The Nuclear Industry Association (NIA) welcomes the chance to feed into the Department of Business, Energy & Industrial Strategy’s Working Groups on the post-Covid economic recovery.

The NIA is the trade association and representative body for the civil nuclear industry in the UK. We represent around 250 companies operating across all aspects of the nuclear fuel cycle, including the current and prospective operators of nuclear power stations, the international designers and vendors of nuclear power stations, and those engaged in decommissioning, waste management and nuclear liabilities management.

A number of our members will be making their own detailed submissions. The focus of this submission is therefore on high-level, industry-wide matters.

**Nuclear and Net Zero**

To meet the challenge of climate change, the UK needs bold and urgent action through the deployment of clean energy across the country. Particularly during this difficult period, we must also protect and enhance our quality of life by ensuring there is affordable power for homes, businesses, schools and hospitals, as well as providing jobs and career opportunities in the green economy.

Nuclear is essential to the UK’s decarbonised electricity mix, currently supplying 20% of electricity demand and nearly a half of our low-carbon electricity. During the challenging circumstances caused by the events of the past few months, nuclear has proven its consistency in keeping the lights on even during adverse events and showcased its ability to be flexible when necessary.

The Committee on Climate Change states that “power sector decarbonisation does not rely on variable renewables alone, but a portfolio of technologies including nuclear power”, and that 38% of our electricity should come from ‘firm’ low carbon sources. Nuclear is the only proven source of low carbon generation and its role in the energy mix has been supported by multiple reputable institutions, including the OECD, IEA (2019), EIB (2019), IPCC (2018), MIT (2018) and the Energy Systems Catapult (2020).

**Supporting a green recovery**

Nuclear represents a multi-billion-pound economic stimulus opportunity as the country looks to rebound from the impact of COVID-19 and establish strong and enduring global trading relationships. By acting now, we can secure major domestic investment, maximise export potential and lock in a pipeline of engineering innovation which will deliver high quality, inspiring jobs for future generations, in every nation and region of the UK.
The industry currently provides around 65,000 direct jobs, extending to 160,000 when further job creation in the wider supply chain is included. Annually, the sector contributes £6.2 billion in Gross Value Added (GVA) to the national economy, with £4bn in the Northern Powerhouse area alone.

A programme of nuclear new build, from large to small-scale, would bring major strategic benefits to the UK, including economic levelling up and global industry leadership opportunities. Based on comprehensive modelling commissioned by the NIA, we conservatively estimate the domestic value of a thriving nuclear sector to:

- Deliver up to 40% of the low carbon power in a net zero economy;
- Be worth, by 2050, in excess of £33bn in GVA to the economy per year;
- Provide well over 300,000 job opportunities. Large GW scale projects bring major investment, each with over 20,000 roles in construction, including around 700 apprentices per-project and over 800 long-term jobs during operation

New nuclear projects have beneficial supply chain impacts on major strategic industries. An example is UK steel, with 200,000 tonnes of Welsh steel being used on the Hinkley Point C project alone. There are several large-scale nuclear sites in the UK that are under development, some of which are shovel ready. With political and financial support these projects will help bring prosperity to the regions in which they sit. They are:

- **Hinkley Point C, Somerset** – Hinkley is the only new nuclear plant currently under construction in the UK. To date, £1.67bn has been spent in the South-West, 10,300 have been created including 644 apprentices, and there has been £199m directly invested into the community.
- **Sizewell C, Suffolk** – The project offers 25,000 employment opportunities and 1,000 apprenticeships during construction. Up to 70% of the construction value will be spent with UK companies, with an estimated total of £1.5bn spent over the construction period in the local supply chain alone.
- **Wylfa Newydd, Anglesey** – Work on Wylfa was paused in January 2019. Starting construction on the site will trigger £5.3bn in supply chain opportunities; £875m of which will be seen in first two years alone. Work will also create up to 9,000 jobs including over 700 apprentices, and contribute £100m of GVA a year locally for 60+ years.
- **Bradwell B, Essex** – This station will generate enough electricity to power 4m homes. It offers long-term employment opportunities and 10,000s of jobs during construction, 3,000 of which will go to the local population. The local and regional economy will benefit from billions of pounds of investment, including support for schools and colleges in the development of STEM skills.

The UK already plays a major role in the international decommissioning market, and this will only increase as other countries’ plants also retire, putting us at an advantage of capitalising on an emerging global market worth hundreds of billions of pounds. Technologies and expertise developed in the UK have been successfully deployed in highly hazardous and complex sites around the world, saving those nations years of R&D, and significantly reducing any further risks.

Our growing expertise in the next generation of nuclear technologies includes Small Modular Reactors (SMRs) and Advanced Modular Reactors (AMRs). There are several UK companies and consortia which are well-placed to develop SMRs and AMRs. These include Rolls-Royce, Molten Energy, U-Battery and Westinghouse. Internationally, the USA, Canada and China are actively pursuing development pipelines, including designs by NuScalePower, GE Hitachi and the China
National Nuclear Corporation. There is strong interest from international players in the UK market, including opportunities to localise content.

- The UK SMR consortium led by Rolls-Royce estimates that exporting SMR technology could be worth £250bn if its programme is successful. The consortium predict construction on the reactors could start as early as next year, with expected deployment by 2025, creating 1,000s of jobs.

Regional growth

The Government has also made clear its ambitions to ‘level-up’ regions of the UK facing economic challenges. Nuclear’s history is deep-rooted in these communities, such as Copeland, Hartlepool, Anglesey and Bridgwater, and the sector has showcased how to successfully engage with and support local economies, through the creation of jobs, supply chains and educational resources.

There are many of brownfield sites across the UK that could be appropriate for both large and small nuclear reactors to bring prosperity to those areas, adding not only sources of low-carbon electricity but also clean heat and production of hydrogen in industrial clusters that will help safeguard strategic industries, such as steel production, as they decarbonise.

An investment programme in the nuclear industry will drive regional economic growth, innovation, and centres of excellence beyond metropolitan areas. The North West Nuclear Arc spanning from Anglesey in North Wales, across to Manchester and beyond to West Cumbria is well placed to benefit, along with the East and South West of England.

Nuclear is an economic powerhouse. The industry has remained resilient throughout this time of crisis and will play an important role in the UK’s economic recovery. However, to unlock the opportunities and access the benefits laid out in this response, the Government must make both short and long-term commitments to the industry through robust regulatory and financial policymaking.

Immediate actions that the UK Government could make are the release of the Energy White Paper and National Infrastructure Strategy, respond to the RAB consultation to indicate to industry the future of financing new nuclear, and the support of Wylfa Newydd and Sizewell C DCOs.