CCSA – Energy Bill Written Evidence Submission

1. Introduction

1.1 The Carbon Capture and Storage Association (CCSA) welcomes the Energy Bill on behalf of the CCUS industry and emphasises the importance of getting this legislation in place quickly, given the global race we are in to secure inward investment in Net Zero technologies. **This legislation is critical to enabling the government to sign revenue support contracts with the clusters and capture projects, required to keep the UK on track to deliver Net Zero. Those contracts will unlock billions of pounds of private sector capital into the UK's industrial regions.**

1.2 The industry is already investing huge sums at risk, on the basis of the investable business models the government is developing, but without an approved legislative framework and clear deployment plan, further investment is difficult to justify. Business models for the Hydrogen Transport & Storage (T&S) network – a critical part of the cluster infrastructure – need to be developed in parallel with CO_2 T&S networks, so we welcome the government's amendments on this. Alongside CCUS on industry, power and hydrogen production, we also need to see business models finalised for engineered Greenhouse Gas Removals, such as Direct Air Carbon Capture and Storage (DACCS) and Bioenergy with Carbon Capture and Storage (BECCS), which are moving forward rapidly in the US.

1.3 We are keen to see this momentum continue with rapid progression of primary and secondary legislation, industry codes and finalisation of the business models to ensure that all elements of the industry (transport and storage infrastructure, capture projects, regulatory frameworks and financial mechanisms) are ready to move forward simultaneously. This is essential if we are to meet Government's ambition of capturing and storing 20-30 million tonnes of CO2 per year by 2030.

2. Context and Benefits of CCUS

2.1 The Carbon Capture and Storage Association (CCSA) is the lead trade association accelerating the commercial deployment of CCUS across the UK and Europe. We represent over 100 companies who are investing in the entire CCUS value chain, including prospective end-users of the technology such as the cement, chemicals and energy from waste industries. Building a CCUS industry is critical not only in delivering net zero, but also in creating and protecting jobs, delivery energy security, attracting inward investment, exporting UK expertise and skills, and securing the UK's supply chain.

Delivering net zero

2.2 CCUS can significantly reduce the carbon footprint of multiple sectors of the economy – each cluster can deliver emissions reductions across the power, industrial, waste processing, construction and aviation sectors. CCUS can also provide negative emissions by removing carbon from the atmosphere. UK clusters would have the opportunity to deploy Direct Air Capture and Storage at scale to offset emissions from aviation and other hard to abate sectors. Whilst UK government funding will be needed to pump-prime the infrastructure investment, we expect to see voluntary markets offering a growing source of revenue going forward that will reduce that funding requirement over time.

Creating and protecting jobs.

2.3 The CCSA estimate CCUS will create a peak of over 70,000 new jobs as Opex and Capex is spent in cluster regions and their supply chains. In addition, carbon capture technology will help protect up to 77,000 jobs in carbon-intensive trade-exposed industries at risk of offshoring as carbon prices rise, the largest shares of which are in Yorkshire & Humber (21%), Wales (17%) and the North West of England (15%).

Deliver energy security and enable increased renewables.

2.4 CCUS is critical in delivering flexible low carbon power; either through gas-fired CCGT with CCS or hydrogen-fired turbines, with CCS used in the production of low carbon hydrogen. This will be essential balancing a grid with increased levels of renewables.

Attracting Inward investment

2.5 The CCSA calculates that the proposed CCUS cluster programme will deliver £42 billion in private capital expenditure between 2027 and 2035. Beyond the immediate CCUS industry we know that other sectors are watching the sector closely. Companies making global investment decisions now want to know that they can meet their carbon pledges in the future – and that means choosing sites with CO2 and hydrogen infrastructure. There is already significant anecdotal evidence of the draw of CO2 and hydrogen infrastructure in siting of future industrial developments e.g. new Sustainable Fuels and building products manufacturers who are looking for access to CO2 infrastructure and do not require Cluster Programme support (i.e. potential 'merchant' capacity for CO2 networks). UK Clusters have also seen a number of unsolicited approaches by European companies asking when the network will be available, with most considering UK or Netherlands, depending on how soon they can secure an MoU with a provisional connection date.

Advance UK's export potential.

2.6 With a third of Europe's geological storage (and as much as the EU27 combined), the UK can show global leadership by becoming an international hub for storing CO2 and exporting CCUS-related skills and services, building on our strong offshore, chemicals and engineering consulting skills base. There is strong evidence to suggest that EU CO2 storage is already over-subscribed, creating

the basis for a thriving export market in carbon storage services. CCSA estimates that investment this year in multiple clusters as outlined above could result in a UK CO2 storage sector collectively worth £30 billion in taxable revenues by 2050.

Secure the UK's supply chain.
CCS-enabled low carbon hydrogen production will be needed for decarbonising heavy industry. For those industries with significant process emissions that cannot be addressed by fuel-switching from gas to hydrogen, such as cement and lime production, CCUS installed on site is the only option. Our industrial members are keen to get share of the emerging market for low carbon products. The case for this opportunity is made forcefully by BEIS's 2019 *Energy Innovation Needs Assessment for CCUS*, which estimates a global market for industry CCUS and CO2 transport and storage components of £181 billion and £54 billion per annum in turnover by 2050 respectively.[7] However, the Inflation Reduction Act has put the United States ahead and Canada and Europe are now also offering similar inducements to investors that will see further flight of heavy industry from the UK, which if not countered, could mean the UK will lose its remaining supply chain and be fully reliant on imported low carbon products at a premium, acting as a drag on the economy.

3. Critical areas of the Energy Bill for a CCUS market to flourish

3.1 Developing a competitive market fit for the future

Upholding existing rights to offer a competitive storage service

3.1.1 Designing a new licensing regime to develop successful, at-scale, transport and storage networks for CCUS is challenging and the industry welcomes the Government's rapid work to develop this in the Bill. As we have seen in other regulated industries, the first licences awarded are likely to be very different to those awarded a few years down the line and the economics of the technology and market drivers will also change.

3.1.2 The legislative and regulatory system needs to be future-proofed by enabling private operators to develop competitive merchant models to transport and store carbon dioxide in the longer-term. This will also enable cross-border transport and geological storage of carbon dioxide to develop in time, without having to rely on exemptions being granted by the regulator to allow private networks to develop.

3.1.3 The CCSA is calling for consistency with the existing regulatory regime (the granting of geological storage licences by the Oil and Gas Authority (now the North Sea Transition Authority) which is already able to award licences to operators to store CO_2 under the Storage of Carbon Dioxide (Licensing etc.) Regulations 2010.

3.1.4 Future storage and transport competitive markets may not require economic regulation in the same way as the initial transport & storage monopoly providers will. The legislation needs to also provide for the development of these future markets where CO_2 stores (and parts of the value chain e.g. a CO_2 hub) are run privately and competitively outside of the economically regulated network, provided the safety of the CO_2 store is regulated as it is presently by the North Sea Transition Authority (NSTA). This is already exemplified by the NSTA awarding 12 companies a total of 20 licences to develop carbon dioxide (CO2) storage offshore, in Britain's first licensing round for such projects, the North Sea Transition Authority (NSTA). **We are set to have a very competitive CO2 storage market in the future and need to make sure the Bill does not prevent competition in CO2 transport and storage services developing.**

3.1.5 The UK has significant geological assets, with one third of Europe's entire offshore CO_2 storage potential (78 Giga Tonnes). This is equal to all the other EU states combined (88 Giga Tonnes) – only Norway (94 Giga Tonnes) has more in Europe. This enormous potential to offer CO_2 storage services to European and other countries, whilst providing a competitive storage market for UK emissions, presents the opportunity for the UK to become a global leader in CCUS, build a domestic supply chain and accelerate the global efforts to prevent CO_2 emissions. **The legislative framework should avoid any future barriers to developing this and cross-border transportation of CO_2.**

3.2 Shipping and other non-pipeline transport

3.2.1 Whilst pipeline will be the primary form of transporting CO_2, other modes of transport, including ship, road and rail, are already being developed in the UK and in other jurisdictions. **The legislative and regulatory framework must therefore be designed in such a way as to not limit future modes of CO_2 transportation.**

3.2.2 The CCSA is calling for flexibility for interim services of a carbon dioxide hub (which would be needed for certain forms of non-pipeline transportation) to be part of the value chain. We also note that non-pipeline transport providers may also provide CO_2 hub services as well as storage services or, for some clusters, the CO_2 hub services, and transportation and storage may need to be separated. **The legislation must provide flexibility for the future,**

enabling markets to develop in the most economically efficient and competitive way.

3.3 Enabling strategic investment in the network

3.3.1 If the UK is to meet its emissions reduction targets, carbon capture and storage will need to be rolled out rapidly across the UK during the rest of this decade. It is therefore vitally important that the regime set out in legislation enables initial oversizing of CO2 pipelines to allow for the subsequent rapid network expansion to connect more capture sites to a growing suite of storage sites.

3.3.2 The National Infrastructure Commission's 2019 Regulation Review on Strategic Investment and Public Confidence recommended that economic regulators' duties be updated to facilitate long-term investment in networks. It recommended implementing updated duties that will enable network operators to deliver the best results for the public by building and investing in networks that are resilient and fit to deliver Net Zero whilst also providing value to current and future users of those networks.

3.3.3 The economic regulator needs the necessary powers to make decisions that enable the required strategic anticipatory investment of a transport and storage network for CO2 to deliver net zero whilst balancing the interests of current and future transport and storage network users. Amendment 133 was passed in the House of Lords, however this is only relevant to the Electricity Act (1989) and Gas Act (1986) and therefore does not cover CO_2 networks. **While the new CCUS Strategy and Policy Statement should go some way to addressing this, in practice these mechanisms are not as strong as the regulator's own duties.**

3.4 Low Carbon Hydrogen Standard

3.4.1 Whether or not a producer is an eligible low carbon hydrogen producer should be determined solely by the revenue support regulations, which should reference, among other things, the Low Carbon Hydrogen Standard.

3.4.2 The government has defined a UK Low Carbon Hydrogen Standard which was updated in July last year. It includes Guidance and a calculator tool for hydrogen producers to use for greenhouse gas emissions reporting and sustainability criteria. The Standard has been designed to demonstrate that low-carbon hydrogen production methods can meet a greenhouse gas emissions test and threshold.

3.4.3 **CCSA recommends there is a need to link low-carbon hydrogen production eligibility to meeting the standard rather than being at the discretion of the Secretary of State.**

3.5 Hydrogen Levy

3.5.1 The existence of the Hydrogen Levy in the Energy Bill is required to ensure the production and deployment of hydrogen in the UK. **Without the government having a means of putting in place support for both hydrogen production and the transport and storage infrastructure required for hydrogen, the industrial clusters across the UK will not be able to proceed with their decarbonisation plans.**

3.5.2 The Government had made it clear that no decision has yet been taken with regards to how the hydrogen transport and storage business models will be funded. They are seeking powers in the Bill to establish a levy to provide "the option" of funding the external subsidy mechanism this way, with further consultation and impact assessments to be carried out before any decisions are made.

3.5.3 This legislation needs to provide the Secretary of State with powers to appoint a levy administrator and to make regulations to establish a levy to fund the external subsidy mechanism associated with both business models, and related costs. This does not therefore make provisions for the levy to be funded by the taxpayer through bills – rather a decision on this will be subject to further scrutiny at a later date and "will take into account wider government priorities and policies – including considerations related to the affordability of energy bills".

3.5.4 If the levy provision is removed prematurely it will limit the options to fund hydrogen development – and therefore CCUS clusters.

3.6 Protecting commercially sensitive information

3.6.1 It will be important to establish a framework for the licence holder to seek to protect commercially sensitive information which may be monitored, gathered or requested by the regulator.

3.6.2 The CCSA recommends that CO2 transport and storage licence holders be allowed to raise concerns with regards to protecting potentially commercially sensitive information to be shared with the regulator.