

## **Nuclear Professional welcome the Government's Energy Security Plan**

The Nuclear Institute warmly welcomes the Government's plans to deploy British-built nuclear plants across the country to improve our energy security and provide reliable and affordable electricity to everyone in this United Kingdom.

The nuclear professionals that comprise the Institute's membership have kept the UK's nuclear facilities safely producing clean and reliable energy since the late 1950s and have contributed significantly to the safety and security of the UK. Together, they have saved the release of more carbon dioxide than any other single industry in our history.

Inaction over several decades regarding the replacement and renewal of the existing nuclear fleet means we are now facing shortages of sovereign, clean power and risk losing key industrial skills. With certainty in a way forward and the clear intent to deploy nuclear as a vital component of the future UK energy mix, these key skills can be developed before the UK experiences acute shortages.

The Nuclear Institute supports the rollout of renewable energy alongside nuclear energy as part of a strong system. Renewable investment without a backbone of reliable nuclear power, however, raises consumer prices and hurts grid stability. Since the wind doesn't always blow and the sun doesn't always shine the cost of intermittency becomes increasingly punitive. Renewable energy must currently be buffered and "subsidised" for its intermittency with gas fired generation. Such generation, using natural gas produces carbon dioxide, relies on the volatile market price of gas and reduces our energy security by relying on imported gas and the world gas market.

With capacity factors between 80-100 % and new plants averaging around 95 % capacity factor, nuclear power has and can continue to provide reliable electricity at low cost. The Hinkley Point strike price of £92.50/MWh (which will reduce should Sizewell C be given the go ahead), is substantially lower than the current market price of £200/MWh - £300/MWh. Once a rolling programme of new nuclear build is initiated, costs will reduce significantly. Once Royal Assent is granted to the nuclear financing bill, reducing the cost of capital, costs will fall still further and Rolls-Royce SMR estimate that once a fleet of their Small Modular Reactors (SMR) are constructed, they could produce electricity for around £50/MWh. Nuclear power must comprise a large portion of our generating capacity moving forward to meet our goals of climate change, energy security, cost reductions and broader economic growth.

Each nuclear plant provides many thousands of jobs. With around 60,000 people currently employed in the nuclear industry in the UK it is already a significant employer. A large-scale nuclear power plant will employ thousands of people during construction and hundreds during operation. These jobs are secure, high quality and well-paid jobs, providing employment for generations of families. The areas around nuclear power plants benefit from the taxes and spend from the workers in their communities, typically in economically deprived, rural areas. The advent of the Rolls-Royce SMR concurrent design, manufacturing and regulatory assessment programme will kick start the UK's manufacturing base, allowing it to build and

export SMRs around the world and encourage other SMR and Advanced Modular Reactor (AMR) vendors to the UK to deploy their plants and take advantage of our re-discovered manufacturing expertise. This expertise will allow the UK to access a market estimated to be worth around £250bn.

British built nuclear power plants deployed in the UK will substantially increase our energy security and independence. The small amount of uranium fuel required for our plants can be sourced from a number of politically stable countries around the world, with the potential to utilise and secure the UK's existing fuel manufacturing capability. Recycling of fuel could be considered in later years to further guarantee our energy security. Removing our reliance on imported gas and interconnections will shore up our sovereignty and ensure we are immune to world events such as those seen recently which have drastically increased our energy prices causing problems for the most vulnerable in our society.

The Nuclear Institute is the professional membership body and learned society for the nuclear industry. Representing over 3,000 professionals at all levels across the nuclear industry, from new build and operations to decommissioning, the Nuclear Institute sets the standards for nuclear professionalism.

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