

Innovative funding models and technologies to drive investment in new wave of low carbon energy

- new funding approach could help deliver nuclear power and carbon capture technology, key to delivering net zero emissions, at the best possible price for consumers
- up to £18 million investment to develop the UK's first mini reactor which could power up to 750,000 homes

New nuclear power and new technologies to cut emissions across the economy could be rolled out under a new financing model and government investment to decarbonise the UK's energy sector.

The government today (23 July 2019) set out [proposals to explore the use of the Regulated Asset Base \(RAB\) approach](#) to attract significant private investment for future nuclear power in the UK.

Regulated Asset Base approach

Already used in major infrastructure projects like the Thames Tideway Tunnel, the alternative model could reduce the cost of financing infrastructure and risk for developers while limiting the impact on consumers' bills in the long-term.

Business and Energy Secretary Greg Clark said:

Reaching net zero emissions will require action across all areas of society – from innovators, government, regulators and civil society. We will all need to act together to ensure we cut emissions and build a vibrant and innovative economy that can continue to capture the economic benefits of clean growth.

A critically important step in reaching net zero emissions will be transforming the energy system so the economy can be powered by affordable, secure and clean energy. We will need to change not just the way we use energy in our homes and businesses, but also how it is produced and delivered. We need to do this in a way that keeps the cost of energy as low as possible and ensures our energy security is never compromised.

Through our modern Industrial Strategy we are building on our international leadership in clean growth to invest and develop the technologies and funding models we will need to reach net zero emissions. This new funding model has the potential to help UK industry seize the global challenge of the low carbon transition by building the infrastructure we need, while offering value for money

for consumers and taxpayers.

The RAB approach could also be used to reduce the costs of the transport and storage of carbon dioxide. A funding model similar to the Contracts for Difference scheme, which provides developers with a set price for low-carbon electricity will be explored alongside other options to deliver investment in Carbon Capture Usage and Storage (CCUS) power projects while cutting emissions. The government's ambition is to roll out the technology at scale by the 2030s, subject to costs coming down, as part of its world-leading commitment to become a net zero emissions economy by 2050.

Other announcements

Other announcements today include:

Funding for small and advanced modular reactors

In a further boost to the nuclear sector, we are proposing to invest up to £18 million of government money in the creation of innovative mini nuclear power stations which are smaller and less expensive to build than traditional nuclear plants. A consortium led by Rolls-Royce has proposed a significant joint investment of more than £500 million focused on designing a first-of-a-kind small modular reactor (SMR). The consortium expects to more than match any government funding both by direct investment and by raising funds from third party organisations.

A working model is expected to be up and running in the early 2030s, creating 40,000 jobs at its peak, with each power station producing enough clean energy to power 750,000 homes.

Additionally, we are providing up to £40 million through the Advanced Modular Reactor (AMR) programme and are currently considering project bids. Up to £5 million will also be provided to the Office for Nuclear Regulation and the Environment Agency to build readiness for SMRs and AMRs, subject to outcome of the AMR R&D competition.

Support for heavy industry to decarbonise

The government has committed £170 million towards deploying technologies like carbon capture and hydrogen networks in industrial clusters to support our mission to establish the world's first net zero industrial cluster by 2040.

Additionally, industry will consider investing up to £261 million into new technologies to reduce emissions from heartlands of heavy industry such as steel, chemical and refineries in the North East, North West, South Wales and Scotland.

Reusing oil and gas infrastructure for carbon capture

Plans have also been announced to make it easier to [recycle oil and gas infrastructure for use in CCUS projects](#), including using some of the 20,000

km of pipelines and depleted oil and gas reservoirs to transport and store carbon dioxide. This could drive down costs of construction by over £100 million in some cases.

Reusing existing oil and gas infrastructure for CCUS will help to tackle emissions from industry and support people working in the oil and gas industry to move into the green economy, as the UK transitions away from fossil fuels.

Today's consultations follow sustained support for carbon capture technologies from the government, which includes recently investing £26 million into 9 schemes. One of these, in Cheshire, will soon become the UK's largest carbon capture project, with the captured carbon dioxide potentially being used to make a range of products, from eye drops to instant noodles.

Phasing out coal

Great Britain has already gone more than 2,500 hours without using coal for power this year – around 4 times more than the whole of 2017.

We will continue to phase out coal and will no longer be used to keep Great Britain's lights on during the height of winter, under new proposals. Limits to the carbon emissions that electricity generators can produce when operating within the capacity market could be introduced to support the government's ambition to phase coal out of the energy system entirely by 2025.

Notes to editors

1. Today the government published a package of proposed measures to support the decarbonisation of the UK's energy system. These include a:

2. Small Modular Reactors (SMRs) and Advanced Modular Reactors (AMRs) are part of the advanced nuclear technology sector which covers a range of new innovations under development. Modular Reactors are smaller than conventional nuclear power station reactors and are designed so that much of the plant can be built in a factory and transported to site for construction. They usually fall into 2 categories – either smaller water-cooled reactors which are evolutions of existing nuclear power station reactors (known as SMRs), or Advanced Modular Reactors (AMRs) which use new cooling systems or fuels and potentially offer new uses for nuclear energy.

3. A UK consortium led by Rolls-Royce has proposed an industry and government match-funded challenge worth c £500 million to support the design of a standardised small modular nuclear power station. The government can today confirm that the Consortium's proposal has been accepted into Wave 3 of the Industrial Strategy Challenge Fund. The government is looking to make an initial award of up to £18 million to the Rolls-Royce-led consortium in early Autumn 2019. This is subject to a final decision to invest, including with business case and other approvals, and this consortium representing the best option for pursuing this technology. Further questions on the approach to this challenge are welcomed until 16 August. If you would like more details

please contact LCNEOI@innovateuk.ukri.org – further information will also be made available on the [UKRI website](#).

4. Phase 2 of the Advanced Modular Reactor programme will award up to 4 R&D grants of up to £10 million subject to a positive evaluation of the proposed studies studies.

5. Up to £5 million will also be provided to the Office for Nuclear Regulation and the Environment Agency to modernise the Generic Design Assessment (GDA) and continue building readiness to take future licensing decisions on SMRs and AMRs subject to outcome of the AMR R&D competition.

6. Since it was formed in 2016, the Department for Business, Energy and Industrial Strategy has already taken significant action to reduce emissions from the energy sector, including:

- becoming the first major economy in the world to legislate for net zero emissions by 2050 to end the UK's contribution to climate change entirely
- committing to phase out coal entirely by 2025 from our energy system, with just 3% of electricity coming from coal in the first 5 months of the year
- launching the Powering Past Coal Alliance with Canada, encouraging more than 80 members to pledge to phase out coal
- launching the Clean Growth Strategy to ensure the UK can seize the benefits of moving to a greener, cleaner economy with the potential of 2 million jobs and £170 billion of annual exports by 2030
- announcing up to £557 million support for renewable electricity projects like offshore wind through the Contracts for Difference scheme
- striking a deal with the sector through our Industrial Strategy to provide a third of our electricity from offshore wind by 2030
- committing to rolling out carbon capture technology at scale in the 2030s, subject to costs coming down, and investing up to £170 million to create the world's first net zero industrial cluster by 2040
- supporting the continued installation of solar panels – now totalling 850,000 – providing up to a quarter of the UK's electricity supply and introduced a new subsidy-free scheme to encourage further take-up
- bidding to host crucial global climate talks COP26 in the UK next year in partnership with Italy to encourage other countries to raise the ambition of their climate targets