Written evidence submitted by William John Blackburn Roberts to the Great British Energy Bill Public Bill Committee (GBEB31).

Executive Summary

1.0 Current Government funding bodies is 100% to pay Government academic research institutions.

Government policy is to grant money to UK research organisations such as EPSRC funding - with examples given - P3.

2.0 Historically the UK's leading research breakthroughs had no links to Academic Research institutions.

The UK Government in the 20th century has traditionally decimated and axed its own inventors and industrial breakthroughs with examples given - P4.

3.0 All historical inventions in the 19th century and before had no links to academic research whatsoever, despite Britain leading the world ecoonomically.

From Talbot's Camera, Alexander Bell's Telephone, to the first railways (George Stephenson & Son and others), to Copper-plating the bottom of all the royal navy's ships, and more beforehand -P8.

4.0 In the 21st century, all R&D Government grant research has been funnelled directly to UK Research institutions, chiefly universities, with no marked results to speak of compared to the 20th and 19th centuries.

5.0 The UK's Great British Energy Company must target small private companies and inventors, some with no academic training in the necessary fields, but instead with the proof-of-concepts and evidence to support their inventions. Inventors do not think or work like University researchers.

1. Current Government funding bodies is 100% to pay Government academic research institutions (a UK research organisation such as EPSRC funding).

A cursory search on the UKRI at the time of writing (7th October 2024) shows of the 19 funding opportunities, all 19 are only available to bodies for:

- STFC funding - Science and Technology Facilities Council
- NERC funding, - Natural Environment Research Council
- ESRC funding - Economic and Social Research Council
- EPSRC funding - Engineering and Physical Sciences Research Council

All 19 grants are for the government to pay other parts of government. 100% of the funding is borrowing from Peter to pay Paul, create more jobs for the boys, and block R&D to inventors.

Innovate UK is the same, with research and technology organisation (RTO) and '**catapult centres**' - Government quango's in all-but-name, being preferred, at the first hurdle. At the second hurdle, gatekeepers to funding being **further** governmental departments - the APC, Horizon (EU), DESNZ, DBT, Smart Grants (Stupid Grants) and more.

None of these structures consider the route-to-market of the inventor, only governmental departments and are so far inferior than the UK's rival economies, that the civil service does not consider.

Inventors working on cutting -edge innovations are blocked from funding as it only goes to government-linked investment, and the funds are watered down through the civil service first.

If the UK Great British Energy company wishes to create actual inventions, it will need to invest money in inventors, not goveernment councils, departments and inefficient theoretical research departments.

2. Historically the UK's leading research breakthroughs had no links to Academic Research institutions.

The British Government consistently knifes British inventors in the back or actively works against them as I will show, debilitating the economy. In a pick of the past 150 Years of Firsts:

- **2.1 The Jet Engine,**
- **2.2 Television**
- **2.3 Light Bulb**
- **2.4 Hovercraft**
- **2.5 Computer (Named Colossus)**
- **2.6 Radar**

1. See also: 4-wheeled suspension, Antibiotics, ATM Machine, Dyson Hoover, AZTEC sonar, CT Scanners and more. All of these have been developed further by our allies and economic adverseries.

2. The UK is the only country in the world to develop a domestic satellite launch capability and destroy its own capability - at a development cost of £10m (the lowest ever, inflation or not). The satellite is still in space. In return the French *allowed* the UK to join the EEC in 1973.

2.1 World's first Jet Engine & Jet Commercial Airliner - British, Given Away For Free, Abandoned.

In 1929, Frank Whittle single-handedly deep-researched turbine engines, invented the Jet Engine and submitted it to the Air Ministry, his reply from the head of the air ministry was:

> *"The internal combustion turbine will not be rendered practical by the revolutionary design of some lucky inventor. The steam turbine engineer and the metallurgist … are the people with whom the future development of the turbine rests" – A.A. Griffith.* Whittle was extremely depressed.

British Government attitudes to inventors had been fixed beforehand and have remained for another hundred years.

Whittle patented the jet engine in 1930. The British government and many engine developers: Rolls Royce, Armstrong Siddley, and more, who Whittle approached, rejected his idea. Since his patent was published, German industrialists could view his patent with ease. It was picked up by Herbert A. Wagner at Junkers and Hans von Ohain at Heinkel. The German Air Ministry were far more supportive of the invention and invested millions of Reichsmarks and Rentenmarks (the German economy had two currencies from 1924-1948, aiding greatly in their economies growth).

By the end of the war their jet engine was far more advanced, though unstable. Germany had 7 fully developed, large wind tunnels for jet-engines & planes nationally. By comparison, Britain had one small multi-purpose wind-tunnel.

Frank Whittle, the inventor, went into a nervous breakdown, as the labour government forced his patent out of his control without compensation and handed his patents to Rolls-Royce who mass-produced his engines without his consent or control.

In the immediate post-war, **multiple Rolls-Royce Jet Engines were given away for free to the Americans and the Russians,** leading to the Mig-15**.** At first the Americans did not want the Jet Engines as they did not believe they would work well.

This was in despite of the fact the Americans directly copied a British design of an experimental plane begun in 1942 to break the speed of sound, that the British let them copy. The US plane then successfully broke the speed of sound and was a carbon copy of the British design.

Britain would later develop the world's first commercial jet airliner, the Comet in 17 July 1949 by De Havilland. Lack of investment meant that Britain De Havilland went bankrupt. Britain produces no commercial airliners despite being first-to-market in the huge sector.

2.2 World's first Television - British, Abandoned.

On 26 January 1926, John Baird gave a formal demonstration of his 'Televisor' in front of 40 members of the Royal Institution. In early 1927, the world's first television sets were offered for sale in Selfridge's. In 1928, Baird also demonstrated colour television for the first time.

Nevertheless, the American Google Inc happily states that:

> "Television was first successfully demonstrated in San Francisco on Sept. 7, 1927. The system was designed by Philo Taylor Farnsworth, who had been working on it since 1920."

Britain was the first-to-market and first to invent the television. At the time Google claims *Philio Taylor Farnsworth* demonstrated the world's first television, the same man could have bought one from Selfridges.

John Baird received no funding from the British Government, perhaps because he was based in Glasgow. **Today Britain produces no commercial televisions for domestic use or for export.**

2.3 World's First Lightbulb - British, Abandoned.

Joseph Swan invented the world's first lightbulb, using carbon filaments, in 1878. In 1880, Mosley Street, Newcastle, became the first public road to be fully lit by electric lighting. Representing a huge step forward forward for energy use.

In 1880, Edison demonstrated and patented his first lightbulb, using a bamboo filament. At the same time Swan was rolling out his lightbulbs predmonately in British mines.
This is the original example of Britain being first-to-market, but receiving no funding, and the inventor being abandoned to a foreign (US) competitor.

This is a good example to show how Britain has not invested in its own inventions and industries since the abolition of the navigation acts and corn laws (mid-1800s), which is nothing new, unlike its economic rivals.

2.4 World's First Hovercraft- British, Abandoned.

Christopher Cockerell had the good fortune to be born in Cambridge, and the academic abilities to study in Cambridge. He had the bad luck to be born in Britain, which does not invest in any of its inventors and instead degrades and denegrates them.

If he had not **inherited his father's boat and caravan hire company** there is no chance he would have had the resources to be able to develop the hovercraft by himself, which he did so, in the run-down sheds he inherited.

If he had not been educated at Cambridge, there is no chance he would have been able to have the network to be able to interest Saunders-Roe, who developed the Hovercraft further.

The Government provided no funding for him to develop his own company.

The Ministry of Defence provided limited funding for the development of the invention to Saunders-Roe. **Today Hovercraft are still produced for defence purposes by the USA, Russia and China, for amphibious operations.**

Britain produces no commercial hovercraft for domestic use or for export.
It maintains a single ferry service to the Isle of Wight.

2.5 World's First Computer- British, Given Away For Free, Abandoned.

The world's first computer was developed by Tommy Flowers, working at Bletchley Park, during World War Two. It was almost single-handedly developed by him, or you could call him the 'Senior Project Manager' in today's bureocratic parlance. Winston Churchill after the war demanded the destruction of all 18 Colossuses, as they were named, each the size of a small room, except two that were disassembled and shipped to the USA.

The parts were so large they were disposed of by being thrown down mineshafts by the women who had created and operated them.

Tommy Flowers went to British banks for a loan to develop a computer in the UK but was denied any money as he could not prove his invention.

Until the 1990s, the USA had believed that they developed the first computers.

Britain produces no mainstream multinational computers for domestic use or for export. The UK does not, and has never, had any industry or companies developing mass-produced amounts of computers with multiple plants, and/or multinational software companies as a result.

2.6 World's First Radar - British, Given away.

When France had just fallen to the Nazis and Britain had no money to develop the cavity magnetron on a massive scale, Churchill agreed that Sir Henry Tizard should offer the cavity magnetron to the Americans in exchange for their financial and industrial help (the Tizard Mission). An early 6 kW version, built in England by the General Electric Company Research Laboratories, Wembley, London (not to be confused with the similarly named American company

General Electric), was given to the US government in September 1940. The British magnetron was a thousand times more powerful than the best American transmitter at the time and produced accurate pulses. At the time the most powerful equivalent microwave producer available in the US (a klystron) had a power of only ten watts. The cavity magnetron was widely used during World War II in microwave radar equipment and is often credited with giving Allied radar a considerable performance advantage over German and Japanese radars, thus directly influencing the outcome of the war. It was later described by noted Historian James Phinney Baxter III as "The most valuable cargo ever brought to our shores"

Today Britain produces no commercial radar detectors for domestic use or for export.

- This was before it was known that the British had also given the Computer for free and the Jet engine for free to the USA.

2.7 Agreeing to give away sovereignty to USA for no return.

It is also worth mentioning the calamitous Breton Woods agreement, handled by the dying John Keynes where Britain gave away all of its' monetary tools (World's reserve currency to Dollar, IMF, World Bank, WTO, all to be based in the USA) agreed to split up Empire, agreed to further free trade, weakening its economy.

In return the UK accepted the largest lend-lease debt burden from the USA, for which the loans received it spent predominantly on the Royal Navy and overseas bases, not rebuilding the nation.

3. All historical inventions in the 19th century and before: no links to academic research whatsoever, despite Britain leading the world economically.

From Talbot's Camera, Alexander Bell's Telephone, to the first railways (George Stephenson & Son and others), to Copper-plating the bottom of all the royal navy's ships, and more beforehand.

Going through all of these inventions is moot in point, but the common denominator in all of these factors is that the British government invested in the development of the industries and sectors, if not the R&D costs, of these new inventions. Local banks, which were in every town, were happy to invest in local business; these do not exist any more, and in most cases neither do the branches.

When Government did not invest, for instance with the 'railway mania' of the 1840s, it was due to taxation being through the floor, relative to today and railway magnates being able to afford the mass-production of locomotives at Swindon, Crewe and Doncaster due to very cheap labour, as an example

All three of these large towns/cities, were developed from scratch, for the single purpose of creating such trains, which shows the rather stark difference between the nation's growth and also industrial growth and strategy from then and now.

4. In the 21st century, all R&D Government grant research has been funnelled directly to UK Research institutions, chiefly universities, with no marked results to speak of compared to the 20th and 19th centuries.

UK Universities have no impetus to innovate, unlike Universities. ROCs are charities, bound by their charter to be NGO's and not pursue profit.

Researchers at both institutions are not motivated by profit, and public money invested is not treated with the same gravity as it would be by private inventors in the world outside of public research.

Returns on investment into innovations would have far higher results if they were spent on inventors. This has been shown by Y Combinator, who for instance invest $500,000 in return for 7% in businesses - and have spawned Airbnb, Dropbox, Reddit, Instacart, Doordash, Gitlab and more.

If Great British Energy was to have this same approach with novel energy companies, it could end up with stakes in some of the world's most high-growth energy companies.

5. The UK's Great British Energy Company must target small private companies and inventors, some with no (highly expensive) academic training in the necessary fields, but instead with the proof-of-concepts and evidence to support their inventions. Inventors have already found -next-generation energy ideas and do not think or work like University researchers.

Evidence supports the fact that inventors are far more creative than University Researchers who are fantastic at cramming and memorising information for short periods, and getting fantastic exam results, but in the 21st century have not had the best record at inventing ideas that are both practical (not theoretical) and also commercial, due to their non-existant commercial experience and theoretical-based work within the confines of Universities.

The Great British Energy Company should focus its' funding towards smaller british inventors to achieve truly carbon-free energy. Inventors who have private sector experience, and the committee should learn from Britain's unique past of inventors who have self-educated to achieve their inventions against all odds, outside the stagnant, and represive backwards-thinking of a University research environment.

For instance US inventors at MIT have found a way of separating water from brine (water from a water-salt solution) using only the power of the sun, in a tower, by recycling the enthalpy of heat. This has not been commercialised, despite its huge potential and relative ease of commercialisation (if you are to read the linked document.

There are numerous examples of where independent inventors in the 21st century have solved some of the huge problems in energy, but there are no funding opportunities for inventors.

My own recent invention, relevant to British Energy has found a way to create unlimited electricity, with a working proof-of-concept, all within the laws of physics. This works by creating a piston-like chamber and generator system where electromagnets, without a soft iron core, work within a large permanent magnet field, and by quickly switching poles are able to create opposing linear momentum. These solenoids I call alternating polarity solenoids, or APS solenoids. Though working at electromagnetic flux, the solenoids are able to produce linear momentum enough to power generators.

This invention must be rapidly scaled, requires large amounts of laminated copper wiring and design refinement, to produce energy for a large number of homes at maximum efficiency.

As with many other past inventions as I have shown, the British Government has a track record of not supporting cutting edge inventions, but if it wishes to be at the forefront of energy inventions, it must invest in its own inventors, and not be afraid of investing in inventions from overseas and refining them further.

I would love to discuss my own invention for creating net positive electricity through magnetism at a very low cost.

To create a large-scale working demonstrator would cost less than £500,000 and I have submitted comprehensive and detailed applications to Innovate UK (Smart Grants) and DASA, but with no response at all of yet.

Grant applications for energy are at an all time low, and I hope very much that Great British Energy will invest in British inventors of Energy innovations for the future, not the past, so that the **UK can go from having the most expensive energy in the world for an OECD country to having the cheapest, and most green, supporting British Industry!** The knock-on effects of my own invention are truly substantial, and worth exploring for their potential benefits alone, and how close I am to a large demonstrator.

1. Totally Green Steel (without coke) https://www.corrosionpedia.com/definition/1486/steel-to-steel-electrolysis#:~:text=Steel%2Dto%2Dsteel%20electrolysis%20is,the%20aid%20of%20electrolytic%20cells. Via electrolysis.

2. No need for Diesel Generators, diesel engines and more.

3. No need for fuel oil and diesel engines in shipping (the largest source of dirty pollutors globally) - allowing for British shipping to once again be world leading.

4. Far cheaper Aluminium, Titanium and other metal production via electrolysis alone.

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