vapes.

Option 2: Limiting how the vape is described

999. Vape flavours can be restricted by the way they are described. For example, New Zealand has done this by mandating vape flavour descriptions, in their Smokefree Environments and Regulated Products Amendment Regulations 2023[525], to a specified list that includes generic flavour names such as 'tobacco' or 'berry'. This means that vapes could, for example, be called 'blueberry,' but not 'blueberry muffin'. 30.7% of consultation respondents who answered this question selected this option.

Option 3: Limiting the ingredients in vapes

1000. Vape flavours can be restricted by only permitting certain ingredients to be used in the product. In the Netherlands, for example, there is a specified list of ingredients[526] that can be used in vapes, which are those that produce a 'tobacco' taste. 3.4% of respondents who answered this question selected this option.

Option 4: Limiting the characterising flavours (the taste and smell) of vapes

[523] Gravely and others. 2022. Differences in cigarette smoking quit attempts and cessation between adults who did and did not take up nicotine vaping: Findings from the ITC four country smoking and vaping surveys.
[524] DHSC. 2023. Creating a smokefree generation and tackling youth vaping.
[525] New Zealand Legislation, Parliamentary Counsel Office. 2023. Smokefree Environments and Regulated Products Amendment Regulations 2023 (SL 2023/201).
[526] Netherlands Food and Consumer Product Safety Authority. Ban on flavoured vapes. (viewed on 26 January 2024).

1001. The characterising flavours of vapes (the way a vape smells or tastes to a consumer) can be restricted. In 2020, when menthol flavoured cigarettes were banned in the UK, they were restricted based on the 'characterising flavour' of menthol. Finland, for example, has restricted all characterising flavours[527] for vapes, apart from the flavour of tobacco. 10.2% of respondents who answered the question selected this option.

1002. For this question, respondents could select more than one answer. This resulted in 23.1% of respondents selecting all three options (options 1,2 and 3) and 19.4% respondents stated that they did not know. Further questions were asked on flavour limitations and alternative flavour options. Impact assessments on the proposal related to vaping in the secondary legislation will be published later.

Indicative estimates for the costs and benefits of restricting vape flavours

1003. This section sets out the expected costs and benefits of restricting vape flavours, and where possible provides indicative estimates. As explained above, ahead of the government introducing secondary legislation to restrict vape flavours, a further impact assessment of the specific options would be completed and we would seek to improve our estimates, quantify more of the costs and benefits, and provide a NPV and EANDCB for the policy.

Potential impact

1004. We estimate that the potential impact of restricting vape flavours would be a reduction in the number of people taking up vaping and a reduction in the number of people vaping.

1005. Using ASH data on the use of vapes among adults and young people[528, 529], we can estimate the proportion of people that vape that are likely to be affected by restrictions of certain flavours.

1006. Restricting the flavour of e-liquids to tobacco only would affect a large proportion of people that vape. Among children, just 4.5% of children that vape most frequently choose tobacco flavoured or tobacco menthol flavoured liquids. A further 0.5% reported not using a flavour at all. This means that around 95% of children who vape could be affected in some way by this option.

1007. However, restricting vape flavours would also mean 87% of adults that vape could be affected in some way by this option. A decision aid tool published by Bristol University considered the impact of removing all flavours on non-smoking young people and adult smokers using vapes as a quit aid[530]. The study concluded that the flavour ban policies may have a negative impact on adult smoking. The study found that as a result of the flavour ban more adults may go back to smoking tobacco cigarettes. This is in line with recent evidence[531] on the flavour bans that have been imposed in the US, which suggests that for every 0.7mL vape pod that is not sold due to the flavour bans, there is a trade-off of an increase in the sale of 15 additional cigarettes. As mentioned, when

[527] WHO FCTC. Finland: strengthened regulation on packaging, flavours and outdoor smoking.
[528] Action on Smoking and Health. 2024. Use of vapes (e-cigarettes) among young people in Great Britain.
[529] Action on Smoking and Health. 2023. Use of e-cigarettes (vapes) among adults in Great Britain.
[530] Gibson and others. 2023. A decision aid for policymakers to estimate the impact of e-cigarette flavour restrictions on population smoking and e-cigarette use prevalence among youth versus smoking prevalence among adults.
[531] Friedman and others. 2023. E-cigarette Flavor Restrictions' Effects on Tobacco Product Sales.

describing the options consulted on for restricting vape flavours, several other countries have also introduced similar restrictions on vape flavours. In Finland, evidence shows that flavoured vapes were still used after the prohibition of all vapes that were not unflavoured, or tobacco flavoured[532]. This study suggested that enforcing the flavour ban in Finland may have faced some obstacles, particularly around preventing cross-border and online purchases of flavoured vapes.

1008. There is no available evidence on the impact of vape flavour restrictions in New Zealand or the Netherlands. The restrictions on the descriptions of vape flavours in New Zealand were only announced in 2023 and have not been implemented. While limiting of the ingredients in vapes in the Netherlands only came into force in July 2023.

1009. In Canada, the government is currently proposing a federal restriction of vape flavours to just menthol mint and tobacco. Several provinces in Canada have already restricted vape flavours, including in Nova Scotia, where only tobacco flavoured vapes are now available. In analysis by the government in Canada, federal restrictions on vape flavours were estimated to reduce consumer demand for vaping products from 10% to 14.3%[533]. The upper estimate of a reduction in demand of 14.3% was based on data from Nova Scotia. In Canada's modelling they used the mid-point of this range of 12.15% to estimate the impact of restricting flavours. To provide indicative estimates for some of the costs and benefits described below, we have used this reduction demand as our assumption for the impact restricting flavours would have in England.

1010. We recognise that there are likely to be differences between the Canadian and English vape markets that will mean this estimate will not reflect the actual impact we would see on demand for vapes in England if vape flavours were restricted. The exact impact would also depend on the range of flavours that are restricted. We would expect that the more flavours that are restricted, the larger the impact would be on consumer demand and the reduction in the uptake of vaping among young people.

Health benefits through reduced uptake of vaping among young people

1011. As described above, there are health risks associated with young people vaping, mainly due to the presence of nicotine in vapes. However, vaping is estimated to be far less harmful that smoking.

1012. The potential impact section illustrated that restricting vape flavours is expected to reduce the appeal of vapes to children and therefore reduce the number of young people that vape. As a result, restricting vape flavours is expected to provide health benefits through reduced uptake of vaping among young people.

1013. In the Government of Canada regulatory impact analysis statement for the Tobacco and Vaping Products Act[534] it was assumed that the mortality and morbidity risks associated with vaping are 20% of the mortality and morbidity impacts of cigarettes. This

[532] Ruokolainen and others. 2022. Correlates of e-cigarette use before and after comprehensive regulatory changes and e-liquid flavour ban among general population.
[533] Government of Canada. 2021. Canada Gazette, Part 1, Volume 155, Number 25: Order Amending Schedules 2 and 3 to the Tobacco and Vaping Products Act (Flavours)
[534] Canada Gazette, Part 1, Volume 155, Number 25: Order Amending Schedules 2 and 3 to the Tobacco and Vaping Products Act (Flavours)

assumption was developed with members of an expert panel composed of five academics in tobacco control.

1014. In the Standardised Packaging for tobacco products impact assessment[535] it was estimated the discounted number of life years saved for each young person who does not take up smoking is 1.0. Based on this estimate and the evidence from Canada, we could estimate the number of life years gained for each young person that does not take up vaping to be 0.2. HMT's The Green Book[536] places a value of £70,000 on a QALY. In the impact assessment for Mandating quit information messages inside tobacco packs[537], we explained that it remains appropriate to use the same value of a QALY for life years where QALY estimates are not readily available. Based on the evidence from Canada, for every young person not taking up vaping, the benefits could be £14,000.

1015. However, there is still limited evidence on the health impacts of vaping, particularly the long-term harms of vaping and uncertainty on the number of young people that wouldn't take up vaping as a result of restricting vape flavours. As a result, it has not been possible at this stage to quantify the health benefits of the reduction in the number of young people vaping because of this policy.

Health impacts of fewer people using vapes to quit smoking

1016. The potential impact section showed that adults that vape would be affected by a restriction of vape flavours. This would include a proportion of adults that use vapes as a smoking quit aid.

1017. According to ONS data on adult vaping prevalence[538], 31.6% of adults that currently vape are also current smokers, and 18.7% are ex-smokers. Data from ASH[539] on adult vaping in Great Britain shows that among current smokers 11% say the main reason they vape is to help them stop smoking completely, and among ex-smokers 21% say it is an aid to help keep them off tobacco.

1018. The decision aid tool published by Bristol University mentioned above estimated that 4% of smokers quit because of vapes, and 33% of smokers stated that they would not quit and/or smoke more if flavours were not available. For ex-smokers, it was estimated that 13% of ex-smokers vape and 13% of these ex-smokers would relapse if flavours were not available.

1019. This is just an illustration of the potential impact this policy could have and is likely to be the upper limit on the proportion of smokers that would not quit, and ex-smokers that would relapse, if vape flavours were restricted. Firstly, the Bristol University decision aid tool is based on a scenario where only three vape flavours remain on the market (unflavoured, tobacco, and menthol). The impact on smokers quitting and ex-smokers relapsing would be lower if fewer flavours were restricted. Secondly, there are other quit aids that smokers could try, such as other nicotine replacement therapies.

[535] DHSC. 2015. The Standardised Packaging of Tobacco Products Regulations 2015 (legislation.gov.uk)
[536] HMT. 2022. The Green Book: appraisal and evaluation in central government.
[537] DHSC. 2023. Tobacco pack inserts impact assessment.
[538] ONS. 2024. Adult smoking habits in the UK: 2023.
[539] Action on Smoking and Health. 2024. Use of vapes (e-cigarettes) among adults in Great Britain - ASH

1020. Due to the uncertainty on the size of the impact that restricting vape flavours would have on the number of current smokers not quitting and ex-smokers that relapse, we have not quantified the health impacts of fewer people using vapes to quit smoking.

Environmental benefits from reduced litter associated with fewer people vaping

1021. As described above, the increase in the use of vapes has negative environmental impacts, mainly due to the significant increase in the use of disposable vapes, which are often littered or disposed of incorrectly.

1022. The potential impact section illustrated that any restriction of vape flavours is expected to reduce the number of children and adults that vape. As a result, restricting vape flavours is expected to reduce the amount of litter from vapes through reduced uptake of vaping.

1023. As explained above, research commissioned by Material Focus[540] found that almost 5 million disposable vapes are either littered or thrown away in general waste every week, equivalent to around 260 million a year. If the estimated reduction in demand for vaping products from Nova Scotia in Canada from restricting flavours of 12.15% is also seen in the UK, we could expect a similar reduction in the amount of vapes that are littered or thrown away in general waste. This would be equivalent to around 600,000 fewer vapes disposed of each week and around 30 million fewer each year.

1024. The purpose of this estimate is to provide an illustration of the potential impact this policy could have on the amount of vapes that are littered. The main limitation is that it assumes that the number of vapes used, and specifically disposable vapes, would decrease by the same amount as the indicative reduction in demand for vapes based on the estimate from Canada.

1025. Due to uncertainty on the number of young people that would not take up vaping, and number of adults that would stop vaping as a result of restricting vape flavours, we have not quantified the environmental benefits of this policy.

1026. If secondary legislation was implemented to restrict vape flavours, then a further impact assessment would be completed, at which point we would look to further quantify the environmental impacts of this policy.

Savings to government from reduced fires from nicotine and non-nicotine vapes

1027. Vapes use lithium-ion batteries. According to the National Fire Protection Association (NFPA), the likelihood of lithium-ion batteries overheating, catching on fire, or causing explosions increases when damaged, improperly used, charged, or stored. If disposed of in household waste or recycling it can cause fires in transport, landfill, or recyclers.

1028. One report estimated that in 2021 there were 201 fires in landfill sites per year. More recent survey results[541] reveal lithium batteries caused over 1,200 fires number of fires

[540] Material Focus. 2023. Number of disposable single-use vapes thrown away have in a year quadrupled to 5 million per week.
[541] Material Focus. 2024. Over 1,200 battery fires in bin lorries and waste sites across the UK in the last year.

in bin lorries and on waste sites in the past year, which was a 71% increase from 700 fires in 2022. Based on this range of estimates, we use 700 as the central scenario.

1029. To be in line with the sales growth we have estimated in Table 34 we have assumed the same year-on-year growth would be applied to the number of lithium-ion battery fires over the appraisal period.

1030. An estimated 19% of lithium batteries paced on the UK market was accounted for by single use vapes[542]. Applying this to the number of fires described above produces the number of fires attributable to disposable vapes.

1031. As explained above, for our indicative estimates of the costs and benefits of restricting flavours we assume a 12.15% reduction in demand for vapes. Multiplying this reduction in demand by the estimated fires caused by vapes each year, this equates to around 530 fewer lithium-ion battery fires over the appraisal period (accounting for growth in the vaping market outlined above).

1032. The unit cost of a lithium-ion fire can be estimated through the Home Office estimates of the average cost of all fires in 2020, £45,900[543]. Multiplying this by the estimated annual reduction in fires, provides an estimate for reduced cost of vaping-related fires.

1033. Based on this data, Table 82 shows the indicative estimate of the cost savings to government from reduced vaping related fires in the UK.

Table 82: Cost savings to government from reduced vaping related fires of vape flavour restrictions, 2024 prices

	United Kingdom
2036	£20.8 million

Familiarisation costs

Manufacturers

1034. Vape manufacturers would be required to become familiar with the new regulations on flavour restrictions for vapes. We expect that Medicines & Healthcare products Regulatory Agency (MHRA) (as the body who run the vape notification system) would provide guidance that manufacturers would have to spend time reviewing.

1035. The total cost to vape manufacturers to review the guidance is estimated by multiplying the number of vape manufacturers in the industry by the employee time it would take to review the guidance and the median hourly wage.

1036. Based on information provided by MHRA from their vape product notification data, there are around 323 manufacturers of vapes in the UK, and around 71 importers of vapes. It is assumed this is also the number in England. It is also assumed that all 394 manufacturers and importers would have to read the new guidance to ensure that their products are compliant with the new regulations.

[542] Eunomia. 2023. Analysis of the market for vapes: exploring the environmental impacts of single-use vapes
[543] Home Office. 2023. Economic and social cost of fire.

1037. We estimate the time taken for managers to familiarise themselves with the legislation based on typical technical text reading speeds (75 words per minute[544]). Based on similar guidance that already exists on flavours for food business operators, flavouring producers, and other stakeholders[545], we would expect the new guidance that manufacturers have to review to be about 30 pages long. Each page of the existing flavours guidance contains around 300 words on average. If we take that as a guide to the likely length of the new guidance, we expect it to take each person in the vape manufacturer that needs to read the guidance around 2 hours.

1038. It is uncertain how many people in each vape manufacturer would need to review the guidance. For this indicative estimate we have assumed that one manager would need to review the guidance.

1039. ONS' Annual Survey of Hours and Earnings (ASHE)[546] provided a median hourly wage for production managers and directors in manufacturing of £24.95. Adjusting this hourly wage for 2025 prices using GDP deflators[547], and by 19% to account for non-wage labour costs[548], the estimated hourly wage for a manager for a vape manufacturer is £30.43.

1040. Based on this data, Table 83 shows the indicative estimate of the one-off cost to vape manufacturers in the UK to familiarise themselves with the new regulations on which vape flavours they are allowed to sell.

Table 83: Familiarisation costs of vape flavour restrictions for vape manufacturers

	United Kingdom
2027	£20,000

Retailers

1041. We also expect that retailers and wholesalers would need to spend time reviewing any new guidance to ensure that they are selling legal products. To estimate this cost for retailers and wholesalers, we use the same assumptions for the time it would take to review the guidance as for manufacturers. However, in practice we would expect retailers and wholesalers to need to spend less time on this.

1042. Data we have identified suggests that in the UK there are:

- 50,387 convenience stores[549], of which 71% are independently operated.
- 5,944 Supermarkets[550, 551], excluding discounters that generally don't sell vapes.

[544] EFTEC. 2013. 'Evaluating the cost savings to business from revised EA guidance – method paper' as quoted in BEIS. 2017. Business Impact Target: Appraisal of guidance: assessments for regulator-issued guidance.
[545] FoodDrink Europe. 2019. Guidelines on Flavourings.
[546] ONS. 2023. Annual Survey of Hours and Earnings (ASHE).
[547] HMT. 2014. GDP deflators at market prices, and money GDP.
[548] Based on non-wage labour costs as a percentage of total labour costs. ONS estimated that the value of labour costs was estimated at £22.80 per hour at whole economy level and wage costs contributed £19.20, with non-wage costs, such as pensions and National Insurance contributions, making up the rest. Based on this estimate we have uplifted wage costs by 19% to account for non-wage costs. https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/bulletins/indexoflabourcostsperhourilch/julytoseptember2020
[549] Association of Convenience Stores. 2024. The Local Shop Report 2024. Accessed here: The Local Shop Report | ACS
[550] IGD. 2019. UK Grocery Store Numbers 2018.
[551] Data from 2018 as most recent we have been able to obtain.

- 3,573 specialist vape shops[552]

1043. We do not know what proportion of these sell vapes, so we assume all do. Based on this we estimate there are 58,905 retailers in the UK that sell vapes.

1044. It is assumed that the guidance would only be read by the shopkeeper and owners in each vape shop. We do not expect that staff in the shop would be required to familiarise themselves with the guidance, as it is the shopkeeper and owners that are most likely to be responsible for ensuring that products in their stores are compliant with the new regulations.

1045. ONS' Annual Survey of Hours and Earnings (ASHE) provided a median hourly wage for shopkeepers and owners (retail and wholesale) of £12.13. Adjusting this hourly wage for 2025 prices using GDP deflators[553], and by 19% to account for non-wage labour costs[554], the estimated hourly wage for a manager or a retailer that sells vapes is £14.77.

1046. Based on this data, Table 84 shows the indicative estimate of the one-off cost to vape retailers in the UK to familiarise themselves with the new regulations on which vape flavours they are allowed to sell.

Table 84: Familiarisation costs of vape flavour restrictions for vape retailers

	United Kingdom
2027	£1.7 million

Wholesalers

1047. For wholesalers, data from the ONS' Annual Business Survey[555] (ABS) shows there are 17,294 food, beverage, and tobacco wholesalers in the UK. Due to a lack of specific data for vape wholesalers, it is assumed this is also the number of vape wholesalers in the UK.

1048. As mentioned above, the ONS' Annual Survey of Hours and Earnings (ASHE) provided a median hourly wage for shopkeepers and owners (retail and wholesale) of £12.13. Adjusting this hourly wage for 2025 prices, and by 19% to account for non-wage labour costs, the estimated hourly wage for a manager or a retailer that sells vapes is £14.77.

1049. Based on this data, Table 85 shows the indicative estimate of the one-off cost to vape wholesalers in the UK to familiarise themselves with the new regulations on which vape flavours they are allowed to sell.

Table 85: Familiarisation costs of vape flavour restrictions for vape wholesalers

	United Kingdom
2027	£470,000

[552] CEBR for UKVIA. 2022. Economic impact assessment of the vaping industry.
[553] HMT. 2014. GDP deflators at market prices, and money GDP.
[554] Based on data on the non-wage percentage of labour costs from ONS. 2020. Index of Labour Costs per Hour, UK: July to September 2020.
[555] ONS. 2023. Non-financial business economy, UK: Sections A to S.

Disposal costs

1050. If secondary legislation was implemented to restrict vape flavours, it is possible that vape retailers may need to dispose of non-compliant vape products.

1051. The extent to which this would be a cost to retailers would depend on the length of any transition period that retailers have to sell any non-compliant products. It would also depend on how much stock of vapes that retailers hold in reserve.

1052. It should be noted that in the impact assessment on standardised packaging of tobacco[556], for which there was a 12-month period to sell any non-compliant stock, it was assumed that there not be any significant disposal costs for retailers. This was mainly due to retailers, particularly small retailers, not carrying large stocks of tobacco in reserve, due to the high cost of tobacco products.

1053. Ahead of the government introducing secondary legislation to restrict vape flavours, further information would be sought to better understand the likelihood of this being a significant cost to retailers and inform the length of the transition period.

Reduced profits for vape retailers, manufacturers, and wholesalers

1054. The potential impact section illustrated that restricting vape flavours is expected to reduce the number of children and adults that vape. As a result, restricting vape flavours is expected to reduce the profits for vape retailers, wholesalers, and manufacturers through reduced vape sales. In this section, we provide indicative estimates for the loss in profits based on a reduction in sales among all vape users in England. However, it should be noted that, given it is already illegal for ages 17 and under to purchase vapes, any profit retailers, manufacturers, and wholesalers currently gain from sales from ages 17 and under is also illegal.

1055. The indicative estimate for the loss in profits is based on the estimated reduction in demand from restricting flavours in Canada, 12.15%, and the specific profit margins for vapes for each stakeholder.

1056. As assumed in DEFRA's IA for disposable vapes[557], using disposable vapes as a proxy for all vape products, we have assumed the cost of a vape to be £5.30. This was collected[558] and then verified as part of DEFRA's stakeholder engagement process undertaken in Spring 2024. Whilst our analysis includes vapes that are non-disposable we do not have an estimate for the average price of all vapes, but we expect them to have a higher retail price.

1057. As in the outlined in the *'Vape industry'* section (Paragraphs 415415415 to 436) the vape market is expected to increase in the counterfactual scenario over the next 10 years. As a result, the estimated reduction in vape usages as a result of restricting vape flavours is applied to the estimated number of vapes sold each year.

[556] The Standardised Packaging of Tobacco Products Regulations 2015 (legislation.gov.uk)
[557] Department for Environment and Rural Affairs (DEFRA). 2024. Ban on the sale and supply of disposable vapes in England. Final Stage impact assessment.
[558] Defra research conducted in 2023 based on a sample (a compiled list of approximately 40 products) of products for sale from both online and in-store retailers, including specialist vape stores, newsagents and supermarkets.

1058. The projections outlined in the '*Vape industry'* section only account for the disposable market which evidence suggests is around 50% of the market. Therefore, we apply an uplift of 100% to the final estimated the profit loss to stakeholders to account for the wider market.

1059. Based on the estimated reduction in demand from restricting vape flavours in Canada, 12.15%, it is estimated that there would be a reduction of around 72 million vape products sold in the first year in the UK, rising to 160 million fewer vape products sold by year 10.

Retailers

1060. As assumed in DEFRA's IA for disposable vapes[559], retailer profit margins of 45% are used in this analysis. To provide an indicative estimate for the reduction in profit for vape retailers, we adjust this profit per multiply it by the estimated reduction in vape sales. Future years costs are discounted at a rate of 3.5% in line with The Green Book[560].

Table 86: Reduced profits from restricting vape flavours for vape retailers

	United Kingdom
2036	£5.2 billion

1061. It is likely that any loss in profits will at least be partly offset by increased profits on goods and services purchased in places selling vapes.

Wholesalers

1062. As assumed in DEFRA's impact assessment for disposable vapes[561], wholesaler profit margins of 12% are used in this analysis.

1063. To provide an indicative estimate for the reduction in profit for vape wholesalers, we adjust this profit per vape for 2025 prices and multiply it by the estimated reduction in vape sales. Future years costs are discounted at a rate of 3.5% in line with The Green Book[562].

1064. Table 87 shows the indicative estimate for the reduction in profit for vape wholesalers in the UK up to 2036 (borne by all vape wholesalers over 10 years).

Table 87: Reduced profits from restricting vape flavours for vape wholesalers

	United Kingdom
2036	£807 million

1065. It is likely that any loss in profits will at least be partly offset by increased profits on goods and services purchased in places selling vapes.

Manufacturers

[559] Department for Environment and Rural Affairs (DEFRA). 2024. Ban on the sale and supply of disposable vapes in England. Final Stage impact assessment.
[560] HMT. 2022. The Green Book: appraisal and evaluation in central government.
[561] Department for Environment and Rural Affairs (DEFRA). 2024. Ban on the sale and supply of disposable vapes in England. Final Stage impact assessment.
[562] HMT. 2022. The Green Book: appraisal and evaluation in central government.

1066. As assumed in DEFRA's impact assessment for disposable vapes [563], manufacturer profit margins of 15% are used in this analysis.

1067. To provide an indicative estimate for the reduction in profit for vape manufacturer, we adjust this profit per vape for 2025 prices and multiply it by the estimated reduction in vape sales. Future years costs are discounted at a rate of 3.5% in line with The Green Book[564].

1068. Table 88 shows the indicative estimate for the reduction in profit for vape manufacturers in the UK up to 2034 (borne by all vape manufacturers over 10 years).

Table 88: Reduced profits from restricting vape flavours for vape manufacturers

	United Kingdom
2036	£748 million

1069. It is likely that any loss in profits will at least in part be offset by increased profits on goods and services purchased in place of vapes.

Enforcement costs

1070. Any restriction of vape flavours could require additional enforcement activity to ensure that non-compliant vapes do not remain on the market. There is a risk that any non-compliant vapes would contain more harmful ingredients. For example, some vapes currently on the market have been found to have high levels of lead, nickel, and chromium[565].

1071. There is also evidence from the US that enforcement of any flavour restrictions is important to ensure that it has an impact on the flavours that are used by people that vape. For example, a study based on the impact restricting flavours had on vape use in three US states[566] found that most respondents to the survey continued to use vapes with flavours that had been banned, and out of them, over 45% had purchased them in-state stores.

1072. However, as the Bill only provides a regulation making power, there are no enforcement costs arising from this measure. It would be the responsibility of each local authority in England to enforce any regulations that are made using the powers conferred by the Bill to restrict vape flavours.

1073. The illicit vape market has been increasing over the last few years and could be exacerbated if restrictions to vape flavours were implemented using the powers created by this Bill. Intelligence by Trading Standards and the Chartered Trading Standards Institute estimates that over 25% of the products on the UK market are non-compliant.

[563] Department for Environment and Rural Affairs (DEFRA). 2024. Ban on the sale and supply of disposable vapes in England. Final Stage impact assessment.
[564] HMT. 2022. The Green Book: appraisal and evaluation in central government.
[565] BBC. 2023. Vaping: High lead and nickel found in illegal vapes.
[566] Yang and others. 2023. The impact of flavored e-cigarette bans on e-cigarette use in three US states.

Regulate vape packaging and product presentation

Rationale for intervention

1074. The Tobacco and Related Products Regulations (TRPR) outlines the requirements relating to the labelling and presentation of vaping products. It sets out what can be written on a unit or container pack of the vape or refill container. Products may not, for example, suggest that a particular vape is less harmful than other vape or refill containers, has revitalising, energising, healing, rejuvenating, natural, or organic properties, and/or has other health or lifestyle benefits. It must also include a health warning.

1075. However, unlike tobacco packaging, vape packaging can come in different colours, styles, and shapes. They can include brand names and different types of images and formatting. The products themselves can be designed and displayed differently, in ways that can make them more attractive to children. While mod or tank devices are often wrapped in more neutral packaging, vape liquids and disposable vapes are regularly sold and marketed in a range of brightly coloured designs.

1076. Packaging and design features of vapes have been shown to appeal to children[567]. For example, packaging often accentuates sweet or fruit flavours[568], includes cartoons[569], or is designed to resemble food or drink products that are mostly marketed to youth, such as sweets or sugary drinks. All these factors can influence a child's intention to try different vaping products.

1077. Multiple countries, including Israel, Denmark, Finland, New Zealand, and the Netherlands have introduced the use of plain standardised packaging of vaping products, and some countries have made it mandatory that packaging must display health warnings.

1078. Although no studies have shown the real-world impact of standardised packaging for vaping products, evidence from experimental studies suggests that plain packaging may reduce the appeal of vaping products among youth.

1079. Research from King's College London (KCL) and ASH[570] found that youths (aged 11 to 18 years) had lower interest in trying vapes in standardised olive coloured packaging, in comparison to branded packaging. Conversely, there was no difference in appeal of products between branded, and plain standardised packs among adult respondents. This suggests that regulating vape packaging and product presentation may make products less appealing to youth, but not to adult smokers.

1080. Another recent study[571] that utilised a cross-sectional online survey to explore interest in trying, and harm perceptions of, vaping products in plain packaging also found that

[567] Laverty and others. 2016. Design and marketing features influencing choice of e-cigarettes and tobacco in the EU.
[568] Laestadius and others. 2019. From Apple to Werewolf: A content analysis of marketing for e-liquids on Instagram.
[569] Allem and others. 2019. Return of cartoon to market e-cigarette-related products.
[570] Taylor and others. 2023. Association of Fully Branded and Standardized e-Cigarette Packaging With Interest in Trying Products Among Youths and Adults in Great Britain.
[571] Simonavičius and others. 2023. Impact of E-liquid Packaging on Vaping Product Perceptions Among Youth in England, Canada, and the United States: A Randomized Online Experiment.

standardised packaging reduced the appeal of vaping products among youth aged 16 to 19 years in England, Canada, and the US. This study found that, compared with branded vape packaging, youths reported lower interest in trying e-liquids in white or olive coloured standardised packaging.

1081. In addition, within this study, youths aged 16 to 19 years in England, Canada, and the US were also found to inaccurately perceive e-liquids in white or olive coloured standardised packaging as equally or more harmful than smoking in comparison to e-liquids in branded packaging.

1082. This evidence demonstrates that vape packaging and product presentation does influence children's decision to vape, and therefore regulating these aspects of vapes will reduce the attractiveness of vapes to children, and in turn contribute to reducing youth vaping rates.

Description of options considered

1083. The Bill provides powers to regulate vaping and nicotine product retail packaging and product requirements.

1084. The previous government consulted on options that could be implemented using the powers conferred by the Bill, they were:

Option 1: Do nothing

1085. This option would mean there would continue to be no regulations on the packaging and product presentation of nicotine and non-nicotine vapes.

Option 2: prohibiting the use of cartoons, characters, animals, inanimate objects, and other child friendly imagery, on both the vape packaging and vape device

1086. This would still allow for colouring and tailored brand design. 35.8% of respondents to this question were in support of this option.

Option 3: prohibiting the use of all imagery and colouring on both the vape packaging and vape device

1087. This would still allow for branding such as logos and names. 18.2% of respondents to this question were in support of this option.

Option 3: prohibiting the use of all imagery and colouring and branding for both the vape packaging and vape device

1088. This is equivalent to the standardised packaging rules on tobacco. 46.1% of respondents to this question were in support of this option.

Indicative estimates for the costs and benefits of regulating vape packaging and product presentation

1089. This section sets out the expected costs and benefits of regulating vape packaging and product presentation, and where possible provides indicative estimates. As explained above, ahead of the government introducing secondary legislation to regulate vape packaging and product presentation, a further impact assessment of the specific options

would be completed and we would seek to improve our estimates, quantify more of the costs and benefits, and provide a NPV and EANDCB for the policy.

Potential impact

1090. The outcome of the estimated effect size is the reduction in the number of people we would expect to take up vaping because of regulating vape packaging and product presentation.

1091. The impact assessment on standardised packaging of tobacco[572] estimated a reduction of around 11% in the prevalence of ever smoking. As a hypothetical example, assuming a similar scale of impact for standardised packaging regulation of vapes (an 11% reduction), ever vaping prevalence of 18% among 11 to 17 year olds based on 2024 figures[573] could decrease to 16%.

1092. Based on an expert elicitation, it was estimated in the impact assessment on standardised packaging of tobacco that standardised packaging would reduce adult smoking prevalence by 4.8% after two years (meaning 2.4% per year). After accounting for other policies introduced around the same time which affected warnings on tobacco packaging, it was assumed that standardised packaging was estimated to reduce adult smoking prevalence by 3.8% after two years (meaning 1.9% per year).

1093. To provide indicative estimates for some of the costs and benefits described below, we have used an estimated reduction in vaping prevalence of 3.8% after two years for the impact regulating vape packaging and product presentation would have in England. We apply this to vaping prevalence for all ages in England.

1094. We recognise that regulating vape packaging and product presentation may not have the same impact on vaping prevalence as standardised packaging had on adult smoking prevalence. The exact impact would also depend on how vape packaging and product presentation is regulated. We would expect the impact on adult vaping and uptake of vaping among young people to be less the more choice manufacturers have on how they package and design their products.

Health benefits through reduced uptake of vaping among young people

1095. As described above, there are health risks associated with children and young people vaping, mainly due to the presence of nicotine in vapes.

1096. The potential impact section illustrated that restricting and regulating vape packaging and product presentation is expected to reduce the appeal of vapes to children, and therefore reduce the number of young people that vape. As a result, regulating vape packaging and product presentation is expected to provide health benefits through reduced uptake of vaping among young people.

1097. In the Government of Canada's regulatory impact analysis statement for the Tobacco and Vaping Products Act[574], it was assumed that the mortality and morbidity risks

[572] The Standardised Packaging of Tobacco Products Regulations 2015 (legislation.gov.uk)
[573] Action on Smoking and Health. 2024. Use-of-vapes-among-young-people-in-Great-Britain-2024.pdf (ash.org.uk)
[574] Canada Gazette, Part 1, Volume 155, Number 25: Order Amending Schedules 2 and 3 to the Tobacco and Vaping Products Act (Flavours).

associated with vaping are 20% of the mortality and morbidity impacts of cigarettes. This assumption was developed with members of an expert panel composed of five academics in tobacco control.

1098. In the Standardised Packaging for tobacco products impact assessment[575], it was estimated the discounted number of life years saved for each young person who does not take up smoking is 1.0. Based on this estimate and the evidence from Canada, and the RCP report we could estimate the number of life years gained for each young person that does not take up vaping to be 0.2. HMT's The Green Book[576] places a value of £70,000 on a QALY. In the impact assessment for Mandating quit information messages inside tobacco packs[577], we explained that it remains appropriate to use the same value of a QALY for life years where QALY estimates are not readily available. Based on the evidence from Canada, for every young person not taking up vaping, the benefits could be £14,000.

1099. However, there is still limited evidence on the health impacts of vaping, particularly the long-term harms of vaping and uncertainty on the number of young people that wouldn't take up vaping as a result of regulating vape packaging and product design. As a result, it has not been possible at this stage to quantify the health benefits of the reduction in the number of young people vaping because of this policy.

Health impacts of fewer people using vapes to quit smoking

1100. The potential impact section showed that adults that vape would be affected by regulating vape packaging and product presentation. This would include a proportion of adults that vape that use vapes as a smoking quit aid.

1101. According to ONS data on adult vaping prevalence[578], 31.6% of adults that currently vape are also current smokers and 18.7% are ex-smokers. The exact impact on the number of smokers not quitting and ex-smokers relapsing as a result of regulating would depend on what vape packaging and product presentation was regulated. Also, even if some smokers and ex-smokers stopped using vapes, it doesn't necessarily mean they would no longer quit or would relapse. There are other quit aids that smokers could try, such as other nicotine replacement therapies.

1102. Due to the uncertainty on the size of the impact that regulating vape packaging and product presentation would have on the number of current smokers not quitting and ex-smokers that relapse, we have not quantified the health impacts of fewer people using vapes to quit smoking.

Environmental benefits from reduced litter associated with fewer people vaping

1103. As described above, the increase in the use of vapes has negative environmental impacts, mainly due to the significant increase in the use of disposable vapes, which are often littered or disposed of incorrectly.

[575] DHSC. 2015. The Standardised Packaging of Tobacco Products Regulations 2015 (legislation.gov.uk).
[576] HMT. 2022. The Green Book: appraisal and evaluation in central government.
[577] DHSC. 2023. Tobacco pack inserts impact assessment.
[578] ONS. 2024. Adult smoking habits in the UK: 2023.

1104. The effect size section illustrated that regulating vape packaging and product presentation is expected to reduce the number of children and adults that vape. As a result, regulating vape packaging and product presentation is expected to reduce the amount of litter from vapes through reduced uptake of vaping.

1105. As explained above, research commissioned by Material Focus[579] found that almost 5 million disposable vapes are either littered or thrown away in general waste every week, equivalent to around 260 million a year. Given this policy would be expected to reduce the number of young people that vape, who predominately use disposable vapes, we would expect this policy to reduce the number of disposable vapes that are littered in the UK.

1106. Due to considerable uncertainty on the number of young people that wouldn't take up vaping, and number of adults that would stop vaping as a result of regulating vape packaging and product presentation, we have not quantified the environmental benefits of this policy.

1107. Ahead of the government introducing secondary legislation to regulate vape packaging and product presentation, a further impact assessment would be completed, at which point we would look to further quantify the environmental impacts of this policy.

Savings to government from reduced fires from nicotine and non-nicotine vapes

1108. Vapes use lithium-ion batteries. According to the National Fire Protection Association (NFPA), the likelihood of lithium-ion batteries overheating, catching on fire, or causing explosions increases when damaged, improperly used, charged, or stored. If disposed of in household waste or recycling it can cause fires in transport, landfill, or recyclers.

1109. One report estimated that in 2021 there were 201 fires in landfill sites per year. More recent survey results[580] reveal lithium batteries caused over 1,200 fires number of fires in bin lorries and on waste sites in the past year, which was a 71% increase from 700 fires in 2022. Based on this range of estimates, we use 700 as the central scenario.

1110. To be in line with the sales growth we have estimated in Table 34 we have assumed the same year-on-year growth would be applied to the number of lithium-ion battery fires over the appraisal period.

1111. An estimated 19% of lithium batteries paced on the UK market was accounted for by single use vapes[581]. Applying this to the number of fires described above produces the number of fires attributable to disposable vapes.

1112. As explained above, for our indicative estimates of the costs and benefits of restricting flavours we have used an estimated reduction in vaping prevalence of 3.8% after two years for the impact regulating vape packaging and product presentation would have in England. To provide an indicative estimate for this cost saving we assume this is the same as the reduction in demand for vapes as a result of this policy. Multiplying this

[579] Material Focus. 2023. Number of disposable single-use vapes thrown away have in a year quadrupled to 5 million per week.
[580] Material Focus. 2024. Over 1,200 battery fires in bin lorries and waste sites across the UK in the last year.
[581] Eunomia. 2023. Analysis of the market for vapes: exploring the environmental impacts of single-use vapes

reduction in demand by the estimated fires caused by vapes each year, this equates to around 24 fewer lithium-ion battery fires over the appraisal period.

1113. The unit cost of a lithium-ion fire can be estimated through the Home Office estimates of the average cost of all fires in 2020, £45,900[582]. Multiplying this by the estimated reduction in fires, provides an estimate for reduced cost of vaping-related fires.

1114. Based on this data, Table 89 shows the indicative estimate of the cost savings to government from reduced vaping related fires in the UK.

Table 89: Cost savings to government from reduced vaping related fires of regulations vape packaging and product presentation

	United Kingdom
2036	£0.5 million

Familiarisation costs

Manufacturers

1115. Vape manufacturers would be required to become familiar with any regulations on the packaging and product presentation of vapes. Guidance would be provided that manufacturers would have to be spend time reviewing.

1116. The total cost to vape manufacturers to review the guidance is estimated by multiplying the number of vape manufacturers in the industry by the employee time it would take to review the guidance and the median hourly wage.

1117. Based on information provided by MHRA from their vape product notification data, there are around 323 manufacturers of vapes in the UK, and around 71 importers of vapes. It is assumed this is also the number in England. It is also assumed that all 394 manufacturers and importers would expect have to read the new guidance to ensure that their products are compliant with the new regulations.

1118. We estimate the time taken for managers to familiarise themselves with the legislation based on typical technical text reading speeds (75 words per minute)[583]. Based on similar guidance that already exists on vape labelling[584] and product presentation[585], we would expect the new guidance that manufacturers have to review to be about 2000 words long. We would expect it to take each person in the vape manufacturer that needs to read the guidance around 27 minutes.

1119. It is uncertain how many people in each vape manufacturer would need to review the guidance. For this indicative estimate, we have assumed that one manager would need to review the guidance.

1120. ONS' Annual Survey of Hours and Earnings (ASHE)[586] provided a median hourly wage for production managers and directors in manufacturing of £24.95. Adjusting this hourly

[582] Home Office. 2023. Economic and social cost of fire.
[583] EFTEC. 2013. Evaluating the cost savings to business from revised EA guidance – method paper.
[584] MHRA. 2022. Chapter 8 – Labelling Guidance – Great Britain.
[585] MHRA. 2022. Chapter 5 - Presentation Guidance - Great Britain.
[586] ONS. 2023. Annual Survey of Hours and Earnings (ASHE).

wage for 2025 prices using GDP deflators[587], and by 19% to account for non-wage labour costs[588], the estimated hourly wage for a manager for a vape manufacturer is £30.43.

1121. Based on this data, Table 90 shows the indicative estimate of the one-off cost to vape manufacturers in the UK to familiarise themselves with the new regulations on vape packaging and product presentation.

Table 90: Familiarisation costs of regulations for vape packaging and product presentation for vape manufacturers

	United Kingdom
2027	£5,000

Retailers

1122. We also expect that retailers and wholesalers would need to spend time reviewing any new guidance to ensure that they are selling legal products. To estimate this cost for retailers and wholesalers, we use the same assumptions for the time it would take to review the guidance as for manufacturers. However, in practice we would expect retailers and wholesalers to need to spend less time on this.

1123. Data we have identified suggests that in the UK there are:

- 50,387 convenience stores[589], of which 71% are independently operated
- 5,944 Supermarkets[590,591] , excluding discounters that generally don't sell vapes
- 3,573 specialist vape shops[592]

1124. We do not know what proportion of these sell vapes, so we assume all do. Based on this, we estimate there are 58,905 retailers in the UK that sell vapes.

1125. It is assumed that the guidance would only be read by the shopkeeper and owners in each vape shop. We do not expect that they would need to pass the information to staff in the shop as the shopkeeper and owners are most likely to be responsible for ensuring that products in their stores are compliant with any new regulations.

1126. ONS' Annual Survey of Hours and Earnings (ASHE) provided a median hourly wage for shopkeepers and owners (retail and wholesale) of £12.13. Adjusting this hourly wage for 2025 prices using GDP deflators[593], and by 19% to account for non-wage labour costs[594], the estimated hourly wage for a manager or a retailer that sells vapes is £14.77.

[587] HMT. 2014. GDP deflators at market prices, and money GDP.
[588] Based on non-wage labour costs as a percentage of total labour costs. ONS estimated that the value of labour costs was estimated at £22.80 per hour at whole economy level and wage costs contributed £19.20, with non-wage costs, such as pensions and National Insurance contributions, making up the rest. Based on this estimate we have uplifted wage costs by 19% to account for non-wage costs. https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/bulletins/indexoflabourcostsperhourilch/julytoseptember2020
[589] Association of Convenience Stores. 2024. The Local Shop Report 2024. Accessed here: The Local Shop Report | ACS
[590] IGD. 2019. UK Grocery Store Numbers 2018.
[591] Data from 2018 as most recent we have been able to obtain.
[592] Cebr for UKVIA. 2022. Economic impact assessment of the vaping industry.
[593] HMT. 2014. [593] HMT. 2014. GDP deflators at market prices, and money GDP.
[594] Based on data on the non-wage percentage of labour costs from ONS. 2020. Index of Labour Costs per Hour, UK: July to September 2020.

1127. Based on this data, Table 91 shows the indicative estimate of the one-off cost to vape retailers in the UK to familiarise themselves with the new regulations on vape packaging and product presentation.

Table 91: Familiarisation costs of regulations for vape packaging and product presentation for vape retailers

	United Kingdom
2027	£120,000

Wholesalers

1128. For wholesalers, data from the ONS' Annual Business Survey[595] (ABS) shows there are 17,294 food, beverage, and tobacco wholesalers in the UK. Due to a lack of specific data for vape wholesalers, it is assumed this is also the number of vape wholesalers in the UK.

1129. As mentioned above, the ONS' Annual Survey of Hours and Earnings (ASHE) provided a median hourly wage for shopkeepers and owners (retail and wholesale) of £12.13. Adjusting this hourly wage for 2025 prices, and by 19% to account for non-wage labour costs, the estimated hourly wage for a manager or a retailer that sells vapes is £14.77.

1130. Based on this data, Table 92 shows the indicative estimate of the one-off cost to vape wholesalers in the UK to familiarise themselves with the new regulations on vape packaging and product presentation.

Table 92: Familiarisation costs of regulations for vape packaging and product presentation for vape wholesalers

	United Kingdom
2027	£120,000

Impact upon costs of manufacturing packaging and products

1131. Regulations on vape packaging and product presentation would mean vape manufacturers would have to make changes to the packaging and design of their products.

1132. The exact cost to manufacturers would depend on how much they need to change their packaging and product design, and the number of products, known as Stock Keeping Units (SKUs), they have on the market.

1133. The impact assessment for the Tobacco and Related Products Regulations (TRPR) 2016[596] provided estimates for the costs to tobacco and vape manufacturers to add new warnings on the packaging of their products. RAND Europe[597] assessed the potential one-off costs faced by manufacturers in order to redesign packaging. It was estimated that for tobacco manufacturers who were required to include pictorial warnings on packs of cigarettes and hand-rolling tobacco, it would cost between £17,000 and £19,000 per SKU. For minor redesigns of packaging, which was what vape manufacturers were assumed to need to make, evidence from the food industry suggested that a minor

[595] ONS. 2023. Non-financial business economy, UK: Sections A to S.
[596] The Tobacco and Related Products Regulations 2016 - Impact Assessment.
[597] Tiessen and others. 2011. Assessing the impacts of Revising the Tobacco Products Directive: Study to support a DG SANCO Impact Assessment.

redesign costs £1,700 to £3,400 per SKU, whilst a major redesign costs £5,900 to £7,600[597].

1134. Data from MHRA notification system suggests that there are over 500,000 notified vaping products legal for supply in the UK market. However, a lot of these products are unlikely to still be produced by manufacturers, so the number of products that vape manufacturers would have to redesign and change the packaging for as a result of any regulations would be much lower than this.

1135. Due to the large range in the possible cost of making changes to the design of vape packaging and products, and the uncertainty of the number of products that would require any redesigns, we have not provided an indicative estimate for this cost.

1136. Ahead of the government introducing secondary legislation to regulate vape packaging and presentation, a further impact assessment would be completed, at which point we would seek further evidence to quantify this cost.

Increase in transaction times

1137. If packaging for vapes becomes more standardised, we could expect it to take longer for shop assistants to select and serve a customer purchasing a vape. If this is the case retailers would bear some costs.

1138. To estimate the cost of additional serving time to retailers, we can multiply the additional serving time by the estimated number of vape sales, and by the average hourly wage of a sales assistant.

1139. In the Standardised Packaging of Tobacco Products Regulations 2015 (SPoT) impact assessment[598], it was expected that there would be a 2 second increase in transaction times for 1 month post-implementation. This was based on a study from Australia[599], where standardised packaging was introduced before it was in the UK.

1140. No further evidence from a study on the impact of standardised tobacco packaging for small businesses, or the consultation for the post-implementation review (PIR) of the SPoT[600], identified any evidence to contradict this assumption. Therefore, we assume the same additional serving time would be required for vape sales for a month post-implementation.

1141. As assumed in DEFRA's impact assessment for disposable vapes[601], using disposable vapes as a proxy for all vaping products, we have assumed the cost of a vape to be £5.30. This was collected[602] and then verified as part of DEFRA's stakeholder engagement process undertaken in Spring 2024. Whilst our analysis includes vapes

[598] DHSC. 2015. Standardised Packaging of Tobacco Products impact assessment.
[599] Wakefield and others. 2013. Product retrieval time in small tobacco retail outlets before and after the Australian plain packaging policy: real-world study.
[600] OHID. 2022. The Standardised Packaging of Tobacco Products Regulations 2015: post-implementation review.
[601] Department for Environment and Rural Affairs (DEFRA). 2024. Ban on the sale and supply of disposable vapes in England. Final Stage impact assessment.
[602] Defra research conducted in 2023 based on a sample (a compiled list of approximately 40 products) of products for sale from both online and in-store retailers, including specialist vape stores, newsagents and supermarkets

that are non-disposable we do not have an estimate for the average price of all vapes, but we expect them to have a higher retail price.

1142. As in the outlined in the *'Vape industry'* section (Paragraphs 415415415415 to 436) the vape market is expected to increase in the counterfactual scenario over the next 10 years.

1143. Based on the unit cost of a vape, and the overall market revenue, the total number of transactions would be around 430 million.

1144. ONS' Annual Survey of Hours and Earnings (ASHE) provided a median hourly wage for retail assistants of £11.00. Adjusting this hourly wage for 2025 prices, and by 19% to account for non-wage labour costs, the estimated hourly wage for a retail assistant is £13.42.

1145. Based on this data, Table 93 shows the indicative estimated cost to vape retailers in the UK of additional serving time following changes to vape packaging regulations.

Table 93: Cost of increase in transaction times due to regulating vape packaging and product presentation for vape retailers

	United Kingdom
2027	£470,000

1146. It is possible that this is an overestimate of the actual cost. The estimate for the number of transactions assumes that each person only ever buys one vape at a time. If it is the case that in some instances people purchase multiple vapes simultaneously, this would reduce the total number of vape transactions per year and reduce the cost of any increase in transaction times.

1147. The size of this cost will also depend on the exact details of any regulations that are introduced through secondary legislation. The cost will likely be higher the more standardised the packaging is required to be. The indicative cost estimated is most likely to be closest to the cost under Option 3 in the consultation, which prohibits the use of all imagery, colouring and branding on vape packaging. In contrast, the cost would likely be significantly less under Option 1 in the consultation, as vape manufacturers would still be able to vary the branding and colours on the packaging, making it easier for retailers to identify the different products.

Disposal costs

1148. If secondary legislation was implemented to restrict vape flavours, it is possible that vape retailers may need to dispose of non-compliant vape products.

1149. The extent to which this would be a cost to retailers would depend on the length on any transition period that retailers have to sell any non-compliant products. It would also depend on how much stock of vapes that retailers hold in reserve.

1150. It should be noted that in the impact assessment on standardised packaging of tobacco[603], for which there was a 12-month period to sell any non-compliant stock, it

[603] The Standardised Packaging of Tobacco Products Regulations 2015 (legislation.gov.uk)

was assumed that there would not be any significant disposal costs for retailers. This was mainly due to retailers, particularly small retailers, not carrying large stocks of tobacco in reserve due to the high cost of tobacco products.

1151. If any regulations were introduced through secondary legislation, further information would be sought to better understand the likelihood of this being a significant cost to retailers and inform the length of the transition period.

Reduced profits for vape retailers, manufacturers, and wholesalers

1152. The effect size illustrated that regulating vape packaging and product presentation is expected to reduce the number of children and adults that vape. As a result, regulating vape packaging and product presentation is expected to reduce the profits for vape retailers, wholesalers, and manufacturers through reduced vape sales. In this section we provide indicative estimates for the loss in profits based on a reduction in sales among all people that currently vape in England. However, it should be noted that, given it is already illegal for ages 17 and under to purchase vapes, any profit retailers, manufacturers, and wholesalers currently gain from sales from ages 17 and under is also illegal.

1153. The indicative estimate for the loss in profits is calculated by multiplying the reduction in sale in vapes by the specific profit margins for vapes for each stakeholder.

1154. The indicative estimates for the loss in profits is based on the estimated reduction in adult vaping prevalence from the impact standardised packaging was expected to have on smoking prevalence, 1.9% per year for two years, and the specific profit margins for vapes for each stakeholder.

1155. As assumed in DEFRA's impact assessment for disposable vapes[604], using disposable vapes as a proxy for all vape products, we have assumed the cost of a vape to be £5.30. This was collected[605] and then verified as part of DEFRA's stakeholder engagement process undertaken in Spring 2024. Whilst our analysis includes vapes that are non-disposable we do not have an estimate for the average price of all vapes, but we expect them to have a higher retail price.

1156. Based on ONS data, 8.4% of people aged 16 and older currently vape in England[606], and based on data from the Smoking, Drinking and Drugs use among Young People Survey 2021 (SDD), 8.6% of 11 to 15 year olds currently vape. This is equivalent to around 4.1 million people currently vaping in England[607]. The estimated number of vapes sold per year is around 430 million, or around 87 per vaper.

1157. Based on the estimated reduction in adult vaping prevalence, 1.9% per year for two years, it is estimated that the number of people that vape in England would reduce by around 70,000 in each of these years. Based on the estimated number of vapes

[604] Department for Environment and Rural Affairs (DEFRA). 2024. Ban on the sale and supply of disposable vapes in England. Final Stage impact assessment.
[605] Defra research conducted in 2023 based on a sample (a compiled list of approximately 40 products) of products for sale from both online and in-store retailers, including specialist vape stores, newsagents and supermarkets
[606] ONS. 2023. Adult smoking habits in the UK: 2022.
[607] ONS. 2022. Population estimates for the UK, England, Wales, Scotland and Northern Ireland.

purchased by each vaper each year, around 87, it is estimated that there would be a reduction of around 140 million over the 10 year appraisal period.

1158. The projections outlined in the '*Vape industry'* section only account for the disposable market which evidence suggests is around 50% of the market. Therefore we apply an uplift of 100% to the final estimated the profit loss to stakeholders to account for the wider market.

Retailers

1159. As assumed in DEFRA's impact assessment for disposable vapes[608], retailer profit margins of 45% are used in this analysis.

1160. To provide an indicative estimate for the reduction in profit for vape retailers, we adjust the profit per vape for 2027 prices and multiply it by the estimated reduction in vape sales. Future years costs are discounted at a rate of 3.5% in line with The Green Book[609].

1161. Table 94 shows the indicative estimates for the reduction in profit for vape retailers in the UK up to 2036 (borne by all vape retailers over 10 years).

1162. It is likely that any loss in profits will at least in part be offset by increased profits on goods and services purchased in place of vapes.

Table 94: Reduced profits from regulating vape packaging and product presentation for vape retailers

	United Kingdom
2036	£625 million

Wholesalers

1163. As assumed in DEFRA's impact assessment for disposable vapes[610], wholesaler profit margins of 12% are used in this analysis.

1164. To provide an indicative estimate for the reduction in profit for vape wholesalers, we adjust this profit per vape for 2025 prices and multiply it by the estimated reduction in vape sales. Future years costs are discounted at a rate of 3.5% in line with The Green Book[611].

1165. Table 95 shows the indicative estimates for the reduction in profit for vape wholesalers in the UK up to 2036 (borne by all vape wholesalers over 10 years).

Table 95: Reduced profits from regulating vape packaging and product presentation for vape wholesalers

	United Kingdom
2036	£75 million

[608] Department for Environment and Rural Affairs (DEFRA). 2024. Ban on the sale and supply of disposable vapes in England. Final Stage impact assessment.
[609] HMT. 2022. The Green Book: appraisal and evaluation in central government.
[610] Department for Environment and Rural Affairs (DEFRA). 2024. Ban on the sale and supply of disposable vapes in England. Final Stage impact assessment.
[611] HMT. 2022. The Green Book: appraisal and evaluation in central government.

1166. It is likely that any loss in profits will at least in part be offset by increased profits on goods and services purchased in place of vapes.

Manufacturers

1167. As assumed in DEFRA's impact assessment for disposable vapes[612], manufacturer profit margins of 15% are used in this analysis.

1168. To provide an indicative estimate for the reduction in profit for vape manufacturer, we adjust this profit per vape for 2027 prices and multiply it by the estimated reduction in vape sales. Future years costs are discounted at a rate of 3.5% in line with The Green Book[613].

1169. Table 96 shows the indicative estimates for the reduction in profit for vape manufacturers in the UK up to 2036 (borne by all vape manufacturers over 10 years).

Table 96: Reduced profits from regulating vape packaging and product presentation for vape manufacturers

	United Kingdom
2035	£83 million

1170. It is likely that any loss in profits will at least in part be offset by increased profits on goods and services purchased in place of vapes.

Enforcement costs

1171. As The Bill only provides a regulation making power, there are no enforcement costs arising from this measure. It would be the responsibility of each local authority in England to enforce any regulations that are made using the powers conferred by the Bill to restrict vape flavours.

1172.

1173. The illicit vape market has been increasing over the last few years and could be exacerbated if vape packaging and product packaging regulations were implemented using the powers created by this Bill. Intelligence by Trading Standards and the Chartered Trading Standards Institute estimates that over 25% of the products on the UK market are non-compliant with current legislation.

Regulating point of sale displays for vapes

Rationale for intervention

1174. There are currently no restrictions around the display of vapes at the point of sale in shops.

1175. A recent observational study published in 2022[614] explored the nature and prevalence of vape point of sale displays in major retailers of tobacco in two areas of England. The

[612] Department for Environment and Rural Affairs (DEFRA). 2024. Ban on the sale and supply of disposable vapes in England. Final Stage impact assessment.
[613] HMT. 2022. The Green Book: appraisal and evaluation in central government.
[614] Brocklebank and others. 2022. Electronic cigarette and smoking paraphernalia point of sale displays: an observational study in England.

study found that point of sale displays were near ubiquitous and highly visible in major tobacco retailers.

1176. Analysis from Imperial College London looked at data collected in the annual ASH survey of youth vaping[615]. Comparing 12,445 responses to an online survey by children aged between 11 to 18 over the 5 years from 2018 to 2022, researchers found increases in the proportion of children reporting that they had seen vapes on display in shops.

- In supermarkets, the likelihood of noticing vapes increased from 57.4% in 2018 to 66.5% in 2022.

- In small shops, the likelihood of noticing vapes increased from 70.8% to 71.6%.

1177. This is important to acknowledge, as two experimental studies have found that young people who are exposed to retail displays relating to tobacco products, including vapes, may be more susceptible to smoking if they regularly visit retail stores[616], and be more willing to use vapes in the future, compared with those not exposed to the displays[617].

1178. A cross sectional survey[618] conducted in Scotland also identified that adolescents who recalled seeing vapes point of sale displays in small shops and online were more likely to have tried a vape. In addition, adolescents who recalled seeing vape point of sale displays in small shops and supermarkets were more likely to intend to use vapes in the next 6 months.

1179. This evidence demonstrates that children notice point of sale displays for vapes in shops, which may impact children's attitudes and behaviours towards vaping. Therefore, we would expect that regulating point of sale displays for vapes will reduce the likelihood of children noticing vapes in shops, which in turn will contribute to reducing youth vaping rates.

Description of options considered

1180. The Bill provides regulation making powers to regulate displays of vaping and nicotine products.

1181. The government has consulted on options that could be implemented using the powers conferred by the Bill, they are:

Option 1: Do nothing

1182. This option would mean there would continue to be no regulations on point of sale displays for nicotine and non-nicotine vapes.

Option 2: Vapes must be kept behind the counter and cannot be on display

[615] Parnham and others. 2023. Changing awareness and sources of tobacco and e-cigarettes among children and adolescents in Great Britain.
[616] Blackwell and others. 2023. Impact of e-cigarette retail displays on attitudes to smoking and vaping in children: an online experimental study.
[617] Dunbar and others. 2019. Exposure to the Tobacco Power Wall Increases Adolescents' Willingness to Use E-cigarettes in the Future.
[618] Best and others. 2016. Relationship between e-cigarette point of sale recall and e-cigarette use in secondary school children: a cross-sectional study.

1183. This is equivalent to the point-of-sale display restrictions for tobacco products. 68.3% of those who responded to this question selected this option.

Option 3: Vapes must be kept behind the counter but can be on display

1184. 31.7% of respondents to this question selected this option.

Indicative estimates for the costs and benefits of regulating point of sale displays

1185. This section sets out the expected costs and benefits of regulating point of sale displays for vapes, and where possible provides indicative estimates. As explained above, ahead of the government introducing secondary legislation to restrict point of sale display, a further impact assessment of the specific options would be completed.

Potential impact

1186. The outcome of the estimated effect size is the reduction in the number of people we would expect to take up vaping because of regulating point of sale displays.

1187. There is limited evidence on the impact of vape displays in shops on the current vaping rates. However, we can draw parallels from the display regulations currently in place for tobacco (option 1). The impact assessment on the prohibition of tobacco displays in shops[619] estimated a reduction of around 15% in the prevalence of regular smokers aged 11 to 15. As a hypothetical example, assuming a similar scale of impact for display regulation of vapes (a 15% reduction), regular vaping prevalence of 4.2% among those aged 11 to 17, based on 2024 figures[620], could decrease to 3.6%.

1188. For adults, the impact assessment on the prohibition of tobacco displays in shops estimated an average annual reduction in smoking prevalence of 0.04 percentage points over 10 years. As a hypothetical example, assuming a similar scale of impact for display regulation of vapes, adult vaping prevalence could reduce from 8.4%, based on 2022 figures, to 8.0% after 10 years.

1189. To provide indicative estimates for some of the costs and benefits described below, we have used an estimated reduction in current vaping prevalence of 0.04 percentage points for people aged 11 and older in England.

1190. We recognise that regulating vape point of sale displays may not have the same impact on vaping prevalence for all ages as the prohibition of tobacco displays in shops had on adult smoking prevalence. The exact impact would also depend on how vape packaging and product presentation is regulated. We would expect the impact on vaping prevalence to be smaller the less prohibitive any regulations on vape point of sale displays are, but also have less of an impact on reducing uptake of vaping among young people.

Health benefits through reduced uptake of vaping among young people

[619] Department of Health. 2011. Impact assessment on the Prohibition of Display of Tobacco Products at the Point of Sale in England.
[620] Action on Smoking and Health. 2024. Use of vapes (e-cigarettes) among young people in Great Britain.

1191. As described above, there are health risks associated with young people vaping, mainly due to the presence of nicotine in vapes.

1192. The potential impact section illustrated that regulating vape point of sale displays is expected to reduce the appeal of vapes to children, and therefore reduce the number of young people that vape. As a result, regulating vape point of sale displays is expected to provide health benefits through reduced uptake of vaping among young people.

1193. In the Government of Canada regulatory impact analysis statement for the Tobacco and Vaping Products Act[621], it was assumed that the mortality and morbidity risks associated with vaping are 20% of the mortality and morbidity impacts of cigarettes. This assumption was developed with members of an expert panel composed of five academics in tobacco control.

1194. In the Standardised Packaging for Tobacco Products impact assessment[622], it was estimated the discounted number of life years saved for each young person who does not take up smoking is 1.0. Based on this estimate and the evidence from Canada and the RCP report, we could estimate the number of life years gained for each young person that does not take up vaping to be 0.2. HMT's The Green Book[623] places a value of £70,000 on a QALY. In the impact assessment for Mandating quit information messages inside tobacco packs[624], we explained that it remains appropriate to use the same value of a QALY for life years where QALY estimates are not readily available. Based on the evidence from Canada and the RCP report, for every young person not taking up vaping, the benefits could be £14,000.

1195. However, there is still limited evidence on the health impacts of vaping, particularly the long-term harms of vaping and uncertainty on the number of young people that wouldn't take up vaping as a result of regulating vape point of sale displays. As a result, it has not been possible at this stage to quantify the health benefits of the reduction in the number of young people vaping because of this policy.

Health impacts of fewer people using vapes to quit smoking

1196. The potential impact section showed that adults that vape would be affected by regulating point of sales displays for vapes. This would include a proportion of adults that use vapes as a smoking quit aid.

1197. According to ONS data on adult vaping prevalence[625], 31.6% of adults that currently vape are also current smokers, and 18.7% are ex-smokers.

1198. The exact impact would depend on how vape point of sale displays are regulated. Also, even if some smokers and ex-smokers stopped using vapes, it doesn't necessarily mean they would no longer quit or relapse. There are other quit aids that smokers could try, such as other nicotine replacement therapies. Funding is also available to support people to quit smoking and additional investment was announced last year including an

[621] Canada Gazette, Part 1, Volume 155, Number 25: Order Amending Schedules 2 and 3 to the Tobacco and Vaping Products Act (Flavours).
[622] DHSC. 2015. The Standardised Packaging of Tobacco Products.
[623] HMT. 2022. The Green Book: appraisal and evaluation in central government.
[624] DHSC. 2023. Tobacco pack inserts impact assessment.
[625] ONS. 2024. Adult smoking habits in the UK: 2023.

additional £70 million per year to support local authority-led stop smoking services and £15 million per year for new national campaigns, which will include communicating the benefits of quitting and the support available.

1199. Due to the uncertainty on the size of the impact that regulating vape point of sale displays would have on the number of current smokers not quitting and ex-smokers that relapse, we have not quantified the health impacts of fewer people using vapes to quit smoking.

Environmental benefits from reduced litter associated with fewer people vaping

1200. As described above, the increase in the use of vapes has negative environmental impacts, mainly due to the significant increase in the use of disposable vapes, which are often littered or disposed of incorrectly.

1201. The effect size section illustrated that regulating point of sale displays is expected to reduce the number of children and adults that vape. As a result, regulating point of sale displays is expected to reduce the amount of litter from vapes through reduced uptake of vaping.

1202. As explained above, research commissioned by Material Focus[626] found that almost 5 million disposable vapes are either littered or thrown away in general waste every week, equivalent to around 260 million a year. Given this policy would be expected to reduce the number of young people that vape, who predominately use disposable vapes, we would expect this policy to reduce the number of disposable vapes that are littered in England.

1203. Due to considerable uncertainty on the number of young people that wouldn't take up vaping and number of adults that would stop vaping as a result of regulating point of sale displays for vapes, we have not quantified the environmental benefits of this policy.

Savings to government from reduced fires from nicotine and non-nicotine vapes

1204. Vapes use lithium-ion batteries. According to the National Fire Protection Association (NFPA), the likelihood of lithium-ion batteries overheating, catching on fire, or causing explosions increases when damaged, improperly used, charged, or stored. If disposed of in household waste or recycling it can cause fires in transport, landfill, or recyclers.

1205. One report estimated that in 2021 there were 201 fires in landfill sites per year. More recent survey results[627] reveal lithium batteries caused over 1,200 fires number of fires in bin lorries and on waste sites in the past year, which was a 71% increase from 700 fires in 2022. Based on this range of estimates, we use 700 as the central scenario.

1206. To be in line with the sales growth we have estimated in Table 34, we have assumed the same year-on-year growth would be applied to the number of lithium-ion battery fires over the appraisal period.

[626] Material Focus. 2023. Number of disposable single-use vapes thrown away have in a year quadrupled to 5 million per week.
[627] Material Focus. 2024. Over 1,200 battery fires in bin lorries and waste sites across the UK in last year.

1207. An estimated 19% of lithium batteries paced on the UK market was accounted for by single use vapes[628]. Applying this to the number of fires described above produces the number of fires attributable to disposable vapes.

1208. As explained above, for our indicative estimates of the costs and benefits of restricting flavours we have used an estimated reduction in vaping prevalence of 3.8% after two years for the impact regulating vape packaging and product presentation would have in England. To provide an indicative estimate for this cost saving we assume this is the same as the reduction in demand for vapes as a result of this policy. Multiplying this reduction in demand by the estimated fires caused by vapes each year, this equates to around 50 fewer lithium-ion battery fires over the appraisal period.

1209. The unit cost of a lithium-ion fire can be estimated through the Home Office estimates of the average cost of all fires in 2020, £45,900[629]. Multiplying this by the estimated reduction in fires, provides an estimate for reduced cost of vaping-related fires.

1210. Based on this data, Table 97 shows the indicative estimate of the cost savings to government from reduced vaping related fires in the UK.

Table 97: Cost savings to government from reduced vaping related fires for point of sale displays for vapes regulations

	United Kingdom
2036	£2.0 million

Familiarisation costs

1211. Vape retailers would be required to become familiar with any regulations on point of sale displays for vapes. Guidance would be provided that retailers would have to spend time reviewing.

1212. The total cost to vape retailers to review the guidance is estimated by multiplying the number of vape retailers in the industry by the employee time it would take to review the guidance and the median hourly wage.

1213. We estimate the time taken for managers to familiarise themselves with the legislation based on typical technical text reading speeds (75 words per minute)[630]. Based on previous guidance on the display and pricing of tobacco products in England for retailers[631], we would expect the new guidance that retailers would have to review to be about 8000 words long. We would expect it to take retailers around 1 hour 30 minutes to review.

1214. Data we have identified suggests that in the UK there are:

- 50,387 convenience stores[632], of which 71% are independently operated.

[628] Eunomia. 2023. Analysis of the market for vapes: exploring the environmental impacts of single-use vapes.
[629] Home Office. 2023. Economic and social cost of fire.
[630] Economics For The Environment Consultancy. 2013. "Evaluating the cost savings to business from revised EA guidance – method paper".
[631] DH and Chartered Trading Standards Institute. Guidance on the display and pricing of tobacco products in England, for tobacco retailers and enforcement officers.
[632] Association of Convenience Stores. 2024. The Local Shop Report 2024. Accessed here: The Local Shop Report | ACS

- 5,944 Supermarkets[633, 634], excluding discounters that generally don't sell vapes,
- 3,573 specialist vape shops[635]

1215. We do not know what proportion of these sell vapes, so we assume all do. Based on this, we estimate there are 58,905 retailers in the UK that sell vapes.

1216. It is assumed that the guidance would only be read by one shopkeeper or owner in each vape shop. We do not expect that they would need to pass the information to staff in the shop, as the shopkeeper and owners are most likely to be responsible for ensuring that the point of sale displays in their stores are compliant with any new regulations.

1217. ONS' Annual Survey of Hours and Earnings (ASHE) provided a median hourly wage for shopkeepers and owners (retail and wholesale) of £12.13. Adjusting this hourly wage for 2025 prices using GDP deflators[636], and by 19% to account for non-wage labour costs[637], the estimated hourly wage for a manager or a retailer that sells vapes is £14.77.

1218. Based on this data, Table 98 shows the indicative estimate of the one-off cost to vape retailers in the UK to familiarise themselves with any new regulations on vape point of sale displays.

Table 98: Familiarisation costs of regulations for point of sale displays for vapes for vape retailers

	United Kingdom
2027	£1.3 million

Storage installation costs

1219. If secondary legislation was implemented to regulate point of sale displays for vapes, retailers that sell vapes would need to install new storage units.

1220. The cost to retailers is estimated by multiplying the number of stores that would need to install new storage by the cost of installing the necessary storage.

1221. As explained above, there are an estimated 58,905 retailers in the UK that sell vapes.

1222. The impact assessment for the prohibition of the display of tobacco products at the point of sale[638] estimated that installing magnetic covers would cost £450 per small store and £850 per large store (in 2010). The PIR for the tobacco point of sale display ban[639] did not find any further evidence that could be verified to suggest a higher cost per store. As we do not know the split of the type of stores, we could use the mid-point of this range (£600) to give an estimate for the cost per store of installing the necessary storage units in each store that sells vapes. As this estimate is quite old now, we have adjusted it to

[633] IGD. 2019. UK Grocery Store Numbers 2018.
[634] Data from 2018 as most recent we have been able to obtain.
[635] Cebr for UKVIA. 2022. Economic impact assessment of the vaping industry.
[636] HMT. 2014. GDP deflators at market prices, and money GDP
[637] Based on data on the non-wage percentage of labour costs from ONS. 2020. Index of Labour Costs per Hour, UK: July to September 2020.
[638] DHSC. 2011. Impact Assessment on the Prohibition of Display of Tobacco Products at the Point of Sale in England
[639] DHSC. 2021. A Post Implementation Review Report of Tobacco Legislation Coming into Force Between 2010-2015

2027 prices using the GDP deflator[640] to account for inflation. The updated estimate for the cost per store of installing necessary storage units is £880.

1223. A large amount of shops that sell vapes that will need to install storage will likely already have storage cabinets due to selling tobacco. For non-specialist and specialist retailers of food, beverages, and tobacco, it is assumed that only 50% of the storage cost would apply. For specialist vape shops, 100% of the storage cost is assumed to apply.

1224. Based on this data, Table 99 shows the indicative estimate for the one-off cost to vape retailers of installing necessary storage to ensure vapes are not on display in shops (of which around £2.5 million is for specialist vape shops).

Table 99: Storage installation costs for vape retailers

	United Kingdom
2027	£26 million

1225. For the cost in Table 99, around £3 million is for specialist vape shops in the UK.

1226. This cost is likely to be significantly lower under any regulations that are enacted that still allow vapes to be on display in shops. In addition, retailers that sell tobacco are already not allowed to display tobacco products in shops, and keep them in a storage unit. Therefore, at least a proportion of retailers that sell tobacco and vapes would already have the necessary storage units and would not incur any additional costs.

1227. Ahead of the government introducing secondary legislation, further information would be sought to better understand this cost.

Increase in transaction times

1228. If secondary legislation was implemented to regulate point of sale displays for vapes, it is likely to take longer for retailers to serve customers. If this is the case, retailers would bear some costs.

1229. To estimate the cost of additional serving time to retailers, we can multiply the additional serving time by the estimated number of vape sales, and by the average hourly wage of a sales assistant.

1230. In the impact assessment for the prohibition of the display of tobacco products at the point of sale[641], it was estimated that serving time would increase by 2 seconds per transaction. The PIR for the tobacco point of sale display ban did not find any further evidence to suggest a different increase in serving time. Therefore, we assume the same additional serving time would be required for vape sales.

1231. As assumed in DEFRA's disposable vapes impact assessment[642], using disposable vapes as a proxy for all vape products, we have assumed the cost of a vape to be

[640] HMT. 2014. GDP deflators at market prices, and money GDP.
[641] Department of Health. 2011. Impact Assessment on the Prohibition of Display of Tobacco Products at the Point of Sale in England
[642] Department for Environment and Rural Affairs (DEFRA). 2024. Ban on the sale and supply of disposable vapes in England. Final Stage IA.

£5.30. This was collected[643] and then verified as part of DEFRA's stakeholder engagement process undertaken in Spring 2024. Whilst our analysis includes vapes that are non-disposable we do not have an estimate for the average price of all vapes, but we expect them to have a higher retail price.

1232. Based on ONS data, 8.4% of people aged 16 and older currently vape in England[644], and based on data from the Smoking, Drinking and Drugs use among Young People Survey 2021 (SDD), 8.6% of 11 to 15 year olds currently vape. This is equivalent to around 4.1 million people currently vaping in England[645]. The estimated number of vapes sold per year is around 430 million in the first year, or around 87 per vaper.

1233. ONS' Annual Survey of Hours and Earnings (ASHE) provided a median hourly wage for retail assistants of £11.00. Adjusting this hourly wage for 2027 prices, and by 19% to account for non-wage labour costs, the estimated hourly wage for a retail assistant is £15.32.

1234. Based on this data, Table 100 shows the indicative estimated cost to vape retailers in England and the UK of additional serving time up to 2036 following changes to vape point of sale display regulations. Future years costs are discounted at a rate of 3.5% in line with The Green Book.

Table 100: Cost of increase in transaction times due to regulating vape point of sale displays for vape retailers

	United Kingdom
2036	£68 million

1235. It is possible that this is an overestimate of the actual cost. The estimate for the number of transactions assumes that each person only ever buys one vape at a time. If it is the case that in some instances people purchase multiple vapes simultaneously, this would reduce the total number of vape transactions per year and reduce the cost of any increase in transaction times.

1236. The size of this cost will also depend on the exact details of any regulations that are brought forward through secondary legislation. The indicative estimated cost above is more likely to be the cost if vapes are required to not be on display in shops at all, as retailers will need to open a storage unit to find the product the customer has asked for. If vapes need to be behind the counter but are still permitted to be on display, it is likely the cost to retailers will be lower than the indicative estimate above.

1237. In addition, it also includes all shops that sell vapes. Ahead of introducing secondary legislation to regulate point of sale for vapes, there will be considerations on whether any types of shops that sell vapes should be excluded. The exclusion of any shops would lower the estimated additional transaction costs of this policy.

Increase in time for stock taking

[643] Defra research conducted in 2023 based on a sample (a compiled list of approximately 40 products) of products for sale from both online and in-store retailers, including specialist vape stores, newsagents and supermarkets
[644] ONS. 2023. Adult smoking habits in the UK: 2022.
[645] ONS. 2022. Population estimates for the UK, England, Wales, Scotland and Northern Ireland.

1238. If secondary legislation was introduced to regulate point of sale displays for vapes, it may take more time for retailers to assess stock for stock-taking, ordering stock, and restocking.

1239. To estimate the cost of additional stock-taking time for retailers, we can multiply the additional stock-taking time by the estimated number of retailers that sell vapes, and by the average hourly wage of a sales assistant.

1240. In the impact assessment for the prohibition of the display of tobacco products at the point of sale[646], it was estimated that the regulations would increase stock-taking time by 1 hour per week. The PIR for the tobacco point of sale display ban did not find any further evidence to suggest a different increase in stock-taking time. Therefore, we assume the same additional stock-taking time would be required for vapes.

1241. As explained above, we estimate there are 58,905 retailers in the UK that sell vapes.

1242. ONS' Annual Survey of Hours and Earnings (ASHE) provided a median hourly wage for retail assistants of £11.00. Adjusting this hourly wage for 2025 prices, and by 19% to account for non-wage labour costs, the estimated hourly wage for a retail assistant is £15.32.

1243. A large amount of shops that sell vapes would already have storage units for tobacco products. Therefore, if vapes were in similar storage units, any regulations on point of sale displays for vapes would not mean it would take as much additional time for these retailers to assess stock for stock-taking, ordering stock, and restocking. For non-specialist and specialist retailers of food, beverages, and tobacco, it is assumed that only 50% of the increase in time for stock taking cost would apply. For specialist vape shops, 100% of the cost is assumed to apply.

1244. Based on this data, Table 101 shows the indicative estimated cost to vape retailers in the UK of additional stock-taking time up to 2036, following the introduction of point of sale display regulations for vapes. Future years costs are discounted at a rate of 3.5% in line with The Green Book[647].

Table 101: Cost of increase in stocking taking times due to regulating vape point of sale displays for vape retailers

	United Kingdom
2036	£170 million

1245. However, as with the cost of additional serving time, this cost will vary depending on the exact details of any regulations that are brought forward through secondary legislation. The indicative estimated cost above is more likely to be the cost if vapes are required to not be on display in shops at all, as retailers will need to open a storage unit to assess the stock they have. If vapes need to be behind the counter but are still permitted to be on display, it is likely the cost to retailers will be lower than the indicative estimate above.

[646] DHSC. 2011. Impact Assessment on the Prohibition of Display of Tobacco Products at the Point of Sale in England.
[647] HMT. 2022. The Green Book: appraisal and evaluation in central government.

Reduced profits for vape retailers, manufacturers, and wholesalers

1246. The effect size illustrated that regulating vape point of sale displays in shops is expected to reduce the number of children and adults that vape. As a result, regulating vape point of sale displays is expected to reduce the profits for vape retailers, wholesalers, and manufacturers through reduced vape sales. In this section, we do provide indicative estimates for the loss in profits based on a reduction in sales among all people that currently vape in England. However, it should be noted that, given it is already illegal for ages 17 and under to purchase vapes, any profit retailers, manufacturers, and wholesalers currently gain from sales from ages 17 and under is also illegal.

1247. The indicative estimates for the loss in profits is based on an estimated annual reduction in vaping prevalence of 0.04 percentage points, the same as the assumption for the reduction in adult smoking prevalence in the impact assessment for the prohibition of tobacco displays in shops.

1248. As assumed in DEFRA's disposable vapes impact assessment[648], using disposable vapes as a proxy for all vape products, we have assumed the cost of a vape to be £5.30. This was collected[649] and then verified as part of DEFRA's stakeholder engagement process undertaken in Spring 2024. Whilst our analysis includes vapes that are non-disposable we do not have an estimate for the average price of all vapes, but we expect them to have a higher retail price.

1249. Based on ONS data, 8.4% of people aged 16 and older currently vape in England[650], and based on data from the Smoking, Drinking and Drugs use among Young People Survey 2021 (SDD), 8.6% of 11 to 15 year olds currently vape. This is equivalent to around 4.1 million people currently vaping in England[651]. The estimated number of vapes sold per year is around 430 million in the first year, or around 87 per vaper.

1250. Based on ONS and SDD data on vaping prevalence and population estimates, vaping prevalence for all aged 11 and older is around 8.4%. A 0.04 percentage point reduction in vaping prevalence would reduce the number of people that vape in England by around 20,000 each year. Multiplying this by the estimated number of vapes purchased by each person gives an estimated reduction in vapes purchased per year in England of around 115 million over the 10-year appraisal period.

1251. The projections outlined in the '*Vape industry'* section only account for the disposable market which evidence suggests is around 50% of the market. Therefore we apply an uplift of 100% to the final estimated the profit loss to stakeholders to account for the wider market.

Retailers

[648] Department for Environment and Rural Affairs (DEFRA). 2024. Ban on the sale and supply of disposable vapes in England. Final Stage impact assessment.
[649] Defra research conducted in 2023 based on a sample (a compiled list of approximately 40 products) of products for sale from both online and in-store retailers, including specialist vape stores, newsagents and supermarkets
[650] ONS. 2023. Adult smoking habits in the UK: 2022.
[651] ONS. 2022. Population estimates for the UK, England, Wales, Scotland and Northern Ireland.

1252. As assumed in DEFRA's Ban on the sale and supply of disposable vapes in England impact assessment[652], retailer profit margins of 45% are used in this analysis.

1253. To provide an indicative estimate for the reduction in profit for vape retailers, we adjust the profit per vape for 2027 prices and multiply it by the estimated reduction in vape sales. Future years costs are discounted at a rate of 3.5% in line with The Green Book[653].

1254. Table 102 shows the indicative estimates for the reduction in profit for vape retailers in the UK up to 2036 (borne by all vape retailers over 10 years).

Table 102: Reduced profits from regulating vape point of sale displays for vape retailers

	United Kingdom
2036	£428 million

1255. It is likely that any loss in profits will at least in part be offset by increased profits on goods and services purchased in place of vapes.

Wholesalers

1256. As assumed in DEFRA's Ban on the sale and supply of disposable vapes in England IA[654], wholesaler profit margins of 12% are used in this analysis.

1257. To provide an indicative estimate for the reduction in profit for vape wholesalers, we adjust this profit per vape for 2027 prices and multiply it by the estimated reduction in vape sales. Future years costs are discounted at a rate of 3.5% in line with The Green Book[655].

1258. Table 103 shows the indicative estimates for the reduction in profit for vape wholesalers in the UK up to 2036 (borne by all vape retailers over 10 years).

Table 103: Reduced profits from regulating vape point of sale displays for vape wholesalers

	United Kingdom
2036	£52 million

1259. It is likely that any loss in profits will at least in part be offset by increased profits on goods and services purchased in place of vapes.

Manufacturers

1260. As assumed in DEFRA's Ban on the sale and supply of disposable vapes in England impact assessment[656], manufacturer profit margins of 15% are used in this analysis.

1261. To provide an indicative estimate for the reduction in profit for vape manufacturer, we adjust this profit per vape for 2027 prices and multiply it by the estimated reduction in

[652] Department for Environment and Rural Affairs (DEFRA). 2024. Ban on the sale and supply of disposable vapes in England. Final Stage impact assessment.
[653] HMT. 2022. The Green Book: appraisal and evaluation in central government.
[654] Department for Environment and Rural Affairs (DEFRA). 2024. Ban on the sale and supply of disposable vapes in England. Final Stage impact assessment.
[655] HMT. 2022. The Green Book: appraisal and evaluation in central government.
[656] Department for Environment and Rural Affairs (DEFRA). 2024. Ban on the sale and supply of disposable vapes in England. Final Stage IA.

vape sales. Future years costs are discounted at a rate of 3.5% in line with The Green Book[657].

1262. Table 104 shows the indicative estimates for the reduction in profit for vape manufacturers in the UK up to 2036 (borne by all vape retailers over 10 years).

Table 104: Reduced profits from regulating vape point of sale displays for vape manufacturers

	United Kingdom
2036	£57 million

1263. It is likely that any loss in profits will at least in part be offset by increased profits on goods and services purchased in place of vapes.

Enforcement costs

1264. As the Bill only provides a regulation making power, there are no enforcement costs arising from this measure. It would be the responsibility of each local authority in England to enforce any regulations that are made using the powers conferred by the Bill to restrict vape flavours.

Small and Micro Business Assessment (SaMBA)

1265. As explained above, when any of the vaping policies included within the Bill that are currently powers are brought forward through secondary legislation, a more detailed analysis of the finalised policies will be undertaken. This will also include a more detailed Small and Micro Business Assessment (SaMBA).

1266. At this stage we have provided an initial assessment of the wider impacts of the vaping policies.

1267. For the purposes of this Small and Micro Business Assessment (SaMBA) we have assumed that no small and micro businesses would be exempted from any of the regulations. In practice, it may be the case that for some of the regulations, some businesses, which includes small and micro businesses, are exempted. For example, it may be appropriate to exempt specialist vape retailers from certain regulations on point of sale displays for vapes.

1268. The consultation asked whether respondents thought that there should be exemptions for specialist vape shops. 48.5% of those who responded to this question said yes and thought that exemptions should be made for specialist vape shops. 46.1% said no, and 5.5% didn't know.

1269. The only small and micro businesses we have considered in this SaMBA are retailers. Due to limited data and evidence, we are not aware of the proportion of vape wholesalers and manufacturers that are small and micro businesses, although we recognise that there may be some vape wholesalers and vape manufacturers that are small and micro businesses. Impact assessments for any secondary legislation for

[657] HMT. 2022. The Green Book: appraisal and evaluation in central government.

these policies would look to improve the SaMBA for vape retailers, wholesalers, and manufacturers.

1270. The ACS Local Shop Report 2023 put the number of convenience stores in mainland UK to be 50,387 in 2024[658], of which 71% are independent retailers (we assume all multiple operators are not small and micro businesses).

1271. Additionally, we estimate there are 3,573 specialist vape retailers in the UK that sell vapes and we assume all are small and micro businesses. We recognise that this may be an overestimate as some of these are likely to be larger chains.

1272. Based on these categories of stores, we estimate that there are 39,348 vape retailers in England that are small and micro businesses. This is around 65% of our estimate for the total number of vape retailers in the UK. We do not have specific data on the proportion of sales of vapes that are in small and micro retailers. We have instead assumed that small and micro retailers account for around 65% of the sales of vapes in the UK.

1273. These proportions have been applied to our indicative estimates of the costs of these policies to provide indicative estimates for the costs of each of the vaping policies that could be incurred by small and micro businesses, specifically retailers.

1274. On the basis of our current estimate that around 65% of vape retailers in the UK are small and micro businesses, the SaMBA for each of the vaping policies demonstrates we expect small and micro businesses to incur the majority of the costs on retailers.

1275. As in the rest of the analysis of the vape policies, all our indicative estimates in this section are in 2024 prices to reflect our current assumption on when the policies may come into force, and any future year costs have been discounted at a rate of 3.5% in line with the Green Book[659].

Restricting vape flavours

1276. The main costs that small and micro retailers would incur because of any restrictions to vape flavours are familiarisation costs, disposal costs, and reduced profits from fewer sales of vapes. As we have not been able to provide an indicative estimate for the disposal costs of the policy, we have not been able to provide an indicative estimate for the disposal costs to retailers that are small and micro businesses.

1277. Table 105 below shows the indicative estimated cost to small and micro retailers based on the assumption that around 65% of vape retailers are small and micro businesses and the same proportion of vape sales in the UK are in these businesses. The costs are the total cost over the 10 year appraisal period and discounted at a rate of 3.5% in line with The Green Book.

[658] Association of Convenience Stores. 2024. The Local Shop Report 2024.
[659] HMT. 2022. The Green Book: appraisal and evaluation in central government.

Table 105: Small and Micro Business assessment for restricting vape flavours

	Indicative estimate for cost for small and micro retailers in the UK (£m)	Average cost per store
Familiarisation costs	1.1	£30.00
Loss in profits	3,400	£100,000

1278. We recognise that small and micro retailers may lose some income from reduced footfall-related sales. These are sales of non-vape products that people buy in addition to vape products. No data or evidence has been identified to quantify this potential impact.

Regulating vape packaging and product presentation

1279. The main costs that small and micro retailers would incur because of any regulations to vape packaging and product presentation are familiarisation costs, disposal costs, increased transaction times, and reduced profits from fewer sales of vapes. As we have not been able to provide an indicative estimate for the disposal costs of the policy, we have not been able to provide an indicative estimate for the disposal costs to retailers that are small and micro businesses.

1280. Table 106 below shows the indicative estimated cost to small and micro retailers based on the assumption that around 65% of vape retailers are small and micro businesses and the same proportion of vape sales in the UK are in these businesses. The costs are the total cost over the 10 year appraisal period and discounted at a rate of 3.5% in line with The Green Book.

Table 106: Small and micro business assessment for regulating vape packaging and product presentation

	Indicative estimate for cost for small and micro retailers in the UK (£m)	Average cost per store
Familiarisation costs	0.3	£6.50
Transaction times	0.3	£7.55
Loss in profits	455	£11,300

1281. We recognise that small and micro retailers may lose some income from reduced footfall-related sales. These are sales of non-vape products that people buy in addition to vape products. No data or evidence has been identified to quantify this potential impact.

Regulating vape point of sale displays

1282. The main costs that small and micro retailers would incur because of any regulations to vape point of sale displays in shops are familiarisation costs, disposal costs, increased transaction times, costs of new storage, and reduced profits from fewer sales of vapes. As we have not been able to provide an indicative estimate for the disposal costs of the policy, we have not been able to provide an indicative estimate for the disposal costs to retailers that are small and micro businesses.

1283. Table 107 below shows the indicative estimated cost for each of these costs to all retailers and the estimated cost to small and micro retailers, based on the assumption that round 87% of vape retailers are small and micro businesses and the same proportion of vape sales in England are in these businesses. The costs are the total cost over the 10 year appraisal period and discounted at a rate of 3.5% in line with The Green Book.

Table 107: Small and micro business assessment for regulating vape point of sale displays

	Indicative estimate for cost for small and micro retailers (£m) in the UK	**Average cost per store**
Familiarisation costs	1	£24
Storage costs	18	£470
Transaction times	50	£1,300
Restocking costs	124	£3,300
Loss in profits	312	£8,300

1284. We recognise that small and micro retailers may lose some income from reduced footfall-related sales. These are sales of non-vape products that people buy in addition to vape products. No data or evidence has been identified to quantify this potential impact.

Specific impact tests

1285. This section considers the impact of all the vaping policies considered above, including the ban on vape vending machines and advertising and sponsorship for vape products. For the vaping policies in the Bill that are currently powers we will conduct these tests again when we produce any further impact assessments if the policies are implemented through secondary legislation.

Health and longevity impacts

1286. Health and longevity impacts are discussed in the assessment of each of the vaping policies.

Equalities assessment

1287. A separate equalities impact assessment will be completed in due course for these policies. At this stage we have provided an initial assessment of how these policies may affect different demographics.

1288. There is limited data on how vaping prevalence varies between different demographics, particularly among young people.

1289. Among young people, data from the Smoking, Drinking and Drugs use among Young People Survey 2021 (SDD)[660] and ASH on the use of vapes among young people in 2024[661] shows that vaping prevalence is higher among older children. For example, SDD shows that in 2021, 18% of 15 year olds were current vapes users, compared to

[660] NHS Digital. 2022. Smoking, Drinking and Drug Use among Young People in England, 2021.
[661] Action on Smoking and Health. 2024. Use-of-vapes-among-young-people-in-Great-Britain-2024.pdf (ash.org.uk)

just 1% of 11 year olds, 3% of 12 year olds, 6% of 13 year olds, and 11% of 14 year olds. This is also supported by data from ASH that shows in Great Britain in 2024, 14% of 16 to 17 year olds currently vape, compared to 4.6% of 11 to 15 year olds. Based on this data, we may expect these vaping policies to have a larger impact on older children.

1290. The SDD data also shows vaping prevalence by gender, and in 2021, vaping prevalence was higher among girls. In 2021, 10% of girls aged 11 to 15 currently vape, compared to 7% of 11 to 15 year old boys. However, it should be noted that his was the first year since the data was collected in 2014 that it was higher among girls compared to boys.

1291. For adults, based on ONS data[662], in 2022, vaping prevalence was highest among young adults and declined consistently among older age groups. In England, among 16 to 24 year olds, 15.4% currently vape, compared to 10.1% among 25 to 34 year olds, 9.5% among 35 to 49 year olds, 8.3% among 50 to 59 year olds, and 4.2% among people aged 60 and older.

1292. The ONS data also shows that current vaping prevalence is higher among men at 9.2%, compared to 7.7% among women. However, vaping prevalence is higher among women that smoke. In England, in 2022, 27.5% of women that smoked also currently vape, compared to 25.7% of men that smoked. Given the assessments of the policies have shown that it may lead to fewer smokers using vapes to quit smoking, we may expect more women smokers to be impacted.

1293. Data from the Smoking Toolkit Study[663] also provides data on vaping prevalence by socio-economic status and ethnicity for adults that smoke or stopped smoking in the past year. The data shows that in 2022, there was little difference in vaping prevalence between adults of different socio-economic status and ethnicity.

1294. For socio-economic status, vaping prevalence was highest among people in group C1 (people in supervisory, clerical, and junior managerial, administrative, and professional occupations) at 29.7%, while it was lowest among people in group D (people in semi-skilled and unskilled manual occupations, unemployed, and lowest grade occupations) at 27.7%.

1295. For ethnicity, vaping prevalence among adults that smoke or stopped smoking in the past year was highest among white people (29.1%), compared to ethnic minorities (28.4%).

1296. As a result, it is uncertain if any of the impacts on adults that vape due to these policies would affect people in different socio-economic groups or of different ethnicities more than others.

Rural proofing

1297. Data is not available on how vaping prevalence, including among young people, varies between rural and urban areas. However, we are not aware of any evidence to suggest

[662] ONS. 2023. Adult smoking habits in the UK: 2022.
[663] University College London. Smoking Toolkit Study: E Cigarettes Latest Trends. (viewed on 26 January 2024)

the that these vaping policies would have a significant impact on people living in rural areas. The impact of these policies on rural areas will be considered further in the impact assessments for any secondary legislation for these policies.

Competition assessment

1298. Using the Competition and Market Authority's (CMAs) competition assessment checklist[664], we have provided an initial assessment of the competition impacts of the vaping policies. A more detailed competition assessment will be included in impact assessments for any secondary legislation for the vaping policies.

1299. The CMA competition assessment checklist asks does the proposal:

1. *Directly limit the number or range of suppliers?*

    - The ban on vape vending machines will result in no suppliers of vending machines for vapes, nicotine products and cigarette papers in the UK.

    - None of the other vape or other nicotine product policies directly limits the number of businesses that can operate in the market.

2. *Indirectly limit the number or range of suppliers?*

    - Restrictions on the flavours of vapes and other nicotine products may mean that some manufacturers that specialise in particular flavoured vapes or other nicotine products that become prohibited by this policy may have to leave the market. This would mean the policy indirectly limits the number of suppliers in the market.

    - Regulations of vape packaging and product presentation and any other products in scope of any potential future regulations could increase the costs for existing manufacturers or raise them relative to manufacturers that already comply with any new regulations. If this is the case it may lead some businesses to exit the market, which would mean this policy indirectly limits the number of suppliers in the market. The extent to which this happens will depend on the exact restrictions that are put in place on vape packaging and product presentation.

    - Regulations of point of sale displays in shops for vapes and other nicotine products could increase the costs for some retailers. For example, some retailers may be required to make significant changes to their shop layouts to comply with any new regulations. If this is the case, the cost may be too high for some retailers and cause them to exit the market. This would mean the policy indirectly limits the number of suppliers in the market. The extent to which this happens will depend on what any regulations on vape and other nicotine product point of sales prohibit and whether they apply to all retailers or not.

[664] CMA. 2015. Competition assessment: guidelines for policymakers.

3. *Limit the ability of suppliers to compete?*

    - The ban on advertising and sponsorship of vapes, herbal smoking products or other nicotine products would not allow any businesses in these industries to advertise their products and therefore impact their ability to compete in terms of how they advertise products. It would apply to all businesses in these industries meaning no businesses would have an advantage or disadvantage in how they can compete in the market in the future. However, new businesses entering may be at a disadvantage compared to businesses already in the industries that have previously been able to use advertising and sponsorship to grow their brand. This could create a barrier to entry to new firms entering these industries.

    - Restrictions on the flavours of vapes and other nicotine products would prevent vape manufacturers competing in terms of at least some flavours.

    - Any regulations of vape packaging and product presentation may reduce vape manufacturers' ability to compete through packaging and brand differentiation. The extent to which this happens will depend on the exact restrictions that are put in place on vape packaging and product presentation. Manufacturers' ability to compete through packaging and brand differentiation will be most affected the more standardised packs and products are required to be. However, in the competition assessment in the impact assessment for standardised packaging of tobacco products[665], it highlighted that there was a chance that it may increase price competition, which may result in process innovation as companies improve the efficiency of the production process.

    - Any regulations on point of sale displays in shops may limit retailers' ability to compete in terms of how they advertise products in their stores, and the ability of manufacturers to use point of sale displays to penetrate the market. Whether this policy does impact retailers' and manufacturers' ability to compete in terms of advertisement in stores will depend on what any regulations on vape point of sales prohibit and whether they apply to all retailers or not.

4. *Will the measure affect consumers' ability to engage with the market and make choices that align with their preferences?*

    - Banning vape vending machines would affect consumers' ability to engage with the market and make choices that align with their preferences at it would prevent them from purchasing vapes from vending machines if this is their preferred method.

    - Restrictions on the flavours of vapes and other nicotine products would affect consumers' ability to engage with the market and make choices that align with

[665] DHSC. 2015. The Standardised Packaging of Tobacco Products Regulations.

their preferences as it would prevent them from purchasing at least some flavours that they currently do.

- Regulations on vape packaging and product presentation is not expected to affect consumers' ability to engage with the market and make choices that align with their preferences.

- Regulations on point of sale displays in shops may have some impact on consumers' ability to engage with the market and make choices that align with their preferences as it may reduce the information they have available to them in stores when making a decision on which vape to purchase. The extent to which this happens will depend on what any regulations on vape point of sales prohibit and whether they apply to all retailers or not.

5. *Will the measure affect suppliers' ability and/or incentive to introduce new technologies, products, or business models?*

    - The ban on advertising and sponsorship of vaping product, nicotine products, herbal smoking products and cigarette papers would not allow any businesses in these industries to advertise their products, including new products. This may reduce the incentive for businesses in these industries to introduce new products if they are not able to market them.

    - Restrictions on the flavours of vapes and other nicotine products would affect vape manufacturers' ability to introduce new flavoured vapes into the market.

    - Regulations of packaging and product presentation would affect manufacturers' ability to introduce new designs of products into the market.

    - Regulations of point of sale displays in shops is not expected to affect suppliers' ability and/or incentive to introduce new technologies, products, or business models.

Environmental impact

1300. The environmental impacts are discussed in the assessment of each of the vaping policies.

Human rights

1301. We consider the proposals in the vaping and nicotine products section to be compatible with the European Convention on Human Rights.

Justice

1302. A full justice impact assessment will be conducted in due course.

Other measures

1303. This section provides an assessment of the costs and benefits of other measures in the Bill. The Bill will also:

- Prohibit the sale and proxy purchasing of non-nicotine vaping and nicotine products to under 18s in England, Wales and Northern Ireland.
- Ban the free distribution of vaping and nicotine products to people of all ages in England, Wales and Northern Ireland, with exemptions for arrangements by public authorities.
- Give enforcement authorities in England and Wales the ability to issue Fixed Penalty Notices of £200 for breaches of age of sale and display requirements in the Bill.
- Provide powers to establish a register of tobacco, herbal smoking products, vaping and nicotine products, and make provision for what information the register requires.
- Provide powers to test products post market to determine if they meet our regulations.
- Provide powers to request producers to carry out studies of their products or ingredients and to submit a report based on the findings to the relevant body.
- Provide powers in England and Northern Ireland to extend smoke-free public places and non-smoking premises in Scotland.
- Provide powers across the UK to introduce vape-free and heated tobacco free public places.
- Provide powers to create a licensing regime for the retail sale of tobacco products, herbal smoking products, cigarette papers, vaping products and nicotine products in England, Wales and Northern Ireland.

1304. Provide powers to regulate features, contents, flavour and packaging of tobacco products and devices, herbal smoking products, cigarette papers, vaping and nicotine products. The measures to prohibit the sale of vaping or nicotine products to under 18s and the free distribution of products, including herbal smoking products, cigarette papers, vaping products or nicotine products will apply to England and Wales and Northern Ireland. In Scotland, the Bill extends the current legislation to prohibit the sale of nicotine products to under 18s and the free distribution of relevant products. The power that will allow local authorities to issue Fixed Penalty Notices (FPNs) to enforce certain tobacco, vaping and nicotine product regulations, including age of sale breaches, will only apply to England and Wales.

1305. We expect that these policies will have limited impacts, particularly on businesses. Given this, we have provided a proportionate assessment of the potential impact of these policies and demonstrated why we do not expect them to have a significant impact on businesses.

Prohibit the sale and proxy purchasing of nicotine products to under 18s and prohibit their free distribution

1306. The Bill will:

- Make it an offence to:
  - Sell nicotine products to anyone under the age of 18 years old.
  - Purchase these products on behalf of anyone under the age of 18 years old
  - Distribute these products to anyone of any age

Background

1307. The main type of consumer 'nicotine product' currently on the market are oral nicotine pouches. The Bill refers to 'nicotine products' rather than just nicotine pouches to ensure that future nicotine products are also regulated without the need for further primary legislation. The consumer nicotine industry is highly adaptive to regulation. There are other plausible delivery routes yet to be exploited (including buccal absorption from "gummies", absorption through gels or creams, nasal inhalers, and more). These products are likely to be popular with young people and may be marketed towards them. Pouches already on the market deliver levels of nicotine much higher than regulated vapes. Dry powder and nasal inhalers have the potential for very swift and strong nicotine delivery that greatly increases the potential for initiating dependence, especially in users under the age of 25. By regulating all nicotine products, the Bill aims to protect children and young people from the harmful effects of nicotine addiction no matter the form in which it is delivered. Oral nicotine pouches are a tobacco-free oral nicotine product, they are placed between the lip and gum for oral nicotine absorption, similar to Swedish Snus. They are pre-portioned pouches and are produced in a variety of flavours, the quantity of nicotine also varies between brands/products.

1308. The nicotine content within oral nicotine pouches can vary, typically between 4mg and 18mg of oral nicotine per pouch. Some online retailers are marketing products with pouches containing 150mg of nicotine per pouch[666].

1309. The amount and rate of which nicotine is released during use of an oral nicotine pouch can also vary. Evidence suggests that the release of nicotine from oral nicotine pouches is similar to, or faster than, other smokeless tobacco (ST) products[667]. Oral nicotine pouches are sold in a variety of flavours, examples include black cherry, citrus, and coffee. There is evidence to suggest that oral nicotine pouches are effective at

[666] For example. Vaporizer Hut. CUBA Ninja Orange Nicotine Pouches - UK (vaporizerhut.co.uk). Accessed August 2024.
[667] Aldeek, F., McCutcheon, N., Smith, C., Miller, J.H. and Danielson, T.L., 2021. Dissolution Testing of Nicotine Release from OTDN Pouches: Product Characterization and Product-to-Product Comparison. Separations, 8(1), p.7

alleviating symptoms of nicotine withdrawal from tobacco-based products (containing nicotine)[668].

1310. Oral nicotine pouches are tobacco-free products, which means they are not regulated under The Tobacco and Related Products Regulations (TRPR 2016)[669]. Oral nicotine pouches alongside other novel nicotine products such as nicotine toothpicks and nicotine toothpaste that could emerge or already have emerged onto the market are regulated under The General Product Safety Regulations (2005)[670]. Under The General Product Safety Regulations, there is no age of sale requirement for retailers to impose. As such, individuals aged under 18 can legally purchase nicotine pouches, contrary to tobacco and vaping products which require purchasers to be aged over 18. Furthermore, oral nicotine pouches are not regulated by MHRA since no medical claims are made and they are not an alternative to an authorised medicinal product.

1311. As well as no restriction on age of sale, there is also no restriction on the amount of nicotine contained within an oral nicotine pouch under the current legislation. As such, any new products sold within the UK can contain levels of nicotine exceeding other nicotine products or tobacco-based products such as cigarettes.

1312. Furthermore, it is also legal for businesses to give out nicotine pouch products to people of any age for free[671].

Rationale for intervention

1313. As explained above, under General Product Safety Regulations (2005) oral nicotine pouches, not containing tobacco can be legally sold to those aged under 18. Consumption of oral nicotine pouches by those under the age of 18 could lead to health harms of excessive consumption of nicotine.

1314. Some websites selling oral nicotine pouches are marketing products containing up to 150mg of nicotine per individual pouch. Typically, one cigarette contains between 10-12mg of nicotine[672], therefore, some oral nicotine pouches contain approximately 12 times the amount of nicotine in one pouch compared to a cigarette.

1315. However, a recent scoping review, found that oral nicotine pouches claimed to be less toxic than cigarettes and deliver comparable nicotine, although data was mainly available from industry funded studies[673]. Despite potentially lower toxicity than cigarettes, oral nicotine pouches still contain nicotine, which can have harmful effects.

1316. A systematic review considering the harmful effects of nicotine found nicotine to adversely affect various systems within the body including the cardiovascular, renal,

[668] Thornley, S., McRobbie, H., Lin, R.B., Bullen, C., Hajek, P., Laugesen, M., Senior, H. and Whittaker, R., 2009. A single-blind, randomized, crossover trial of the effects of a nicotine pouch on the relief of tobacco withdrawal symptoms and user satisfaction. *Nicotine & Tobacco Research*, *11*(6), pp.715-721

[669] HM Government. The Tobacco and Related Products Regulations 2016.

[670] HM Government. The General Product Safety Regulations 2005.

[671] For example, Nordic Spirit and Velo amongst other brands both offer free samples of nicotine products.

[672] Healthline. How much Nicotine Is in a Cigarette and Other Tobacco Products? Accessed August 2024.

[673] Nargiz Travis, Kenneth E Warner, Maciej L Goniewicz, Hayoung Oh, Radhika Ranganathan, Rafael Meza, Jamie Hartmann-Boyce, David T Levy, The Potential Impact of Oral Nicotine Pouches on Public Health: A Scoping Review, *Nicotine & Tobacco Research*, 2024

respiratory and gastrointestinal systems, it has also been shown to be a carcinogenic[674].

1317. Nicotine is highly addictive; it can permanently affect the development of the adolescent brain. The Government is committed to protecting future generations from becoming hooked on nicotine. Nicotine also fulfils all the criteria required for a drug of dependence[675]. Giving up nicotine is very difficult, and withdrawal symptoms can include cravings, irritability, anxiety, trouble concentrating, headaches, and other mental symptoms.

1318. Symptoms associated with nicotine dependence are not often recognised by novice smokers[676][677]. A study considering the effects of nicotine dependence after smoking (cigarettes) initiation amongst adolescence found the symptoms of nicotine dependence can appear a few days after smoking initiation[678]. Given oral nicotine pouches contain similar or higher levels of nicotine, similar symptoms might appear following initiation of oral nicotine pouch use.

1319. Individuals may not be fully aware of the associated harms of nicotine and any potential future harms associated with consuming more harmful tobacco-based substances. This could be exacerbated by oral nicotine pouches currently being regulated under General Product Safety Regulation (2005) therefore, oral nicotine pouch manufacturers are not required to include a health warning on the packaging of the product.

1320. This represents information asymmetry because those aged under 18 purchasing oral nicotine pouches are not fully accounting for these associated harms and potential future harms when consuming them. This could be mitigated by increasing the age of sale of oral nicotine pouches.

1321. There is also a risk that allowing those aged under 18 to consume oral nicotine pouches, may lead them to consuming more harmful tobacco-based products such as cigarettes.

1322. Whilst industry claim to self-regulate and not sell oral nicotine pouches to anyone aged under 18, there is evidence that some retailers still do and there remains a threat of new entrants to the market who may choose to allow those under the age of 18 to purchase them. This could cause direct harms from the effects of nicotine and similar concerns on youth vaping.

Impact

1323. This policy is expected to reduce the number of people under the age of 18 using oral nicotine pouches. Due to the potential impact associated with nicotine consumption, as

[674] Mishra, A., Chaturvedi, P., Datta, S., Sinukumar, S., Joshi, P. and Garg, A., 2015. Harmful effects of nicotine. *Indian journal of medical and paediatric oncology*, *36*(01), pp.24-31.
[675] Gourlay, S. and McNeil, J. (1990). "Antismoking products" in Medical Journal of Australia. 153, pp.699-707.
[676] Gervais, A., et al. (2006). "Milestones in the natural course of onset of cigarette use among adolescents" in Canadian Medical Association Journal. 175(3), pp.255–261.
[677] Novice smoker refers to someone who is new to smoking.
[678] DiFranza, J.R., Rigotti, N.A., McNeill, A.D., Ockene, J.K., Savageau, J.A., St Cyr, D. and Coleman, M., 2000. Initial symptoms of nicotine dependence in adolescents. *Tobacco control*, *9*(3), pp.313-319.

described above, we expect the policy to deliver health benefits for everyone under the age of 18 that no longer uses oral nicotine pouches.

1324. In addition, the addictiveness of nicotine is well evidenced[679,680,681], as such, preventing those under the age of 18 from consuming oral nicotine pouches could lead to a reduction in the future use of tobacco-based cigarettes. However, it is important to note that there is limited evidence associated with oral nicotine pouch consumption leading to increased future tobacco-based product consumption.

1325. We also acknowledge there are likely to be costs associated with this policy, including costs to businesses. However, as demonstrated below we do not expect these costs to be significant.

1326. To implement this policy there would be several transition costs to businesses and government. These include:

- **Familiarisation costs:** One transition cost associated with increasing the legal age of sale for all consumer nicotine products is familiarisation costs. These costs refer to training and informing staff employed by retail outlets of the changes to the legislation for oral nicotine pouches.

  However, given that industry often claim they do not sell nicotine pouches to under 18s already, we do not expect staff in retail outlets to require much additional time to familiarise themselves with the new regulation. In addition, retailers are already familiar with the concept of age of sale across a range of products (e.g. tobacco, alcohol, knives, fireworks) and the addition of a new product to existing training should not be unduly burdensome. As a result, we expect this transition cost to be negligible and not to place a significant burden on retailers.

- **Signage costs:** Following the change in legislation retail outlets may choose to introduce signage to inform customers and staff of the changes, this will likely be a one-off cost. However, this would not be a requirement of the legislation and we do not have evidence on how many businesses would choose to introduce signage to inform staff and customers of the changes or the cost to the businesses that choose to introduce signage. Therefore, this cost has not been monetised.

- **Communication costs:** The final transition cost following the changes in the age of sale legislation is communication costs. Following changes to the legislation, DHSC will be required to communicate these changes to retailers. As per paragraphs 310 to 313, DHSC have accounted for a one-off £1.5m for a communication campaign to communicate changes to retailers of new legislation. Prohibiting the sale, proxy purchasing, and free distribution of other nicotine products could also be communicated as part of this campaign, we have therefore not considered a stand-alone communication cost.

[679] Benowitz, N.L., 2010. Nicotine addiction. New England Journal of Medicine, 362(24), pp.2295-2303.
[680] Dani, J.A. and De Biasi, M., 2001. Cellular mechanisms of nicotine addiction. Pharmacology Biochemistry and Behaviour, 70(4), pp.439-446.
[681] Stolerman, I.P. and Jarvis, M.J., 1995. The scientific case that nicotine is addictive. Psychopharmacology, 117(1), pp.2-10.

1327. We anticipate that the largest cost to manufacturers, wholesalers and retailers due to the increase in age of sale for nicotine pouches to be a loss in profit from reduced sales.

1328. If oral nicotine pouches can no longer be sold to those under the age of 18 this will remove a portion of the market that oral nicotine pouches can be sold to. This means that, the overall market size will be smaller. This in turn will reduce the volume of sales for manufacturers, wholesalers and retailers.

1329. To estimate the loss of profit for manufacturers, wholesalers and retailers we multiply the estimated reduction in the volume of sales of nicotine pouches of people below 18 within a given year by an estimated gross profit margin.

1330. **Number of people under 18 using oral nicotine pouches:** There is limited evidence regarding the size of the market for oral nicotine pouches, including amongst those aged under 18 within the UK. One study indicated that 1.3% of those aged between 16 and 19 had used a nicotine pouch within the last 30 days[682]. There is no evidence for current prevalence of oral nicotine pouch use for those aged under 16. Based on the available evidence on prevalence for those aged between 16 and 19 we assume this to be 1.3% of those aged 16 and 17, this equates to 19,563 individuals in England.

1331. Whilst the current regulation does not restrict anyone aged under 16 from purchasing nicotine pouches, we have assumed that there is no consumption of nicotine pouches under the age of 16. Firstly, we do not have a prevalence estimate for ages below 16. Secondly, given that retail outlets reportedly voluntarily do not sell oral nicotine pouches to those under the age of 18 we do not anticipate a significant proportion of individuals under 16 to use oral nicotine pouches. Finally, current estimates of prevalence of cigarette smoking for those under the age of 16 indicate the regular smoking prevalence is low[683], suggesting that use of oral nicotine pouches by this age group will also be very low.

1332. We realise that there may be growth in the market for oral nicotine pouches over time which would increase the loss in profit to retailers, wholesalers and manufacturers. In addition, new novel tobacco products may come onto the market. We have not identified any evidence on the expected growth in the market for oral nicotine pouches or any information on new novel tobacco products. Instead, to account for market growth, we use population projections for each year of the appraisal period. This means that at least the estimated increase in the number of individuals under 18 that would be able (and willing) to purchase nicotine pouches without this regulation is accounted for.

1333. **Pouches consumed per day:** After estimating how many people under 18 currently use nicotine pouches, we estimate the number of pouches typically consumed within a given year.

1334. Within the overall 1.3% prevalence estimate, we have defined three distinct cohorts. These three distinct cohorts reflect different users of nicotine pouches and the varying

[682] East, K.A., Reid, J.L., Rynard, V.L. and Hammond, D., 2021. Trends and patterns of tobacco and nicotine product use among youth in canada, england, and the United States from 2017 to 2019. Journal of Adolescent Health, 69(3), pp.447-456

[683] NHS England. 2019. Statistics on Smoking, England – 2019.

levels of consumption of oral nicotine pouches.

- The first cohort are individuals who have tried one oral nicotine pouch over the course of a calendar year.
- The second cohort reflects those who have used nicotine pouches occasionally over the course of a year.
- The final cohort reflects individuals who use oral nicotine pouches frequently over the course of a year. These are the same cohorts used within the Nicotine Inhaling Products impact assessment[684] and the ASH Survey.

1335. For nicotine pouch use, data does not exist for these distinct cohorts. Therefore, we use proxy data from the Nicotine Inhaling Products (NIPs) Impact Assessment to estimate the proportion of the 1.3% of children using nicotine pouches that have tried them, use them occasionally, and use them regularly. We then use this to estimate the overall number of pouches consumed by each of these groups, and the total consumption.

1336. Table 108 describes the cohorts and prevalence use estimated in the Nicotine Inhaling Products (NIPs) impact assessment. This is based on a YouGov survey at the time of 11 to 18 year olds and their use and knowledge of e-cigarettes (an emerging product at the time) and covers past 30 day use by three distinct cohorts (as defined above).

1337. We use the 'proportion of survey respondents' in Table 108 to calculate the proportions in the pouches per year in Table 109. For example, 3.1% of the survey respondents are estimated to have tried the product once or twice, this accounts for 79.5% (3.1%/3.9%) of the overall proportion of the respondents that use the product at all. These are the proportions provided in Table 108.

Table 108: (Source, by column: NIPs Impact Assessment, ONS mid-year population estimates, NIPs Impact Assessment),

Usage category	**Proportion of Survey Respondents** (e-cigarette use and knowledge)	**Proportion of Survey Respondents** *(% of column total)*
I have tried them once or twice	3.1%	*79.5%*
I use them sometimes (more than once a month)	0.5%	*12.8%*
I use them often (more than once a week)	0.3%	*7.7%*
Total	**3.9%**	***100%***

[684] The Nicotine Inhaling Products (Age of Sale and Proxy Purchasing) Regulations 2015 - Impact Assessment (legislation.gov.uk)

1338. The NIPs Impact Assessment estimated the number of NIPs consumed per year based on adult consumption data of conventional tobacco compared with NIPs. The calculated ratio was applied to tobacco consumption of 11 to 17 year olds to estimate the number of NIPs consumed each year by category (results shown in Table 109)[685].

1339. To convert the number of nicotine inhaling products per-year to per-person we divided the number consumed within a year by the number of individuals who consume them, this provides per-person consumption of nicotine inhaling products (Table 109).

Table 109: NIPs consumed by usage category (Source: NIPs Impact Assessment)

Usage category	**Number of NIPs Consumed per year** *(A)*	**Estimated number of Users in Population (England and Wales)** *(B)*	**Number of NIPs per person, per year** *(A / B)*
I have tried them once or twice	4,604	138,133	0.03
I use them sometimes (more than once a month)	117,248	22,279	5.26
I use them often (more than once a week)	281,396	13,368	21.05
Total	**403,249**	**173,780**	**-**

1340. Lastly, in the NIPs impact assessment it was estimated a nicotine inhaling product is equivalent to 30 cigarettes, therefore we multiply by 30 to convert in-terms of cigarettes. Based on the nicotine content within an oral nicotine pouch we assume 1 nicotine pouch is equivalent to one cigarette.

1341. Table 110 shows the proportion of all past 30-day users in each cohort and the estimated number of pouches per person, per year, based on the above methodology.

Table 110: Proportion of users in each category and estimated number of pouches per person in category, per year (Source: Derived from previous tables)

Usage category (Nicotine pouches)	**Proportion**	**Number of pouches per person in category, per year**
I have tried them once or twice	79.5%	1
I use them sometimes (more than once a month)	12.8%	158
I use them often (more than once a week)	7.7%	632

[685] DHSC. 2015. Nicotine Inhaling Products Regulations: Impact Assessment, paragraphs 93 to 103.

1342. To calculate the size of each cohort for nicotine pouches, we apply the proportions estimated in Table 110 to the overall past 30-day usage of nicotine pouches (1.3%), in East and others 2021.

1343. For the first cohort, we are calculating the proportion of the total nicotine pouch prevalence that is individuals who 'have tried them once or twice'. We estimate that 1.03% of individuals aged 16-17-years-old have tried oral nicotine pouches once or twice (1.30% x 79.5%). This usage category covers those using 1 pouch per person, per year.

1344. We estimate the size of the cohort who 'use oral nicotine pouches sometimes' to be 0.17% of 16-17-year-olds (1.30% x 12.8%). This usage category covers those using roughly 158 pouches per person per year.

1345. The final cohort, those who use them frequently, we estimate to be 0.10% (1.30% x 7.7%) of individuals aged 16-17-year-olds. This usage category covers those using roughly 632 pouches per person, per year.

1346. Table 111 shows the estimated population prevalence of nicotine pouch use among 16 to 17 year olds by usage category, the estimated number of users, and the total consumption of each category.

Table 111: Estimated population prevalence of nicotine pouch use among 16 to 17 year olds (Source: Derived from tables above)

Usage category (Nicotine pouches)	**Estimated population prevalence of nicotine pouch use among 16 to 17 year olds** *(A)*	**ONS mid-year population estimates 16 and 17 year olds, 2023** *(B)*	**Estimated number of 16 to 17 year old nicotine pouch users** *(C: A x B)*	**Number of pouches per person, per year** *(D)*	**Total number of pouches, per year** *(E: C x D)*
I have tried them once or twice	1.03%	1,504,774	15,549	1	15,549
I use them sometimes (more than once a month)	0.17%	1,504,774	2,508	158	396,257
I use them often (more than once a week)	0.10%	1,504,774	1,505	632	951,017

1347. **Loss in profits:** To estimate the loss in profit for manufacturers, wholesalers and retailers we calculate the loss of sales that would have been generated by each cohort and the subsequent profit arising from those sales.

1348. To do so, we multiply the number of pouches consumed per individual within each cohort by the number of individuals who consume nicotine pouches who are aged 16-17-years-old and by the proportion of the market each cohort represents (Table 111). This provides an estimate of the total number of pouches consumed each year. These estimates used population projections from ONS for each of the 10 years that are considered.

1349. Following this, we multiply the number of pouches consumed per year by the retail price[686] of a packet of nicotine pouches. Based on desk research the retail price for a packet of 20 oral nicotine pouches is around £6.50. This provides an estimate of the total sales value of nicotine pouch sales purchased by those aged 16-17-years-old for each year.

1350. To calculate the value of the profit which would be lost we multiply the loss in the value of sales by the estimated profit margin of oral nicotine pouches for manufacturers, wholesalers and retailers.

1351. For manufacturers, the estimated profit margin is estimated this based on financial records obtained from Companies House[687]. This may not provide the exact gross profit margin for a manufacturer of oral nicotine pouches, as it will also include profits from the sale of e-cigarettes and other related products sold by the manufacturer. The current estimate for manufacturer profit margin is 15%. Over a ten-year appraisal period, using a discount rate of 3.5% in line with the HMT The Green Book[688], we estimate the total profit loss for manufacturers to be £626,946.

1352. For wholesalers, we have not identified any evidence on their profit margin for oral nicotine pouches. Instead, we use the manufacturer profit margin (15%) for wholesalers. Using a discount rate of 3.5% in line with The Green Book, we the estimate the discounted profit loss over the ten-year appraisal period for wholesalers is £626,946.

1353. For retailers, the NIPs impact assessment it identified retailer profits differ to wholesalers and manufacturers for nicotine inhaling products. Within the first-year profit margins were estimated to be 40% in the first year, 20% in year two and three, and for the final seven years in the forecast profits are estimated to be 10%[689]. In the absence of specific evidence on retailer's profit margins for oral nicotine pouches and given oral nicotine pouches time on the market is similar to nicotine inhaling products at the time of that impact assessment, we assume retailer's profit margins to be the same as they were in the NIPs impact assessment. Based on these profit margins, We estimate the discounted total loss of profit for retailers over the ten-year appraisal period to be £632,285.

1354. However, in the long-run consumers may also switch to consumer alternative products to nicotine pouches which may offset at least a proportion of the loss of profits to these businesses.

Prohibit the sale of non-nicotine vapes to under 18s

1355. The Bill will:
Make it an offence to sell non-nicotine vaping products to anyone under the age of 18 years old.

Background

[686] For example, Nordic Spirit, charge £6.50 per packet of nicotine pouches. Accessed August 2024.
[687] Companies House. NICOVATIONS LIMITED. Accessed August 2024.
[688] HMT. 2022. The Green Book: appraisal and evaluation in central government.
[689] Given NIPs at the time of the impact assessment it was assumed they attracted a relatively high profit margin of 40% in the first year of the appraisal period, which was then assumed to decrease over time to 20% in year 2 and 10% from years 3 to 10.

1356. There are three broad categories of non-nicotine vapes[690] on both the England and UK markets:

- **Short-fill non-nicotine vape liquid:** These are usually sold in a 50ml bottle with 40ml of non-nicotine liquid, with a gap left (usually 10ml) to allow a nicotine vape liquid (often known as nicotine shots) to be added and mixed. Long-fills are sold in bigger bottles, usually 60ml, filled with 20ml of 50VG/50PG flavour. You can add more nicotine shots to these bottles. Both Short and long fills are used with open vape devices. They are sold in shops or online.
- **Disposable (single use) non-nicotine vapes:** These are used through a closed device, and unlike nicotine containing vapes, there is no requirement to have a maximum 2ml tank size for these devices. They are often produced by the same suppliers of nicotine vapes, and displayed alongside nicotine vapes in retail outlets or online. Some online marketplaces such as Amazon UK and eBay UK sell non-nicotine vapes (and include age restrictions to 18), but they do not sell nicotine vapes.
- **Alternative non-nicotine vapes:** Some vapes are being advertised as wellness products, for example by stating they contain vitamins, or help people relax and/or sleep. If these products make medicinal claims, they would be regulated as medicinal products. Alternative non-nicotine vapes are either sold closed or to be used with open devices. They are sold in shops and online, although it would appear that vitamin vapes are mainly available online rather than in retail outlets.

1357. Non-nicotine vapes are covered by the General Products Safety Regulations (GPSR) 2005. The GPSR require providers to ensure only safe products are placed on the market together with any necessary warnings for safe use of the product. The Regulations contain powers to secure compliance and enforcement.

1358. There are currently no age of sale restrictions for non-nicotine vapes in England - only for nicotine vapes that were introduced in The Nicotine Inhaling Products (Age of Sale and Proxy Purchasing) Regulations 2015[691]. Internationally, 30 countries have banned non-nicotine vapes for sale, and another 50 countries allow them to be sold, but with age restrictions, including Scotland.

1359. The consultation asked respondents whether they thought that non-nicotine vapes should be regulated under a similar regulatory framework as nicotine vapes. 59.6% of those who responded to this question said yes and thought that the UK Government and devolved administrations should regulate non-nicotine vapes under a similar regulatory framework as nicotine vapes. 32.7% said no, and 7.8% did not know.

Rationale for intervention

1360. There is well established concern about the harms from vaping, specifically associated with younger people. As with other health risk behaviours, experimentation and prevalence is higher among older children. The active ingredient in most vapes (apart from nicotine-free vapes) is nicotine which, when inhaled, is a highly addictive drug. The addictive nature of nicotine means that a user can become dependent on vapes, especially if they use them regularly. Giving up nicotine can be very difficult because the body has to get used to functioning without it. Withdrawal symptoms can include

[690] Non-nicotine vapes often known internationally as Electronic Non-Nicotine Delivery Systems (ENNDS)
[691] The Nicotine Inhaling Products (Age of Sale and Proxy Purchasing) Regulations 2015.

cravings, irritability, anxiety, trouble concentrating, headaches and other mental and physical symptoms. Evidence suggests that in adolescence, the brain is more sensitive to the effects of nicotine, so there could be additional risks for young people than for adults.

1361. There are also some health risks associated with the other ingredients in vapes. For example, propylene glycol and glycerine (components of e-liquids) can produce toxic compounds if they are overheated. The long-term health harms of colours and flavours when inhaled are unknown, but they are certainly very unlikely to be beneficial

1362. Non-nicotine vapes do not have the addictive impact of nicotine vapes. However, in a statement by the Committee on Toxicity in July 2020 on the toxicological risks of nicotine and non-nicotine regulated vapes[692] it said:

"*There is very little data for products that do not contain nicotine, but they can play a role in smoking cessation - if produced to manufactured standards*. *It is likely there will be reduction in overall risk of adverse health effects compared to if a smoker continued to smoke*. *We do not know the long term harms of use as this data does not exist. For non-smokers it is not recommended they are used as there are likely to be associated with some adverse effects to which the user would not otherwise have been subject to*."

1363. There is also limited evidence on the public health benefits from the use of non-nicotine vapes. In 2024, the Cochrane review[693] looked at the use of nicotine and non-nicotine vapes to help smokers quit smoking. The review found that there is moderate certainty that nicotine vapes increases smoking quit rates compared to non-nicotine vapes. The review says that in absolute terms, using nicotine vapes compared to non-nicotine vapes might lead to an additional 3 people quitting per 100 quitters.

1364. Although the majority of vapes sold contain nicotine, there is emerging data of children using non-nicotine vapes in England. In 2023, a review published by Taylor and others[694] reported that, in England, awareness of short fill vapes was common among young people (aged 16 to 19) including among those who had never vaped or smoked. Among young people who vaped in the past 30 days, short-fill use was more prevalent among those who also smoked and those who vaped nicotine-containing e-liquids. Data from ASH found that 5.3% of 11-17 year olds in Great Britain that currently vape said that they usually use nicotine free vapes.[695]

1365. In addition, there is some evidence that non-nicotine vapes are being sold as nicotine free, when they have subsequently been tested and found to contain nicotine as high as full strength nicotine vapes[696]. This is illegal and means nicotine containing vapes could be being sold to children. A recent case in Middlesbrough highlights a temporary closure of a shop selling non nicotine vapes (which contained nicotine)[697].

[692] Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment. Statement on the potential toxicological risks from electronic nicotine (and non-nicotine) delivery systems (E(N)NDS - e-cigarettes).
[693] Lindson and others. 2024. Electronic cigarettes for smoking cessation - Lindson, N - 2024 | Cochrane Library
[694] Taylor and others. 2023. Awareness and use of short-fill e-liquids by youth in England in 2021: findings from the ITC Youth Tobacco and Vaping Survey.
[695] Action on Smoking and Health. 2024. Use-of-vapes-among-young-people-in-Great-Britain-2024.pdf (ash.org.uk).
[696] The Guardian. 2023. Some 'nicotine-free' vapes high in addictive substances, tests reveal.
[697] Talking Retail. 2023. Middlesbrough store shut down and owner fined over illegal vape sales.

1366. Given the emerging data on the use of non-nicotine vapes by young people, the government wishes to protect children from vaping, due to the unknown long-term harms and the risks they may pose on young people. As a result, The Bill will prohibit the sale of non-nicotine vapes to under 18s.

1367. Setting the age of sale for non-nicotine vapes to 18 was also a suggestion by some UK vaping industry and other stakeholders in response to the consultation for the post implementation review of TRPR[698] in 2022.

Impact

1368. There is very little information publicly available on the market share of non-nicotine vapes. However, data provided by Nielsen shows that the total coverage of zero-nicotine in Great Britain in the 26 weeks up to 1 July 2023 in supermarkets and convenience stores showed sales of £575k. This data does not include dedicated vape shops or online, where according to IBVTA, most of the short-fill non-nicotine vapes are sold. In comparison, the nicotine vapes and vaporizers UK market is valued at 3.67billion USD[699] (according to Statista.com).

1369. Although this does not include dedicated vape shop or online sales of non-nicotine vapes, it demonstrates that it is a relatively small market, and any reduction in sales of these products by ages 17 and under as a result of this policy is likely to have a limited impact on vape retailers, wholesalers, and manufacturers' profits.

1370. We recognise that there may be some additional transition costs for retailers to familiarise themselves with the new age restriction for non-nicotine vapes to and check people's IDs.

1371. The UK vape industry, for example the Independent British Vape Trade Association (IBVTA), have it in their Code of Conduct for its members to not sell any type of vape to ages 17 and under. Some online retailers such as Amazon UK[700] and eBay UK[701] have also voluntarily introduced an age of sale of 18 and have their own age verification procedures in place.

1372. This policy would align the legal age of sale for non-nicotine vapes with a number of other age restricted products, including nicotine vapes. Therefore, any retailers that do currently sell non-nicotine vapes to under 18s would not be expected to have to spend becoming familiar with the new rules. Also, they are unlikely to have to significantly increase the number of people's IDs they have to check as they should already be checking them for most sales of vapes.

1373. While it is encouraging to see many retailers apply age restrictions on non-nicotine vapes, we need to ensure there is consistency across the sector, and that our rules are keeping pace with the increases in youth vaping more generally. This Bill will introduce

[698] OHID. 2022. The Tobacco and Related Products Regulations 2016: post-implementation review.
[699] Statista. 2023. E-cigarettes and vaping in the United Kingdom - statistics & facts.
[700] Amazon. Age Restricted Items. (viewed 26 January 2024)
[701] Ebay. Tobacco and e-cigarettes policy. (viewed 26 January 2024)

age of sale restrictions for non-nicotine vapes, and we expect this policy to impose negligible additional costs on businesses in England.

Prohibiting the distribution of free samples of vaping and nicotine products, cigarette papers and herbal smoking products

1374. The Bill will:

- Make it an offence to distribute free samples of herbal smoking products, cigarette papers, vaping and nicotine products .

1375. This clause replaces section 9 of TAPA which prohibits free distribution of tobacco products and extends the scope to herbal smoking products, cigarette papers, vaping (both nicotine and non-nicotine) and nicotine products.

Background

1376. The sale of nicotine inhaling products to persons under 18 is banned[702]. There is, however, no restriction on the free distribution of such products or non-nicotine vapes. This differs to the position on tobacco products, as the free distribution of tobacco products is banned under section 9 of the Tobacco Advertising and Promotion Act 2002.

Rationale for intervention

1377. Data from Action on Smoking and Health (ASH) in 2023 showed that 2.3% of 11 to 17 year olds in Great Britain who have ever tried vaping said they were given it free by a vape company[703]. ASH stated that there are wide confidence intervals, so this could range from between 9,000 and 38,000 children.

1378. If no action is taken, suppliers and retailers would still be able to give out free samples of nicotine and non-nicotine products such as vapes to children.

1379. Introducing this legislation will help protect children from the marketing and risk of harm from vaping and protect future generations from nicotine addiction. It will introduce extra protection against irresponsible retailers already targeting children through the current loophole in legislation.

1380. Scotland currently have powers to introduce such regulations and intend to do so soon.

Impact

1381. We do not believe there will be impact on business as they are already claiming to self-regulate on this matter to only target smokers who are aged 18 and over. The proposed legislation will ensure those rules are understood and adapted universally to protect children and future generations from the harms of vaping.

1382. There may be new burdens on local Trading Standards to enforce this new measure which will be assessed ahead of any future regulations.

[702] The Nicotine Inhaling Products (Age of Sale and Proxy Purchasing) Regulations 2015
[703] Action on Smoking and Health. 2024. Use-of-vapes-among-young-people-in-Great-Britain-2024.pdf (ash.org.uk)

Provide powers to regulate features, contents, flavour and packaging of tobacco products and devices, herbal smoking products, cigarette papers, vaping and nicotine products.

1383. The Bill will:

- Provide powers to the Secretary of State to make regulations about the packaging, contents, flavour of tobacco products and devices, herbal smoking products, cigarette papers, vaping products and nicotine products. The power could be used to regulate retail packaging, including the appearance of such packaging as well as the information provided on it and its shape and texture. It could also be used to prohibit flavour accessories that are added to tobacco and herbal smoking products.

Background

1384. The Tobacco and Related Products Regulations 2016 (**TRPR**)[704] currently covers restrictions and requirements of labelling, emissions, prohibited ingredients, reporting of tobacco products, herbal smoking products and e-cigarettes.

Rationale for intervention

1385. A possible loophole in TRPR is that flavoured products can be added to tobacco products to change the taste and smell. This can be used by tobacco manufacturers to make tobacco products more appealing, circumventing the ban on menthol tobacco smoking products. This Bill would allow this to be changed.

1386. If tobacco manufacturers did this it could lead to an increase in the number of people smoking, including young people. This could potentially offset some of the benefits of the Smoke-free UK policy described above. Therefore, this power is necessary to allow this potential loophole to be closed, and more stringent requirements on packaging can be introduced in order to limit the appeal to children.

Impact

1387. The impact of this policy is currently difficult to assess as it will depend on the if and how this power is used in the future. For example, if it is used to change the packaging requirements for tobacco products this would likely have health benefits if it reduces the appeal of tobacco products but would also result in costs to manufacturers to change their packaging.

1388. If these powers are used via secondary legislation, further impact assessment(s) will be completed to assess the costs and benefits of the policy being implemented.

Introducing Fixed Penalty Notices *(FPNs)* for underage sale, proxy sale, and free distribution of tobacco, vaping and nicotine products, display offences, and offences related to tobacco notices at point of sale displays.

1389. The Bill will:

- Provide Local Authority Trading Standards in England and Wales with the ability to issue fixed penalty notices to the value of £200 for the underage sale, proxy sale

[704] HM Government. The Tobacco and Related Products Regulations 2016.

and free distribution of tobacco, vaping and nicotine products, retail display offences, and tobacco notice offences.

Background

1390. Complaints about underage sales of vapes are one of the main areas of concern raised to Trading Standards from the public. Previously, the Department of Health and Social Care (DHSC) has provided funding for yearly surveys carried out by the Chartered Trading Standards Institute (CTSI) to oversee the adherence to The Tobacco and Related Products Regulations 2016 and The Nicotine Inhaling Products (Age of Sale and Proxy Purchasing) Regulations 2015 on vaping products[705]. These surveys were voluntary, but CTSI received a substantial response rate from local Trading Standards. During the 2019/20 period, 66% of all councils engaged in activities related to tackling underage sales of vapes. This marked an 11% rise from the results observed in the 2018/19 period. However, a recent programme of test purchasing by the Chartered Trading Standards Institute, using ages 17 and under, found that 33% of retailers sold the vaping product to the underage test purchaser[706].

1391. Local authorities take a proportionate approach to enforce age of sale and proxy purchasing restrictions on tobacco products and vapes, that reflects the level of offence committed. For example, in England, penalties can be escalated, starting with a warning, through to a maximum fine of £2,500. In the case of the most serious or repeat offences, local authorities can apply for a court order to prevent the offending retailer from opening for a period of time.

1392. The current penalty regime requires local authorities to prosecute the individual or business in question, and for the individual or business in question to be convicted in a magistrates' court. Trading standards officers say this is a time-consuming court procedure that limits their ability to issue fines and is a significant gap in their operational capabilities.

1393. The department undertook an internal review of fixed penalty notices (FPNs) to enforce age of sale legislation for vaping products. FPNs are a well-established approach to enforce a range of regulatory offences, and penalty charge notices (a type of FPN) are already used as part of a suite of measures to enforce age of sale restrictions for alcohol. The review concluded that introducing an FPN (an on-the-spot fine) will enable Trading Standards Officers to take more swift and proportionate enforcement action against the irresponsible retailers who allow underage sales of vapes. It was welcomed by many Trading Standards Officers. The government thinks that these findings also support introducing powers to enforce age of sale legislation for tobacco products.

1394. FPNs are already used to enforce age of sale legislation for tobacco products and vapes; Scotland has introduced an FPN of £200, and Northern Ireland an FPN of £250.

1395. The consultation asked respondents whether they thought that FPNs should be issued for breaches of age of sale legislation for tobacco products and vapes. 88.3% of

[705] Chartered Trading Standards Institute. Tobacco Control Survey.
[706] The Grocer. 2023. Third of vape products sold in UK not compliant, claims Trading Standards.

respondents to this question were in support of issuing FPNs, 8.8% were not in support, and 2.8% did not know.

Rationale for intervention

1396. Following consultation, the government has decided to introduce an FPN of £200 to enforce age of sale legislation for tobacco products, vaping and nicotine products in England (FPNs are already in place through existing legislation for proxy purchases at £90 – the new legislation would increase this to £200). The FPN will also be used to enforce free distribution, display offences, and the offence related to tobacco notices at point of sale. Powers to issue FPNs to the individual or business in question would be in addition to existing powers local authorities have to enforce age of sale legislation and will support the enforcement of the new age of sale for tobacco products outlined in the Bill. FPNs will enable local authorities to take more swift and proportionate enforcement action in cases of underage sales of tobacco, vaping, and nicotine products.

Impact

1397. The current penalty regime requires local authorities to prosecute the individual or business in question, and for the individual or business in question to be convicted in a magistrates' court. This is a costly and time-consuming process for local authorities; permitting local authorities to issue on the spot fines is unlikely to be considered a new burden and may save local authorities, retailers, and the justice system time and money.

1398. The ability to issue FPNs may lead to an increase in fines issued as the current, resource intensive route to issue a fine following prosecution in a magistrates' court is dissuading local authorities from taking forward cases of underage sales. However, penalties that are brought forward would be administered in a less resource intensive and more efficient way.

1399. Local authorities will be able to retain the value of the FPN, to be used for enforcement of tobacco, vaping and nicotine product regulations, which will offset some enforcement costs to local authorities.

1400. The impact on business should be minimal as they should already be complying with the law and checking individual ages. It is the responsibility of retailers to ensure they do not sell age restricted products to people under the minimum age.

1401. A new burdens assessment will be completed to assess costs to local authorities ahead of the Bill achieving Royal Assent.

Powers to introduce a new registration scheme for tobacco, vaping, nicotine and herbal products as well as tobacco related devices

1402. The Bill will:

- Introduce powers to establish a new registration scheme for vaping, tobacco, nicotine and herbal products and tobacco related devices. This will mean producers, manufacturers, suppliers, or the designated responsible person, must register their product to the relevant responsible body to supply their product on the UK market.

Background

1403. Currently, to supply certain tobacco, herbal, and nicotine vape products on the UK market you must first notify your product[707]. Producers must provide data such as the name and contact details of the person who manufactures the product, a list of all ingredients contained in the product, emissions resulting from its use, as well as toxicological data and a declaration that the producer bears full responsibility for the quality and safety of the product when supplied.

1404. The Medicines and Healthcare Products Regulatory Agency (MHRA) currently run the notification scheme for nicotine containing vapes (and refill containers) in Great Britain and Northern Ireland. The Department of Health runs the notification scheme for tobacco and herbal products.

1405. The MHRA are responsible for assessing that the notification of nicotine containing vapes meets certain requirements set out by the Tobacco and Related Product Regulations (TRPR) (Part 6). Similarly, the Department of Health and Social Care is responsible for assuring tobacco and herbal products are notified and meet our regulations, as set out in the TRPR (Part 4).

Rationale for Intervention

1406. To support a compliant market, it is important that we have products that can be registered and shown to be meeting with our regulations. This will help to ensure legitimate products are available for sale, and to let retailers know what these products are. Industry and enforcement agencies have asked government to update the current notification systems. Although it was not part of the consultation process, subsequent consultation will be required to better inform the new registration system and its implementation.

1407. The Government would like to make sure that non-nicotine vapes and other consumer nicotine products being sold on the UK market are subject to the current notification requirements as nicotine vapes. This is in line with the consultation undertaken in 2023, where the majority of responses were in favour of regulating all non-nicotine vapes and other nicotine products under a similar regulatory framework[708] as nicotine vapes.

1408. At the moment, if enforcement agencies find the product notified is not then compliant with our regulations, they are unable to update the notification accordingly. These new powers will ensure that the register of products can be updated accordingly.

1409. To ensure that we can effectively monitor these products, and support our enforcement regime, it is necessary that government has the power to introduce a new registration system.

Impact

[707] The Tobacco and Related Products Regulations (2016)
[708] DHSC, Department of Health (Northern Ireland), Scottish Government, Welsh Government. 2024. Creating a smokefree generation and tackling youth vaping: government response.

1410. There will be some costs to industry due to measures including product registration requirements for vapes, tobacco and herbal products, and nicotine products.

1411. The requirements for product registrations on non-nicotine vapes and other nicotine products may also put off producers with lower standards and therefore may improve the general safety standards of the industry. The registration requirements will also mean consumers can access more information on non-nicotine vapes and other nicotine products.

1412. There may be a cost to companies who have to request information from their suppliers and gather existing data on non-nicotine vapes and other nicotine products. Companies will also have to spend resource filling in the form. Based on the impact assessment for the Tobacco and Related Products Regulations we expect these tasks to take between 10-15 hours per notification[709]. There may also be costs of translating information to submit a notification, however given that all companies notifying the UK will be selling to or operating in the UK, we expect these costs to be negligible.

1413. There is currently a small fee of £150 to notify a nicotine containing vape product. There is also a fees for tobacco and herbal products; notification fee set at £200, modification fee of £100 and an annual reporting fee of £100[710]. A new fee will be imposed to register products, which will likely be in line with the current fees for tobacco, herbal and nicotine vape products. Non-nicotine vape products and other nicotine products, which were not subject to notification or fees, will be charged a fee to register, with the amount to be determined through further consultation. However, it is likely to be small, and is not likely to exceed £300. Whilst the market share of these products is small in comparison to nicotine vapes, many manufacturers of these products are predominantly vape or tobacco businesses.

1414. For potential new information requirements there may be additional costs associated with acquiring this. Some manufacturers may already collect any new information. In this case, there will be no additional costs of acquiring the information and the only additional cost will be staff time spent collating and submitting information. These costs may be more burdensome for smaller companies. These changes will be achieved through secondary legislation which will be subject to consultation to determine what information should be notified, how the registration will operate, the process for any non-publication of registrations, and the level of fees associated with the costs of administering the system. We will also be giving industry enough time for businesses to make any necessary changes before future regulations come into force.

Powers to test products to determine if they meet our regulations

1415. The Bill will:

- Introduce powers to be able to test products to determine whether a product complies with our regulations.

Background

[709] The Tobacco Products and Herbal Products for Smoking (Fees) Regulations 2017 (legislation.gov.uk)
[710] The Tobacco Products and Herbal Products for Smoking (Fees) Regulations 2017 (legislation.gov.uk)

1416. The ban on the sale of menthol flavoured cigarettes and hand rolling tobacco was introduced under the TRPR and came into force on 20 May 2020. The Department of Health and Social Care conducts testing analysis of cigarettes on the Great Britain market as part of its investigation of possible breaches of the prohibition of characterising flavours in TRPR.

1417. The Department also tests manufactured cigarettes for tar, nicotine and Carbon Monoxide content. It was previously a legal requirement for manufacturers to print these yields on the packaging. It is now prohibited to do so. The annual fee payable is £1,000 for one brand of cigarette variant that is tested in all 6 testing periods. Where a brand of cigarette is tested in 5 periods or less, the testing fee is £167 for each test. For example, testing 5 samples of the same cigarette variant in one year would cost £835

Rationale for Intervention

1418. To help ensure products on the market meet UK regulations and are safe for consumers, we need to have the ability to regularly test tobacco, vaping, nicotine and herbal products, to help support a compliant market and keep consumers safe.

1419. Trading Standards have been finding non-compliant vapes containing heavy metals and dangerous substances. Recent testing by Trading standards found over 40% of “non-nicotine” vapes tested contained nicotine. There is also a concern that nicotine pouches contain extremely high, and dangerous, levels of nicotine, and if ingested by children might be lethal.

1420. Furthermore, characterising flavours is prohibited and responsibility for testing, and the funding of testing, has fallen to the Department.

Impact

1421. There will be some cost to industry to send samples and products to be made available for testing. To recoup the costs of testing the Department will likely include a small fee to producers, which will likely be as part of the registration process, or sit outside that for a one-time fee for producers when samples are requested. This process will be determined via consultation and subsequent regulations.

1422. There are main sites across the UK that conduct testing, including by local scientific services such as Kent Scientific Services. They already test nicotine vapes against the current requirements in TRPR.

1423. Testing normally takes place over 2 days. The cost for a nicotine strength test with volume test is around £100-£230 excluding VAT per sample (each sample needed 3 items of same product). Local authorities usually have particular test houses they use for particular purposes, sometimes with contractual commitments.

1424. Tests for lead, cadmium and several other metals in the liquid cost an additional £150 excluding VAT per sample. A single analyst can conduct 20 test samples in a day, for an overnight run. A batch of 20 samples would have an instrument run time of around 18 hours.

1425. If we take the current testing infrastructure, we could be able to test around 2000-9000 products, depending on the number of testing facilities available. With a cost of between £400-£1000 to test and administer, and taking the upper estimate, we could anticipate needing around £8-10 million per year. Given there are around 20,000 products on the market, that would be around a £450 annual fee.

1426. These changes will be achieved through secondary legislation which will be subject to consultation to determine appropriate process and costing.

Powers to require producers to carry out a study of their products or ingredients

1427. The Bill will:

- Introduce powers to require a producer of a tobacco, vaping, herbal or nicotine product, or tobacco related device to carry out a study of either the product itself, or ingredients within it, and to then submit that report to the relevant body.

Background

1428. The TRPR[711] currently requires that nicotine vape manufacturers submit toxicological data regarding the product's ingredients (including in heated form) and emissions, referring to their effects on the health of consumers when inhaled and considering things like the addictive nature of the product.

1429. Currently, producers of non-nicotine vapes and other nicotine products such as pouches are not required to test their products or ingredients contained within. These products fall under the General Products and Safety Regulations where the only obligation is that a producer must supply a safe product.

Rationale for Intervention

1430. Manufacturers of vaping products should carry out tests on their products to determine how their device works, how it delivers nicotine, and how the ingredients react with each other to produce certain emissions. This is important to protect consumers.

1431. In some instances, we see the use of new chemicals and ingredients that are not well researched and not well tested. If manufacturers wish to put these ingredients in their product, then they could be required to perform studies its safety.

1432. Manufactured cigarettes are the most thoroughly researched tobacco product and are also among the most uniform. However, we know much less about other products such as novel tobacco products and non-nicotine products and smokeless tobacco. These are diverse products and much less well studied. We currently depend entirely on manufactures without the capacity to verify industry claims. Smokeless products are of particular concern, produced by small and medium size enterprises in low- and middle-income states.

Impact

[711] HM Government. The Tobacco and Related Products Regulations 2016.

1433. There will be a cost to industry to carry out a study of their products or ingredients and submit the study to the relevant body.

1434. If the test for menthol was adding to the standard routine testing for tar, nicotine and Carbon Monoxide (TNCO) that is currently conducted on all cigarette brands we expect this to impose only a small additional cost on manufacturers.

1435. For any other tests that the regulations require manufacturers to conduct and submit it is likely that that they would already have need to conduct them and have this product safety information for other markets. As a result, we do not expect them to incur additional costs to tests products but may be some small costs to manufacturers to collate and submit the data they already have.

1436. There would also be a cost to the relevant body that is required to review the studies that producers of these products submit. For context, the extra cost of testing 12 tobacco products for menthol was around £50,000 per year. It is likely that any additional tests that these regulations require the relevant body to cost in the similar region.

1437. These changes will be achieved through secondary legislation which will be subject to consultation.

Powers to extend smoke-free places and introduce vape-free and heated tobacco-free places

1438. The Bill will:

- Give the government new regulation-making powers to expand existing smoke-free legislation from indoor to some outdoor public places.
- Give the government new regulation-making powers to designate smoke-free areas as vape-free and heated tobacco-free.

Background

1439. In 2006, in Scotland smoking in all enclosed or ‘substantially enclosed’ public places and workplaces was prohibited. This was then implemented in England, Wales and Northern Ireland in 2007.

1440. In England, this legislation forms part of the Health Act 2006[712]. Under the Health Act, “substantially enclosed” means premises or structures with a ceiling or roof (including temporary and retractable coverings such as awnings) and where there are permanent openings, other than windows or doors, which in total are less than half of the area of the walls. This means market stalls and bus stops can be required to be smoke-free if their structure is substantially enclosed.

1441. Scotland, Wales and Northern Ireland all go further than England on smoke-free places.

- Scotland’s 2005 Act was amended by the Health (Tobacco, Nicotine etc. and Care) Act 2016[713], and the Prohibition of Smoking Outside Hospital Buildings

[712] Health Act 2006 (legislation.gov.uk)
[713] Health (Tobacco, Nicotine etc. and Care) (Scotland) Act 2016 (legislation.gov.uk)

(Scotland) Regulations 2022[714] were made using the new powers in the 2005 Act. Together, the legislation makes it an offence to smoke, and to knowingly permit smoking in hospital grounds within 15 metres of a hospital building.

1442. Chapter 1 part 3 of the Public Health (Wales) Act 2017[715] and Smoke-free Premises and Vehicles (Wales) Regulations 2020[716] came into force in March 2021. This required hospital grounds, school grounds and public playgrounds, adult care home and hospice designated rooms, research and testing facilities designated rooms, as well as outdoor day care and childminding settings to be smoke-free.

1443. Northern Ireland also has smoke-free places legislation[717] on train platforms, certain sports stadia and on Health and Social Care Trust owned grounds.

1444. There are currently no legal restrictions in the UK on where a person may vape. However, many businesses, venues, educational institutions, health service providers and public transport providers have voluntarily introduced their own rules preventing vape usage in these locations.

Rationale for intervention

1445. The current smoke-free legislation in England does not stop people smoking in outdoor public spaces such as schools, children's playgrounds and hospitals. This means people in these public spaces could still be exposed to second-hand smoke (also known as passive or involuntary smoking).

1446. Evidence on the harm from exposure to second-hand smoke is well established.

1447. Studies have suggested that non-smokers that are exposed to second-hand smoke have an 18% increased risk of death from all causes, an increased risk of COPD (66%)[718], coronary heart disease (25%)[719] and stroke (35%)[720]. There is also an increased risk of lung cancer (31%)[721], cervical cancer (70%)[722] and breast cancer (32%)[723].

1448. Exposure to second-hand smoke during pregnancy and infancy results in adverse reproductive health effects, including low birth weight[724] and asthma diagnoses (24% increase)[725] in infants and children.

[714] The Prohibition of Smoking Outside Hospital Buildings (Scotland) Regulations 2022 (legislation.gov.uk)
[715] Public Health (Wales) Act 2017 (legislation.gov.uk)
[716] The Smoke-free Premises and Vehicles (Wales) Regulations 2020 (legislation.gov.uk)
[717] Smoking and vaping regulations in Northern Ireland | nidirect
[718] Fischer, F., Kraemer, A. 2015. Meta-analysis of the association between second-hand smoke exposure and ischaemic heart diseases, COPD and stroke. BMC Public Health
[719] Lv X, Sun J, Bi Y, Xu M, Lu J, Zhao L, Xu Y. 2015. Risk of all-cause mortality and cardiovascular disease associated with secondhand smoke exposure: a systematic review and meta-analysis. Int J Cardiol. 199:106-15.
[720] Fischer, F., Kraemer, A. 2015. Meta-analysis of the association between second-hand smoke exposure and ischaemic heart diseases, COPD and stroke. BMC Public Health
[721] Kim, C. et al. 2014. Exposure to secondhand tobacco smoke and lung cancer by histological type: a pooled analysis of the International Lung Cancer Consortium (ILCCO). Int J Cancer. 135(8):1918-30.
[722] Su, B. et al. 2018. The relation of passive smoking with cervical cancer: A systematic review and meta-analysis. Medicine (Baltimore).
[723] Luo, J. et al. 2011. Association of active and passive smoking with risk of breast cancer among postmenopausal women: a prospective study. BMJ 2011;342:d1016.
[724] U.S. Department of Health and Human Services. 2014. The Health Consequences of Smoking- 50 Years of Progress. A Report of the Surgeon General.
[725] He, Z. et al. 2020. The association between secondhand smoke and childhood asthma: A systematic review and meta-analysis. A systematic review. Pediatr Pulmonol. 2020 Oct;55(10):2518-2531.

1449. There is also evidence that the previous smoke-free places legislation reduced second hand smoke exposure and improved cardiovascular health outcomes. For example, studies have shown it reduced heart attacks, asthma admissions and improved lung function specifically in non-smokers[726]. Another study also estimated that the legislation was associated with a 48% reduction in admissions for respiratory infections in children[727].

1450. Second-hand smoke exposure also imposes costs the NHS. As explained above, in 2018, the Royal College of Physicians (RCP) estimated that exposure of children to passive smoking costs the NHS in England between £5 and £12 million in hospital costs[728].

1451. Therefore, extending the current smoke-free places legislation to also cover some outdoor public places will further reduce people's exposure to second-hand smoke and the associated negative health impacts described above.

1452. The Bill also includes powers to restrict the use of vapes and heated tobacco in indoor and outdoor smoke-free places. There is currently limited evidence of health harm from 'passive vaping'.

1453. A 2022 review identified six studies assessing second-hand exposure to vaping[729]. Overall, the review found that only prolonged exposures to heavy vaping resulted in increases in nicotine or potential toxicants in those exposed to second-hand aerosols.

1454. It is plausible that risks may be greater in more vulnerable groups for example a more recent publication of repeated surveys of a cohort of 2,097 children living in Southern California identified that second-hand nicotine vape exposure in household increases the likelihood of bronchitis symptoms by 40% and shortness of breath by 53% in young people, after taking account of active and passive exposure to tobacco or cannabis[730].

1455. This evidence demonstrates that it is unlikely that there is no harm at all of 'passive vaping' to bystanders. We also know from air pollution that particulate matter, even if you cannot smell it, can be harmful to people. For example, vape aerosol can trigger asthma attacks.

Impact

1456. These measures are regulation making powers only and there are a range of policy options available to protect children, families and vulnerable people from the harms of second-hand smoking. The Government is considering extending smoke-free outdoor places restrictions to schools, children's playgrounds and hospitals, but not outdoor hospitality or wider open spaces like beaches.

[726] Frazer, K. et al .2016. Legislative smoking bans for reducing harms from secondhand smoke exposure, smoking prevalence and tobacco consumption. Cochrane Database of Systematic Reviews 2016, Issue 2.
[727] Lee, S., Wong, W. and Lau, Y. 2016. Smoke-free legislation reduces hospital admissions for childhood lower respiratory tract infection. Tob Control.
[728] Royal College of Physicians. 2018. Hiding in plain sight.
[729] OHID. 2022. Nicotine vaping in England: an evidence update including health risks and perceptions, 2022.
[730] Islam T, Braymiller J, Eckel SP, et al. 2022. Secondhand nicotine vaping at home and respiratory symptoms in young adults.Thorax 2022;77:663-668.

1457. The impact of these restrictions will be dependent upon the scope of the policy. If the policy only restricts smoking in schools, children's playgrounds and hospitals it will have limited to no impact on businesses.

1458. The scope of the policy will be implemented via secondary legislation, at which point, further impact assessment(s) will be completed to assess the costs and benefits of the policy being implemented.

Powers to introduce a licensing scheme for the retail sale of tobacco, vape, and other products in England, Wales and Northern Ireland

1459. The Bill will:

- Provide powers for the Secretary of State in England, Welsh Ministers or the Department of Health in Northern Ireland to introduce a licensing scheme in their nations. The scheme would require a person to hold a personal licence in order to sell tobacco products, herbal smoking products, cigarette papers, vaping products, or nicotine products, and would require a premises licence for the premises from which the product is supplied. Retailers found selling these products without a licence, or breaching the conditions of the licence, would face penalties. The structure and details of the scheme will be developed through consultation ahead of introducing regulations.

Background

1460. There is currently no legal requirement for a retailer to obtain a licence in order to sell tobacco, vaping or nicotine products in the UK. A licensing scheme would function by requiring that retailers must hold a licence, and adhere to a particular set of requirements of the licence, in order to legally sell the products. A licensing scheme does exist for the sale of alcohol, with the objective of prevention of crime and disorder, public safety, the prevention of public nuisance, and the protection of children from harm. The objective of a licensing scheme for the sale of tobacco, vaping and nicotine products is to strengthen the enforcement of regulations, supporting legitimate businesses and acting as a deterrent to rogue retailers, and so supporting public health.

Rationale for intervention

1461. Retailers must adhere to a range of regulations when selling tobacco, vaping and nicotine products, including age of sale requirements, correctly displaying products in retail stores, and displaying a notice about the tobacco age of sale at the point of sale. Local Authority Trading Standards teams in England, Wales and Scotland, and district councils in Northern Ireland, are responsible for enforcing many of the regulations at a local level, including age of sale regulations, and other enforcement organisations such as Border Force and HMRC conduct a range of activity to tackle the illicit market. Despite the regulations and efforts from enforcement agencies, some rogue retailers do not adhere to the regulations, threatening public health (e.g. through the sale of tobacco and vape products to children) and placing themselves at an unfair competitive advantage over responsible retailers.

1462. A retail licensing scheme for the sale of tobacco, vaping and nicotine products would support enforcement (and in turn, public health) by:

a) strengthening retailers' adherence to existing regulations. As a minimum, the requirements to apply for and hold a licence would require retailers to continue to adhere to existing tobacco and vape regulations such as age of sale restrictions. Retailers who breach the conditions of the licence could face financial penalties, or revocation of the licence (which would therefore mean the retailers would lose their ability to legal sell tobacco, vape and other nicotine products).

b) providing the opportunity to introduce further restrictions. These would be in the interest of public health, for example conditions relating to retail density.

1463. A range of different stakeholder organisations have advocated for tobacco licensing in recent years. Public health stakeholders, including the APPG on Smoking, Action on Smoking and Health (ASH), and Fresh North East, have advocated for a licensing scheme as a means to better-enforce tobacco restrictions and support tobacco control. The independent Khan Review 2022 identified a national tobacco licensing scheme as a key recommendation for reducing smoking rates.

1464. A licensing scheme is attractive to legitimate businesses since it would help to tackle rogue traders who breach tobacco and vape restrictions and place themselves at an unfair competitive advantage – a licensing scheme would, therefore, support legitimate businesses on the high street who sell tobacco, vaping and nicotine products responsibly.

1465. The public and retailers are broadly supportive of licensing: A 2022 ASH survey found that 81% of retailers support the introduction of a tobacco licence (9% oppose). A 2023 ASH survey of the public found that 83% of the public support tobacco retail licensing, making it the most popular intervention amongst adults surveyed.

1466. There are international examples of tobacco licensing schemes and evidence that introducing or strengthening licensing leads to a decrease in tobacco retail density (28% decrease in Finland[731], 83% decrease in Hungary[732], 24% decrease in Australia[733]).

Impact

1467. The impact of a licensing scheme is dependent on the specific restrictions and requirements of the licence:

- The minimalist option would require businesses to adhere to existing regulations and to pay a licensing fee. The fee would need to be determined and could vary depending on the size of the business, as is the case for alcohol licensing where premises licence fees range from £100 to £1,905[734]. Breaches of the licence could also result in financial penalties or simply a revocation of the licence and therefore loss of ability to sell tobacco, vaping or nicotine products.

[731] Kuipers, M. et al., 2021. Tobacco retail licencing systems in Europe. Tob Control. 2022 Nov; 31(6): 784-788.
[732] Kuipers, M. et al., 2021. Tobacco retail licencing systems in Europe. Tob Control. 2022 Nov; 31(6): 784-788.
[733] Bowden, J., et al. 2014. What happens when the price of a tobacco retailer licence increases?. Tobacco Control 2014;23:178-180.
[734] Home Office. 2012. Main fee levels - GOV.UK (www.gov.uk)

- A more restrictive licensing scheme would be expected to have a greater impact on public health and a greater economic impact on businesses.

1468. As explained above, the data we have identified suggests that there are 50,387 convenience stores, of which 71% are independently operated and 5,944 Supermarkets, which are assumed to all sell tobacco and vape products. In addition, there are estimated to be 3,573 specialist vape shops. Under a tobacco and vape licensing scheme, it would be expected that all these businesses would require a licence to sell these specific products.

1469. It is expected that there will be some impact on local authorities in relation to their role as the licensing authority for the licensing scheme. Local authorities will need to set up and run the licensing scheme for their local area, which will include managing the process of granting and renewing licences, as well as operating a review and appeals process. To support local authorities with the running costs of the scheme, fees generated from the scheme will be able to be used by local authorities to cover the cost of running the scheme. The level of local authority which will be required to act as the licensing authority, as well as further details on the requirements around the running of the scheme and the granting and reviewing of licenses, will be determined in regulations following consultation.

1470. Local authorities will also be impacted as Local Authority Trading Standards will be responsible for enforcing the licensing regulations. Activities will include investigating and issuing financial penalties in relation to the new offence of selling tobacco, vaping and nicotine products without a licence, and for breaches of licensing conditions. To support local authorities with enforcement costs, proceeds from the financial penalties issued by Trading Standards for licensing offences or breaches of licence conditions will be able to be used by local authorities to cover the cost of issuing the penalties, and the licensing fee collected by the licensing authority will be able to be used by the enforcement authority to cover the cost of enforcing the licensing scheme.

1471. The details of the licensing scheme, including the licence fee structure and license conditions, will require consultation, and be established through regulations.

1472. The expected impact of licensing on smoking and vaping rates, the economic impact on retail businesses, and the impact on local authorities, including enforcement costs, will be assessed further, ahead of regulations being introduced.

Monitoring and Evaluation

1473. The specifics of the evaluation of the measures in the Bill are still being developed. Additionally, any regulations that are implemented in England using powers created by the Bill will be subject to review after 5 years, in the form of a post implementation review in the usual way. Other devolved nations will consider their own arrangements.

1474. The review period for the measures in the Bill will be taken from the point when they come into force. For the smoke-free generation policy, the measures will come into force on 1 January 2027. For the policies which prohibit advertising of vaping and nicotine products and cigarette papers, these measures come into force via statutory instrument. On sponsorship agreements, the Bill makes it an offence to enter a sponsorship agreement which promotes vaping, nicotine and herbal smoking products, and cigarette papers, if both the agreement is entered into 2 months after Royal Assent and if contributions are made on or after a date specified in regulations. For the policies to prohibit vending machines for vaping and nicotine products and cigarette papers, these measures come into force on six months after the bill has passed.

1475. The review period for measures to regulate vaping that are implemented using powers created by the Bill will depend on when any subsequent secondary legislation is implemented.

1476. The impact of the policies can be monitored through a range of publicly available data sources. These data sources will be used to assess whether the original objectives have been met, and whether the interventions should be amended.

1477. The Smoking, Drinking and Drugs use among Young People Survey (SDD)[735] shows smoking and vaping prevalence for 11 to 15 year olds. This survey is currently conducted every two years.

1478. The SDD data also provides information on the sources of cigarettes and vapes among this age group. This data could be used to assess whether the smoke-free generation policy and vaping policies have led to a reduction in smoking and vaping prevalence, and changed how children access these products.

1479. The SDD data also provides information on awareness of vapes, which could be used to monitor if the vaping policies have been effective at reducing promotion of vapes to children.

1480. ASH also currently conduct an annual survey on youth vaping. This survey contains data on the vaping prevalence among 11 to 17 year olds, and information on sources of vapes, awareness of vapes, and reasons for vaping. Given this is currently an annual survey, this could be used to provide more regular monitoring of the impact of the vaping policies.

[735] NHS Digital. 2022. Smoking, Drinking and Drug Use among Young People in England.

1481. For the smoke-free generation policy, there is also ONS' Adult Smoking habits in the UK[736], which provides smoking prevalence data for adults aged 18 and over, split by age, gender, location, socio-economic status, and other demographics. This could also be used to monitor the impact that the smoke-free generation policy has on smoking behaviours among older age groups as the legal age of sale increases. The Department will also consider commissioning independent research into the impact of any implemented policy, as previously done for the Tobacco Advertising and Promotion (Display) Regulations, Standardised Packaging of Tobacco Regulations, and the Tobacco and Related Products Regulations.

1482. The main aim of commissioning any independent research would be to understand what impacts can be attributed to specific policies. For example, research commissioned to evaluate the impact of the smoke-free generation policy would aim to understand what changes in metrics, such as smoking prevalence, and smoking related deaths and disease, can be attributed to the smoke-free generation policy and not external factors.

1483. For the vaping policies, more detailed monitoring and evaluation plans will be set out in impact assessments for any secondary legislation.

[736] ONS. 2023. Adult smoking habits in the UK - Office for National Statistics (ons.gov.uk)

Annex A

Modelling paper

1484. This annex explains the methodology and data used for the Markov model that we constructed to model the effects of the smoke-free generation policy for the impact assessment.

1485. The modelling is for England only and focuses on the 14 to 30 age group, given the primary aim is to further reduce the number of young people taking up smoking (the 'instigation rate').

1486. To assess the longer-term impacts on disease incidence, we have modelled the lifetime effects of changes in the instigation rate on disease incidence, mortality, and costs, taking into account subsequent smoking behaviours (quitting and relapse).

1487. In developing the model, we have made assumptions based on the best evidence available which influence the results. Also, while a Markov model is a widely used approach for considering smoking behaviour, there is inherent uncertainty in projecting analysis decades into the future. These factors mean that this work should not be considered a precise forecast, but rather an attempt to assess the scale of potential effect. There is further information about the limitations of the model later in this annex.

Model Structure

1488. The York Health Economics Consortium (YHEC) defines the Markov model as follows:

'The Markov model is an analytical framework that is frequently used in decision analysis, and is probably the most common type of model used in economic evaluation of healthcare interventions. Markov models use disease states to represent all possible consequences of an intervention of interest. These are mutually exclusive and exhaustive and so each individual represented in the model can be in one and only one of these disease states at any given time. … Time itself is considered as discrete time periods called 'cycles' (typically a certain number of weeks or months), and movements from one disease state to another (in the subsequent time period) are represented as 'transition probabilities.[737]

1489. Figure 15Figure 15 is a diagram of our Markov model structure. It divides the population (aged 13 to 89) into four states, based on smoking status[738]:

- non-smokers
- current smokers
- former smokers
- people who are dead

[737] York Health Economics Consortium. 2016. Markov Model.
[738] Despite typically being referred to as 'disease states' in health economics, these do not have to correspond to diseases.

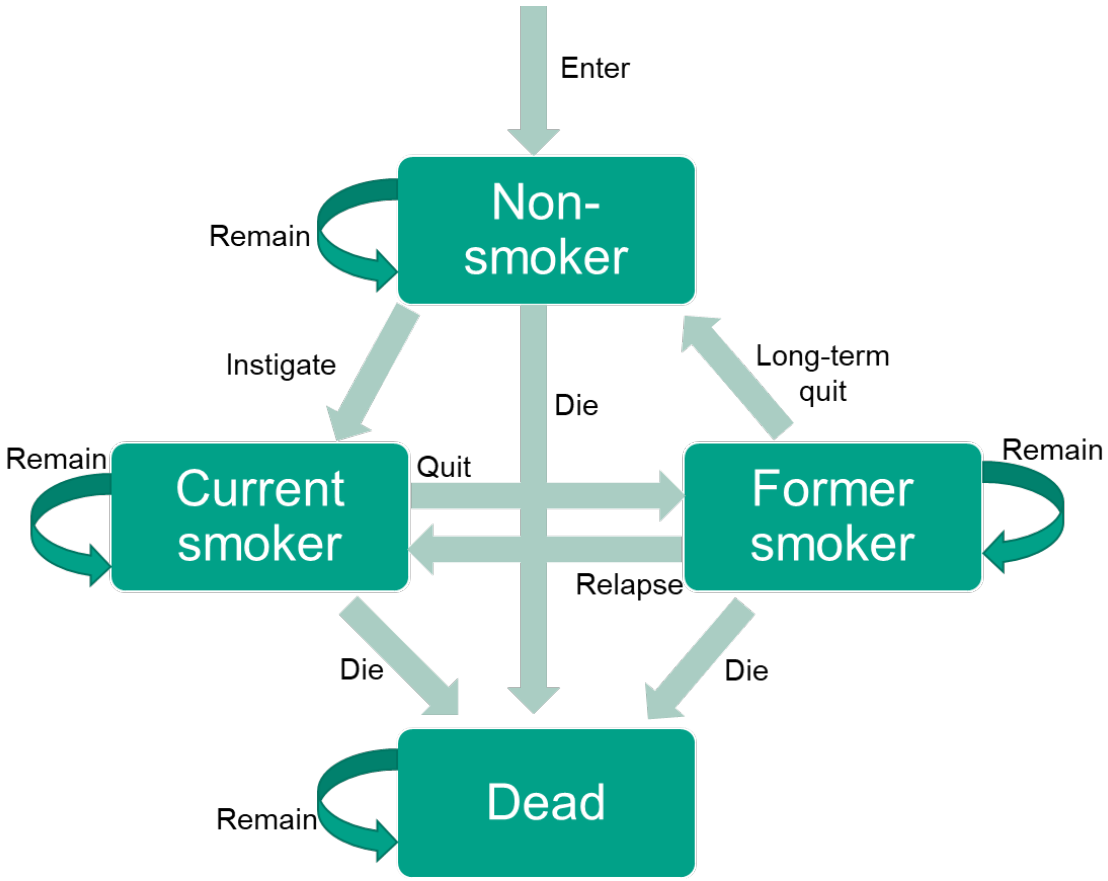
1490. Each cycle of the model is one year, and individuals can either remain in one of the above states or move to another at each cycle.

1491. People enter the model as non-smokers. If a non-smoker starts smoking, this is known as instigation. Current smokers who quit become former smokers, and if they remain abstinent, they eventually move back to being non-smokers (called ‘long-term quitting’ in the model). Former smokers can also relapse. In the model, people die from:

- Smoking-related causes (from current smoking or a history of smoking)
- Other causes, not related to smoking

1492. The model runs from 2023 up to 2100, to assess the long-term impacts on disease incidence, mortality, and costs, acknowledging there is greater uncertainty the further into the future the analysis projects.

Figure 15: Tobacco Markov model structure



Transitions

1493. Each year, a new set of 13-year-olds enters the model as non-smokers. As a simplification, and given the small numbers of ages 13 and under who smoke, after the initial starting population the model assumes no 13-year-olds smoke. The number of 13-year-olds in England each year is sourced from ONS.[739]

1494. We have applied an average of figures over the time period 2026 (the year before the introduction of the policy) to 2050 each year, rather than modelling each year separately. We thought this was reasonable as year-on-year changes are small. Therefore, each year, 333,573 males and 316,014 females enter the model at 13.

1495. Each year, people from any state (non-, current, or former smokers) can die, although the probability of dying (by age and sex) is different for each state. We have taken baseline mortality rates from UK National Life Tables, 2017 to 2019 (to avoid the impacts of Covid-19)[740]. We then disaggregated this based on the proportion of smokers who are current, former, and never smokers, and combined with increased relative risks of mortality based on data from Doll (2004)[741]. We split data on mortality risks for former smokers by the age of quitting. However, we took an average of these figures for the purposes of this model.

1496. Aside from mortality probabilities, each year non-smokers can either instigate smoking (up to the age of 30) and transition to the current smoker state or remain in their existing state. Current smokers can either quit smoking and transition to the former smoker state or remain in their existing state. Former smokers can relapse (returning to being current smokers), remain in their current state, or 'long-term quit,' which means they move back to being a 'non-smoker,' as outlined below.

1497. Baseline transition probabilities for instigation (becoming a smoker), quit (successfully quitting smoking for one year), and relapse (becoming a smoker again after having quit) are taken from the University of Sheffield's Tobacco Policy Model.[742] University of Sheffield provide data by deprivation quintile. This was converted to an overall figure by calculating a weighted average using the population of smokers in each deprivation decile (from the OHID Fingertips tool[743]) and assuming each decile had an equal population size.

1498. For the baseline analysis, we have held instigation, quit, and relapse rates constant at 2023 values. University of Sheffield projected rates changing over time, and we have included a scenario in sensitivity analysis using variable rates (where trends continue until 2040, and then 2040 values are used up to 2100). However, these predicted changes assume some further policy action on smoking. Without this, it is unclear how instigation, quit, and relapse rates would change. While smoking overall has been declining in recent years, it is plausible that without action smoking rates could stall or

[739] ONS. 2023. 2020-based interim national population projections: year ending June 2022 estimated international migration variant.
[740] ONS. 2024. National life tables: UK.
[741] Doll and others. 2004. Mortality in relation to smoking: 50 years' observations on male British doctors.
[742] Sheffield Tobacco and Alcohol Policy Modelling. Smoking state transition probabilities. (viewed on 31 October 2023)
[743] OHID. Local Tobacco Control Profiles. (viewed on 26 January 2024)

even rise, as seen in Australia[744] and in New York in the USA[745]. So, we assume that instigation, quit, and relapse rates remain constant at 2023 values. This results in baseline trends over the coming years that are broadly in line with other estimates from Cancer Research UK's Smoking prevalence projections for England, based on data to 2021[746], and University of Sheffield's projections from 2021, published in the Royal College of Physicians report 'Smoking and health 2021: a coming of age for tobacco control?[747].' The trends then reach a long-run steady state of smoking prevalence that is lower than current levels of smoking (once the starting population has aged out of the model).

1499. Using University of Sheffield's data, instigation, quit, and relapse rates were available from the age of 16 (at the time of constructing this model). For our analysis, we also calculated instigation rates for 13 to 15 year olds. We did this by taking instigation rates for 14 to 16 year olds from the US SimSmoke model (available to download from the US National Cancer Institute Publication Support and Modelling Resources website)[748], and using these to adjust the Sheffield rates, by assuming the ratio between age groups in the US model applies to our population. For example, SimSmoke suggests 2.4% of 15 year old male non-smokers instigate, and 3.1% of 16 year old males instigate. We then divided the Sheffield 16 year old male instigation rate by 2.4, and divided by 3.1 to calculate a 15 year old male instigation rate. For 13 year olds, we assumed rates were equal to 14 year olds, as outlined below. We applied long-term quit probabilities (described below) from the age of 24, as they are only relevant for individuals who quit smoking more than 10 years ago. Each cycle in the model lasts one year, so transitions between states can only occur 'between' ages. For example, a 17 year old non-smoker who instigates smoking becomes an 18 year old smoker. The model uses rates for a given age to calculate transitions at the end of that year, for example the 17 year old instigation rate is used to calculate those moving to the current smoking state at age 18. When rates are modelled to change over time, the year of the rate used is the year to which it is applied. For example, for a 17 year old becoming a smoker at age 18 in 2030, the 2030 instigation rate is used.

1500. Given the above, when calculating instigation rates for 13 year olds, we assumed this would be equal to the rate for 14 year olds. Although we know considerably fewer 13 year olds smoke than 14 year olds smoke, the model applies this number to next year's 14 year olds and assumes no-one aged 13 or below smokes.

[744] The Guardian. 2023. Australia's teenage smoking rates rise for first time in 25 years, research reveals.
[745] The Wall Street Journal. 2014. New York City's Adult Smoking Rate Climbs.
[746] Cancer Research UK. 2022. Smoking prevalence projections for England based on data to 2021.
[747] Royal College of Physicians. 2021. Smoking and health 2021: A coming of age for tobacco control?
[748] National Cancer Institute. CISNET. (viewed on 26 January 2024)

1501. The ‘former smokers’ state is intended to capture only those who quit smoking less than 10 years ago. A modelling study on risks and mortality (Kontis and others)[749] shows that 10 years after smoking cessation, the excess risk of cancers and chronic obstructive pulmonary disease (COPD) is less than half that of a smoker, and for cardiovascular diseases, is close to zero. Research on long-term smoking relapse (Hawkins and others)[750] suggests relapse is negligible after 10 years of abstinence, so the model applies a probability called ‘long-term quit’ to approximate the proportion of those who quit smoking less than 10 years ago who have reached 10 years of abstinence. The model moves these people to the ‘non-smoker’ state, assuming they have the same health risks as never smokers.

1502. This is a simplification that will underestimate the health consequences of having been a smoker, so will underestimate the effect of the policy to some extent. While the highest relative health risks are in those who quit smoking more recently, analysis of lung cancer, stroke, coronary heart disease (CHD), and COPD incidence data from the Global Burden of Disease study shows that the main health conditions that can be caused by smoking tend to accrue more in older age. Analysis of the Health Survey for England 2019 data provided by the University of Sheffield shows that most older former smokers quit more than 10 years ago.

1503. The long-term quit probability is 8.96%, calculated from previous internal analysis simulating a cohort, and using Hawkins and others. It also uses probabilities of relapse to assess the probability of having remained abstinent for 10 years from a given set of former smokers who quit up to 10 years ago. This analysis assumed a constant number of quitters each year and calculated their relapse and mortality risks each year. Then it calculated at the end of 10 years the probability that a randomly sampled person who had quit in one of the last 10 years, and had remained abstinent, would be one who had quit over 10 years ago. This is slightly less than 10%, given a pool of ‘non-relapsers’ will skew more towards more recent quitters but is not significantly less as relapse becomes progressively less likely with time since quitting.

[749] Kontis and others. 2014. Contribution of six risk factors to achieving the 25×25 non-communicable disease mortality reduction target: a modelling study.
[750] Hawkins and others. 2010. Long-Term Smoking Relapse: A Study Using the British Household Panel Survey.

Starting population

1504. The model starts in 2023. For the first year, a starting population (by age and sex from 13 to 89) is assigned to each state. This is based on:

- ONS mid-population estimates from 2023 for the English population[751]
- ONS data on adult smoking habits to determine current and former smokers who are 18+[752]
- data from University College London (UCL)[753] to determine current and former smokers aged 16 to 18
- NHS Digital[754], to determine current and former smokers under 16[755]

1505. The data sources is from 2021 and 2022, and we have used this to approximate the 2023 population, which may lead to slight inaccuracies.

1506. An adjustment is then made to these data, reflecting the model's approach to former smokers, discussed above. Figures provided by the University of Sheffield based on Health Survey for England 2019 data on the proportion of former smokers who have quit within the last 10 years by age and sex are applied to calculate the number of former smokers who have quit within the last 10 years. The remainder of former smokers are assigned to the non-smoker state in the model.

1507. Running the model from the components described above, we are able to estimate the numbers of people by smoking status, by age, and sex per year as well as the number of deaths. This provides a baseline, which we can compare an intervention to.

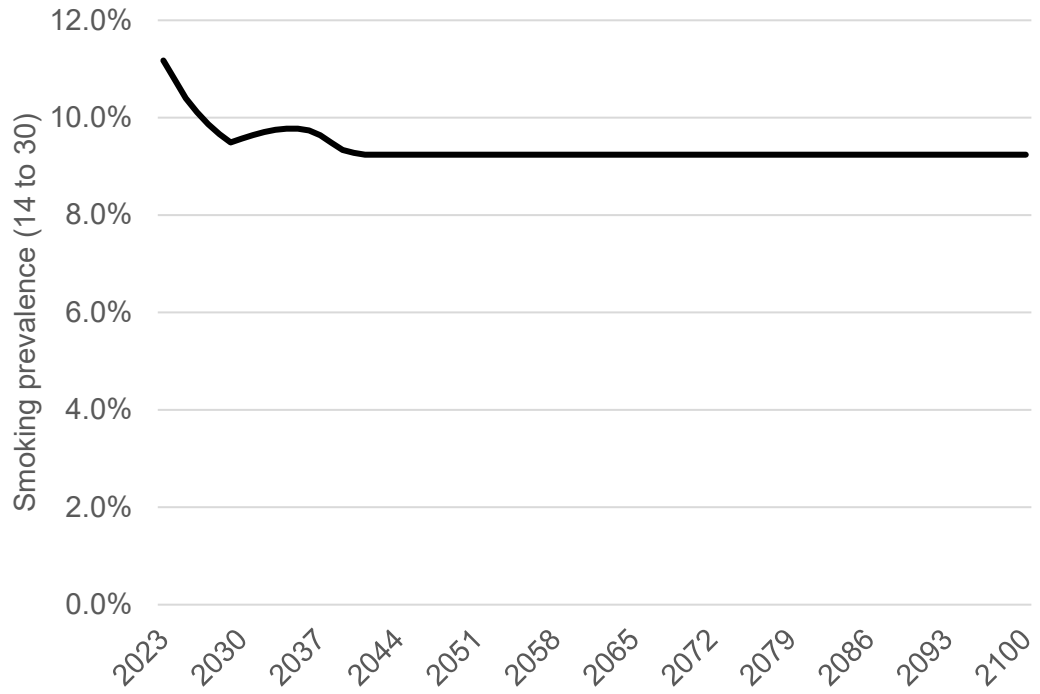
Baseline results

1508. Applying baseline transition probabilities to the starting population gives us results for a baseline scenario of no-policy intervention. This shows smoking rates decreasing in the short to medium term, in line with other published estimates from Cancer Research UK's Smoking prevalence projections for England, based on data to 2021[756], and University of Sheffield's projections from 2021, published in the Royal College of Physicians report Smoking and health 2021: a coming of age for tobacco control?[757]

[751] ONS. 2022. Estimates of the population for the UK, England, Wales, Scotland and Northern Ireland.
[752] ONS. 2023. Adult smoking habits in the UK: 2022.
[753] University College London. Smoking Toolkit Study: Top Line Findings. (viewed on 26 January 2024)
[754] NHS Digital. Smoking, Drinking and Drug Use among Young People in England.
[755] Note that these sources are typically from 2021 and 2022 and are used to approximate the 2023 population, which may lead to slight inaccuracies.
[756] Cancer Research UK. 2022. Smoking prevalence projections for England based on data to 2021.
[757] Royal College of Physicians. 2021. Smoking and health 2021: A coming of age for tobacco control?

1509. Initial smoking prevalence in 2023 in the model among 14 to 30 year olds is 11.2%. Figure 16 shows the modelled baseline prevalence among 14 to 30 year olds from 2023 to 2100. Without any additional policy measures, baseline prevalence is estimated to decline to a steady state of 9.2% in 2041 and continues at this level throughout the rest of the modelled period.

Figure 16: Modelled baseline prevalence in England among 14 to 30 year olds, 2023 to 2100



Impact of the intervention

Different impact scenarios

1510. As we primarily assumed the smoke-free UK policy to have an effect on instigation rates, we assume no changes to any other parameters, such as quitting and relapse.

1511. On the impact of the intervention, we constructed scenarios based on available evidence and assumptions. You can see 4 different modelled scenarios below. The scenarios range from pessimistic (less than 10% year on year reduction in the instigation rate) to optimistic (90% year on year reduction in the instigation rate). Each scenario takes into account that, at least in the short term, people under the legal age of sale will still take up smoking, something that already happens today.

1512. We modelled the smoke-free generation policy to start in 2027, with the age of sale first increasing from 18 to 19, and then increasing by one year each year thereafter.

1513. In all scenarios, the model assumes smoking instigation rates reduce year-on-year to reflect ongoing increases in the age of sale (for example in scenario 2, rates reduce 30% in the first year, a further 30% in the second year).

1514. Scenario 1 reflects the Institute of Medicine report Raising the minimum age of legal access to tobacco products in the US in 2015[758]. The report projected raising the age of sale by one year to 19 would reduce rates by 10% for most age groups below the

[758] Bonnie and others. 2015. The Effect on Tobacco Use of Raising Minimum Age of Legal Access to Tobacco Products.

threshold, and 5% for some. This scenario also includes a small ‘rebound effect;’ a 5% increase in instigation for the 2 age groups just above the age of sale threshold.

1515. Scenario 2 assumes a 30% reduction in instigation rates per year for people below the age of sale. This reflects a projection from UCL’s modelling of recommendations for tobacco control in England, that raising the age of sale to 21 would reduce prevalence among 18 to 20 year olds by 30% and reduce instigation rates by the same amount[759].

1516. Scenario 3 assumes a 60% reduction in instigation rates per year for people below the age of sale. This reflects the mid-point of scenario 2 and scenario 4.

1517. Scenario 4 assumes a 90% reduction in instigation rates per year for people below the age of sale. This reflects the assumptions used by the New Zealand Government for its implementation of a smoke-free generation, which assumed a 100% reduction in instigation rates. We have modelled a 90% year on year reduction here rather than assuming smoking instigation will immediately stop.

1518. In addition to these four scenarios, the impact of the scenarios considered in the sensitivity analysis in this impact assessment were also estimated using this model.

1519. As described in the main document above, the central scenario is one where, for those under the age of sale, instigation rates for a given age and sex reduce by 30% each year.

1520. By applying these rates as an input and running the model, we can see the impact of the policy in terms of the difference in numbers of non-, current, and former smokers by year, age, and sex, as well as differences in mortality.

[759] University College London. 2021. UCL modelling of recommendations for tobacco control in England.

Life years gained and QALYs from mortality

1521. By looking at differences in the number of people dying when running the policy scenario (with reduced instigation rates) versus the baseline, we can determine the number of smoking-related deaths avoided.

1522. Also, by counting the reduction in the number of people in the dead state each year, we can ascertain 'life years gained'. Life years gained is a measure of the total number of years of extra life within the population due to the policy.

1523. We can also estimate the quality of life lost in order to generate Quality-Adjusted Life Years (QALYs) lost due to mortality. QALYs are a measure of (health related) quality and length of life, where 1 QALY represents 1 year lived in full health (a quality of life score of 1 on a 0 to 1 scale). Research has found that the mean health-related quality of life score (utility value) for the general population was 0.828 (Sullivan and others)[760]. We use this value to approximate the quality of life of the extra years lived by someone who does not take up smoking as a result of the policy, in the absence of any information about their health status. Multiplying this quality of life score by years of life gained gives us total QALYs, which in turn can be multiplied by £70,000, as per the HM Treasury Green Book[761], to represent the monetary value of additional QALYs.

Disease cases

1524. We have estimated the cases avoided of certain health conditions as a result of the smoke-free generation policy, specifically:

- lung cancer
- COPD
- CHD
- stroke

1525. Together, these four conditions, according to Global Burden of Disease data from 2019[762], represent nearly 60% of the disability-adjusted life year (DALY) burden caused by smoking in England. The DALY is a measure of both the mortality and morbidity impacts of a health condition.

[760] Sullivan and others. 2011. Catalogue of EQ-5D Scores for the United Kingdom.
[761] HMT. 2022. The Green Book: appraisal and evaluation in central government.
[762] Institute for Health Metrics and Evaluation. Global Burden of Disease. (viewed 26 January 2024)

1526. We carried out the calculation based on two inputs:

- incidence (number of new cases) data from the Global Burden of Disease 2019 study, for England by age and sex,
- data on the relative risks of developing a disease based on smoking status, from the Royal College of Physicians (RCP) report Hiding in plain sight: treating tobacco dependency in the NHS.[763]

1527. The RCP report suggested a relative risk of 8.96 for lung cancer, for current smokers. This means they are 8.96 times more likely to develop the condition than non-smokers. For former smokers, the relative risk was 3.85. Table 112 provides the Relative Risks used, noting some of these were disaggregated by males and females and in the case of CHD by age too.

Table 112: Relative risks of disease, by smoking status and sex

Condition	Current smokers		Former smokers	
	Males	Females	Males	Females
Lung cancer	8.96		3.85	
Stroke	1.57	1.83	1.08	1.17
COPD	4.01	4.01	3.13	3.13
CHD (<35 year olds)	1	1	1	1
CHD (35-64)	3.18	3.93	1.59	1.48
CHD (65+)	1.96	1.95	1.16	1.37

1528. Given the age-disaggregated risks for CHD implied no increased risk in under 35 year olds, in order to be conservative, we applied the other risks only to those over 35.

Costs

1529. We applied estimates of the cost of smoking to the model outputs, to determine the savings from a reduction in smoking instigation.

1530. These were sourced from Action on Smoking and Health's (ASH's) Ready Reckoner[764]. This cost calculator assesses the annual cost of smoking of:

- Productivity costs (or costs to the economy)
- healthcare costs to the NHS
- social care costs to Local Authorities; the cost of smoking-related fires and productivity costs (meaning the costs to the economy)
- the cost of smoking-related fires

[763] Royal College of Physicians. 2018. Hiding in plain sight: Treating tobacco dependency in the NHS.
[764] Action on smoking and Health. 2023. ASH Ready Reckoner.

1531. At the time of this analysis, these estimates from ASH were identified as the best and most up to date available for the different costs of smoking to society.

1532. Below is a summary of the methodology and data used to estimate each cost component.

Productivity costs

1533. The estimate for the cost of smoking on productivity includes:

- lost productivity due to smoking-related early deaths (valued at the income lost to people dying prematurely)
- reduced employment levels for smokers compared to non-smokers
- reduced earnings for smokers compared to non-smokers

1534. The estimate for the cost of lost productivity due to smoking-related early deaths is based on:

- the years of potential productivity lost to smoking-attributable early deaths
- distribution of earnings from employment and self-employment in the UK

1535. The years of potential productivity lost to smoking-attributable early deaths is based on:

- data on smoking attributable mortality from OHID's Local tobacco control profiles[765]
- labour market statistics from ONS' Data and analysis from Census 2021[766]
- average remaining years in employment for non-smokers in employment from an analysis of micro data (information at the level of individual respondents) from the Understanding Society (USoc) survey[767]
- micro data on the distribution of earnings from the Department for Work and Pensions' Family resources survey[768]

1536. The estimates for the costs of smoking to productivity from reduced employment levels and earnings are based on data from the USoc survey. The data from the USoc survey is used in regressions to estimate the relationship between earnings, employment, and smoking status. The analysis attempts to control for other factors that affect people's earnings and likelihood of being employed, such as age, sex, ethnicity, and education.

Healthcare costs

1537. ASH estimates for the healthcare costs of smoking to the NHS are based on the estimate by the Department of Health and Social Care (DHSC) 2017 policy paper

[765] OHID. Local Tobacco Control Profiles. (viewed on 26 January 2024)
[766] ONS. Employment and labour market. (viewed on 26 January 2024)
[767] Understanding Society. –Main survey. (viewed on 26 January 2024)
[768] DWP. 2023. Family Resources Survey.

Towards a smoke-free generation: a tobacco control plan for England[769]. These estimates are combined with new estimates from Public Health England for hospital admissions attributable to smoking, as outlined in its response to consultation on proposed changes to the calculation of smoking attributable mortality and hospital admissions[770].

1538. Given the DHSC estimate was from 2015, ASH made further adjustments to account for recent changes in:

- NHS costs
- Population sizes
- Distribution of ex-smokers

Social care costs

1539. The costs of smoking to social care covers the cost to local authorities of having to provide both care in a person's home (domiciliary care) and residential care. The cost is estimated based on data on smoking status and receipt of social care services from 2 English datasets, which are the:

- English Longitudinal Study of Ageing[771]
- Health Survey for England[772]

1540. The data from these datasets is used in regressions to estimate the relationship between smoking status and the need for social care. The analysis attempts to control for other factors that affect a person's use of social care, such as age, sex, family composition, and health status.

Fire costs

1541. The cost of fires caused by smoking includes the cost of:

- Fatalities
- Injuries
- Property damage
- Responding to fires

1542. The estimates for each component are largely based on data from Home Office Fire statistics data tables[773] and the report 'Economic and social cost of fire'[774].

[769] DHSC. 2017. Smoke-free generation: tobacco control plan for England.
[770] PHE. 2022. Proposed changes to how smoking-attributable risk is calculated.
[771] English Longitudinal Study of Ageing. The English Longitudinal Study of Ageing (ELSA).
[772] NHS Digital. Health Survey for England.
[773] Home Office. 2024. Fire statistics data tables.
[774] Home Office. 2023. Economic and social cost of fire.

Calculating unit costs

1543. To calculate a unit cost (the cost for each current or former smoker, except for fires where we only calculate costs for current smokers), we divided the 4 main categories of costs by the number of current and former smokers. We then divided these by the number of current and/or former smokers to obtain a unit cost, after uplifting costs to 2027 prices (the year the smoke-free generation policy comes into effect and the base year for this analysis) using the GDP Deflator[775]. It should be noted that the unit cost was calculated prior to the adjustment, which moved former smokers that had quit 10 or more years ago to the 'non-smoker' state of the model.

1544. For healthcare, social care, and productivity costs, we divided them by the total of all current and former smokers. Our reasoning was that health, social care, and employment consequences of smoking can accrue after a person stops smoking. For fires, we divided only by current smokers.

1545. The result of this was average costs by current and former smokers of:

- £1,156 for productivity losses per year
- £119 for healthcare per year
- £78 for social care per year
- £67 for smoking-related fires per year (current smokers only)

1546. We then divided these by the number of current and/or former smokers to obtain a unit cost, after uplifting costs to 2027 prices (the year the smoke-free generation policy comes into effect and the base year for this analysis) using the GDP Deflator[775].

1547. By applying these figures to the differences in current and former smokers from the model, we can estimate the cost savings due to the intervention.

Limitations

1548. This analysis used a model to help understand (among uncertainty) the extent of some of the likely consequences of the smoke-free generation policy. In developing the model, we made assumptions and simplifications, so it has limitations.

[775] HMT. 2023. GDP deflators at market prices, and money GDP September 2023 (Quarterly National Accounts).

Potential underestimation

1549. Some elements of the model likely underestimate the impacts. For example:

- we assumed that former smokers who quit 10 or more years ago have the same risk profile as non-smokers, and the model only applies per-person risk and cost figures based on former smokers in general to those who quit more recently
- the model assumed the policy only impacted on instigation rates rather than any further effects, like people smoking less
- the model calculated health outcomes only in terms of mortality and the onset of some smoking-related diseases - this includes QALY calculations that refer only to mortality effects, so do not include the considerable quality of life impacts of smoking-related morbidity

1550. So, as well as other diseases, the analysis does not include other health consequences of smoking, including two areas where outcomes are particularly poor for younger people:

1. Smoking during pregnancy, which is a major cause of:

- stillbirths[776]
- low birth weight[777]
- impairment of childhood lung development[778]

Local tobacco control profiles[779] shows that the prevalence of smoking in pregnancy is high for the 17 and underage range, at 31.8%, and the 18 to 19 age range at 31.2%.

2. Passive smoking, which can cause all the harms of smoking, although at lower levels. Children exposed to parental and household smoking are more likely to become regular smokers.

'Smoking, Drinking and Drug use among Young People in England'[780] shows that in 2021, 52% of pupils reported being exposed to second hand smoke in a home or in a car.

1551. As well as these limitations, QALY calculations refer only to mortality effects, so do not include the considerable quality of life impacts of smoking-related morbidity.

[776] Flenady and others. 2011. Major risk factors for stillbirth in high-income countries: a systematic review and meta-analysis.
[777] Selveratnam and others. 2023. Objective measures of smoking and caffeine intake and the risk of adverse pregnancy outcomes.
[778] McEvoy and Spindel. 2017. Pulmonary Effects of Maternal Smoking on the Fetus and Child: Effects on Lung Development, Respiratory Morbidities, and Life Long Lung Health.
[779] OHID. Local Tobacco Control Profiles (viewed on 26 January 2024).
[780] NHS Digital. Smoking, Drinking and Drug Use among Young People in England.

Potential overestimation

1552. On the other hand, the model may overestimate effects in some areas. It relies on ASH estimates on the cost of smoking. At the time of the analysis, these estimates were the best available that we were aware of, but they may potentially overstate the effect of smoking on employment and earnings, as well as the effect on social care. They also do not include all quantifiable costs of smoking, which would offset this to some extent.

1553. For example, the ASH analysis uses data from Understanding Society, the UK Household Longitudinal Study (USoc). This allows the regressions looking at the relationship between earnings/employment status and smoking status to control for a wide range of factors that may affect a person's earnings and employment status, specifically:

- Gender
- Age group
- Age of youngest child (interacted with adult gender)
- Limiting long standing illness or disability
- Ethnicity
- Highest educational qualification
- Pregnancy
- Caring for a disabled adult in the household
- Region of residence
- Housing tenure

1554. However, it is not possible to control for all factors that may affect a person's earnings/employment status, such as, aspects of deprivation, which is correlated with higher smoking rates. It is possible that some factors related to deprivation may result in both reduced earnings and higher smoking rates, but those reduced earnings are not due to smoking.

1555. Also, we applied societal costs of smoking per person to the whole modelled population of current smokers and former smokers (who quit up to 10 years ago). So, we modelled these to accrue earlier in life than when they might occur in reality, given these costs predominantly arise in older age.

Costs of living longer

1556. The model does not include the costs incurred in remaining alive longer. This is standard practice for health economic analysis. In line with the National Institute for Health and Care Excellence (NICE) guidance[781], we have not included costs unrelated to the conditions of interest. However, it is true that there will be additional costs for people who live longer, even excluding government payments like pensions that represent a transfer between parties and do not constitute a societal cost. We have not estimated the extent of these costs here. People who live longer will also contribute to society, and this is not captured beyond direct productivity impacts either.

Limitations in the structure of the Markov model

[781] NICE. 2022. 4 Economic evaluation.

1557. There are limitations, too, in the structure of a Markov model. Markov models only measure changes each cycle, and only look at the aggregate numbers of people in each state. It is not possible to measure an individual and their history in a Markov model. For example, it is not possible to apply a relative risk of disease function to people who stop smoking based on years since quitting.

Other limitations

1558. Other, more minor, limitations exist, such as the model not including smokers under 14 or over 90, nor the effects of population growth or migration.

Other uncertainties

1559. More generally, there is inherent uncertainty in the analysis, including uncertainty:

- over the impact of the policy
- over the baseline trends in smoking
- in forecasting far into the future

1560. It is not possible to overcome these points without further research. So, this analysis should be considered an attempt to assess the scale of potential effect, rather than provide a precisely accurate estimate.

Annex B

Products in scope of the ban on advertising and sponsorship

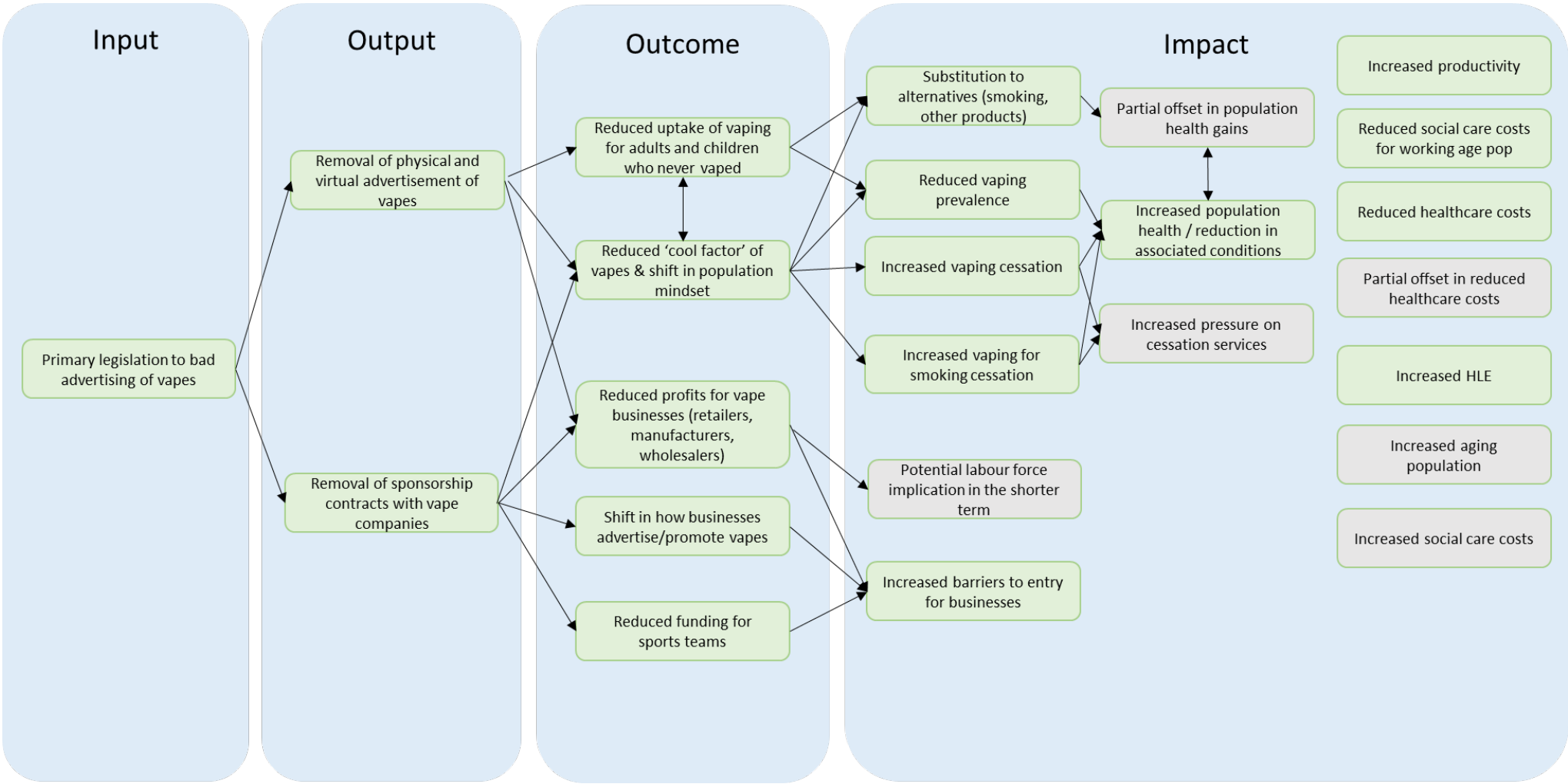
Part	Clause	Products
Part 6: Advertising	• 104: Publishing advertisements • 105: Designing advertisements • 106: Printing advertisements • 107: Distributing advertisements • 108: Causing publication, designing, printing or distribution • 109: Internet services • 113: Brandsharing • 114: Sponsorship: tobacco products • 115: Sponsorship: vaping and nicotine and other products • 116: Audiovisual services and radio broadcasting • 117: Extension of provisions about audiovisual and radio broadcasting	• Cigarettes • Hand rolling tobacco • Cigars • Cigarillos • Pipe tobacco • Waterpipe tobacco (e.g shisha) • Nasal tobacco (snuff) • Chewing tobacco • Heated tobacco • Blunts tobacco • Tobacco snus (banned for sale) • Cigarette papers • Herbal smoking products • Flavoured or unflavoured Nicotine vapes- liquid bottles, disposable (single use), pods/cartridges • Flavoured or unflavoured non-nicotine vapes- liquid bottles, disposable (single use), pods/cartridges • Nicotine shot liquids to be placed in Shortfills/Longfills • Vape devices: tank based, single use, cartridge/pod systems including E-hookah; e-cigars; e-pipes • Heated nicotine sticks • Herbal/Vitamin vapes-liquid or single use, pod/cartridge (classed as non-nicotine vapes) • Nicotine pouches • Future emerging nicotine products that are not: (a) a tobacco product; (b) a herbal smoking product;

		(c) cigarette papers; (d) any device which is intended to be used for the consumption of tobacco products or herbal smoking products; (e) vaping products.

Annex C

Logic model for ban on vape advertising and sponsorship

Key	Definition
	Direct impact
	Indirect impact



Annex D

Desk Research on List of Vape Vending Distributor Businesses

	Company name	Website
1	Vendovape UK	Vendovape UK
2	Vape Bot	Vape and E-Cigarette Vending Machine Manufacturer | Vape Bot
3	Sell A Vend	GPE 30 H170 Vape Vending Machine - Sell A Vend (sell-a-vend.co.uk)
4	Vendavape	UK'S No. 1 Vape Vending Machine | Venda Vape Group
5	Vape Apes	Vape Apes (vape-apes.co.uk)
6	Vapevend UK	VAPE VEND LTD overview - Find and update company information - GOV.UK (company-information.service.gov.uk)
7	The Vaping Group Ltd	The Vaping Group Ltd
8	Vendevape	OVERVIEW | Vendevape
9	EZ Vend	Vape Vending | EZ Vend
10	Vape Vaults	Vape Vaults - Vape Vending Machine Solutions
11	Digi Vape Vending	Fully managed vape vending machines - Digi Vape Vending
12	Fantasy Vapez Vending	Fantasy Vapez Vending - The Ultimate Vape Experience (fv-vending.co.uk)
13	Vape Vending UK	Vape Vending Machines – Elevate Your Vape Business with Smart Vending: Convenience Meets Cloud Technology (vape-vending.uk)
14	WKD vapes	WKD Vapes | Vending Machine | Bars | Clubs | Pubs | West Kingsdown (wkd-vapes.com)
15	Cloud Vending Solutions	Cloud Vending Solutions (cloud-vending.co.uk)
16	Nimbus vending	Nimbus Vending
17	Juicy Vend	Juicy Vend | UK's #1 Vape Vending Solution
18	The Vape Vending Machine Company Ltd	THE VAPE VENDING MACHINE COMPANY LTD overview - Find and update company information - GOV.UK (company-information.service.gov.uk)
19	D-Lish Vapes	Vending Machines | D-Lish Vapes JAKE
20	York Vending	York Vending|Vending Machines Yorkshire |Vape Vending Machines| Yorkshire|UK |York
21	Vape vend machines	VAPE VEND MACHINES
22	Vapehaus	Vapehaus
23	Triple P	Vape Vending Machines | Triple P | UK
24	Vapex Vending	Vapex Vending Machines
25	Saltica	E-Cigs Vending Machine - SALTICA
26	Vapeline vending	Vapeline Vending
27	Vendii	Vendii Ltd
28	Vape Vend Express	Vapevend Express

Annex E

Logic model for ban on vape vending machines

Key	Definition
	Direct impact
	Indirect impact