Government unveils investment for energy technologies of the future

- ‘British energy security strategy’ backed up with hundreds of millions of pounds of investment for developing cutting-edge energy technologies.
- support will unlock investment and opportunities in hydrogen, advanced nuclear and Carbon Capture Utilisation and Storage (CCUS)
- new technologies will boost UK energy security, provide cheap, clean energy to homes and businesses and create thousands of jobs

The government has today (Friday 8 April 2022) launched a wide-ranging £375 million package of support for innovative energy technologies that will power British homes and businesses for decades to come and further strengthen the nation’s energy security.

This includes £240 million to support the production of hydrogen as a clean, low-cost energy technology, £2.5 million of funding to develop next-generation nuclear technology and a further £5 million towards research into carbon capture.

Today’s investment will support research, development and deployment of these cutting-edge technologies and give the country the energy independence it needs, reducing reliance on expensive fossil fuels. From next-generation nuclear reactors, to hydrogen for industry, power, transport and potentially heating, the government is revolutionising the way the UK gets its energy across a range of technologies.

Yesterday’s ‘British energy security strategy’, unveiled by the Prime Minister, sets out how Great Britain will accelerate the deployment of wind, new nuclear, solar and hydrogen, whilst supporting the production of domestic oil and gas in the nearer term – which could see 95% of electricity by 2030 being low carbon.

Business and Energy Secretary Kwasi Kwarteng said:

> This investment will unlock the enormous potential of hydrogen, advanced nuclear reactors and Carbon Capture to level up the UK energy landscape and deliver for businesses and households.
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> High gas prices and Russia’s aggression in Ukraine have highlighted the urgent need to produce more of our energy here in the UK.
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> That’s why we have set out bold plans to harness clean, cutting-edge, homegrown technologies and build the energy security we need for the future.

UK government for Scotland Minister Malcolm Offord said:

> Harnessing the enormous potential of low-carbon technology is at the core of our plans to bolster the UK's domestic energy supply, for the benefit of families and businesses across the country.
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> This UK government backing will accelerate innovation in some of the most promising technologies, including the development of hydrogen energy and next-generation nuclear reactors. Funding for vital carbon capture research, including three projects in Scotland, will help us meet out ambitions for decarbonisation.

Government support

Today's government support includes:

The £240 million Net Zero Hydrogen Fund, funding low carbon hydrogen production projects, with the aim of awarding funding from the end of 2022. This will advance the government's ambition to have up to 2GW of low-carbon hydrogen production capacity by 2025 and up to 10GW installed by 2030, using electricity to produce power by splitting water into hydrogen and oxygen.

The Hydrogen Business Model, which will support further investment in hydrogen production with £100 million for electrolytic projects to cover the difference between the cost of production (the strike price) and the sale price for hydrogen (reference price). Funding for this will launch this summer.

The Industrial Hydrogen Accelerator, a £26 million innovation funding programme to support UK industry in adopting hydrogen as a clean, affordable fuel source for sectors like manufacturing by demonstrating the feasibility of hydrogen to businesses and reducing the cost of switching energy systems.

A £2.5 million competition for bidders seeking to develop a UK Advanced Modular Reactor (AMR). These reactors use novel and innovative fuels, coolants, and technologies to generate high-temperature heat for industrial applications as well as for electricity to power people's homes. Industry representatives are invited to apply for a share of this funding to develop their projects. On top of this, the Business and Energy Secretary has also announced today that nuclear regulators (the Office for Nuclear Regulations and Environment Agency) have been provided with an additional £830,000 of funding to help bring the development of UK AMRs to fruition.

£5 million government funding for accelerating Carbon Capture and Storage (CCUS) Technologies under the ACT 3 scheme. CCUS entails capturing, transporting and storing greenhouse gas emissions that would otherwise be released into the atmosphere meaning energy can be stored and used. ACT 3 is an international initiative between 14 countries worldwide including the UK, aimed at accelerating CCUS technologies through funding research and innovation projects and the funding will support the commercialisation of the technology so that companies right here in the UK can invest in it.

In addition to this funding, the government is also publishing a range of

important documents and guidelines to support the development of these industries.

Government support for hydrogen is also being complemented by extensive private investment, including ITM Power’s announcement of a new electrolyser plant in Sheffield which will support the hydrogen industry and create 500 jobs.

More information

All of these programmes are receiving support through the Net Zero Innovation Portfolio.

In addition to the investments detailed above, we are also publishing the following.

The **Hydrogen Investor Roadmap** to shine a spotlight on the numerous investment opportunities across the hydrogen value chain and drive private investment in hydrogen to help boost the homegrown UK hydrogen industry built on clean, affordable power. The **CCUS Investor Roadmap** will be published alongside this and summarises the current engagement of government and industry, outlining further opportunities to deliver CCUS and drive investment.

The **response to our consultation on a Low Carbon Hydrogen Standard**, with the intention of setting a maximum threshold for greenhouse gas emissions allowed in the production process for hydrogen to be considered low carbon under the Net Zero Hydrogen Fund and hydrogen business model.

The **Hydrogen Business Model** to bring forward significant private investment in new low carbon hydrogen production, with government providing an initial £100 million in revenue support funded by the Industrial Decarbonisation and Hydrogen Revenue Support (IDHRS) scheme.

The **response to our consultation on the Hydrogen Business Model** also provides an update on the government reviews of hydrogen network and storage infrastructure requirements in the 2020s and beyond, as committed to in the Hydrogen Strategy.

The Industrial Hydrogen Accelerator

The Industrial Hydrogen Accelerator is a £26 million innovation funding programme to support the demonstration of end-to-end industrial fuel switching to hydrogen in the UK. It aims to prove the feasibility and reduce the costs and risks of hydrogen fuel switching systems.

The scope will include the full technology chain, from hydrogen generation and storage through to industrial end-use, including the integration of the components in a single project.

The projects will develop knowledge on design and implementation of industrial hydrogen systems and showcase ‘first-of-a-kind’ blueprints to enable deployment in the late 2020s.

The fund will open for applications in the week commencing 25 April 2022 and demonstration projects must be complete by March 2025. Find more information on the IHA.

ACT 3

ACT 3 is an international initiative between 14 countries worldwide including the UK, aimed at accelerating and maturing carbon capture, utilisation and storage (CCUS) technologies through funding research and innovation projects. CCUS entails capturing, transporting and storing greenhouse gas emissions that would otherwise be released into the atmosphere.

ACT partners include the Province of Alberta, Denmark, France, Germany, Greece, India, Italy, Netherlands, Norway, Romania, Switzerland, Turkey, UK and the USA.

The UK element of the ACT 3 programme is funded from the NZIP and will be providing up to £5 million in funding up until 31 March 2025 for CCUS developers to expand on their research. The £5 million provided by the UK will contribute to a total funding pot of around £40 million (including in-kind and industry funds), of which around £25 million is being provided by ACT partners.

ACT 3 follows on from ACT 1 and 2 which provided a total of around £58 million, where 15 UK projects were funded a total of £13 million from this pot. Some key outputs from the programme include international collaboration, dissemination of findings, and promoting the acceleration of CCS technologies towards full scale/commercialisation. Find out more about ACT.

AMR Demonstration Programme

High Temperature Gas Reactors (HTGRs) are the technology focus for this innovation programme as they optimise opportunities for decarbonising industrial heat by 2050. This was announced at the Nuclear Industry Association (NIA) annual conference on 2 December 2021 by Energy Minister Greg Hands.

The AMR Research, Development and Demonstration Programme: Market Engagement was carried out during February and March 2022.

Previously, we published a prior information notice which set out our intention to publish formal competition documents for the initial phase (Phase A) of the programme in Spring 2022.