Written evidence submitted by the Nuclear Industry Association (PEG0243)

1. The Nuclear Industry Association (NIA) welcomes the chance to respond to the BEIS Committee inquiry on Post-Pandemic Economic Growth.

2. 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.

3. In our recent 40' by 50: The Nuclear Roadmap report, the NIA outlines the potential contributions of the UK nuclear industry to reaching Net Zero and details six short-term recommendations for industry and Government to meet in order to reach these ambitions. The three most relevant recommendations are the following:
   a) The Government should articulate a clear, long-term commitment to new nuclear power. There are opportunities to do this in the upcoming Energy White Paper, and in the National Infrastructure Strategy.
   b) Progress must also be made on an appropriate funding model for nuclear new build to stimulate investment in new capacity and reduce the cost of capital.
   c) Publish a National Policy Statement on small reactors, the development of which could stimulate local economies and bring jobs and investments to areas of the UK disproportionally affected by Covid-19.

4. Large-scale nuclear projects generate 20,000 high-quality construction jobs, and we believe that approving further projects of this scale would generate tens of thousands of secure, skilled and well-paid jobs, and help accelerate investment in innovative technologies. They would also provide the firm base of low carbon power we need for our net zero future.

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

What core/guiding principles should the Government adopt/prioritise in its recovery package, and why?

What opportunities does this provide to reset the economy to drive forward progress on broader Government priorities, including (but not limited to) Net Zero, the UK outside of the EU and the 'levelling up' agenda?

What opportunities exist for the UK economy post-Brexit and the pandemic for export growth?

How can the Government best retain key skills and reskill and upskill the UK workforce to support the recovery and sustainable growth?

6. The Government has made clear its intentions to position clean growth and decarbonisation at the centre of its post-pandemic economic recovery plans.

7. 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.

8. 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. The current fleet has saved more than 1bn tonnes of carbon emissions over its lifetime. 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 has showcased its ability to be flexible when necessary.

9. Net Zero needs nuclear.

10. The Committee on Climate Change (CCC) has estimated that the UK's electricity use may be up to four times what it is today in 2050, leaving a significant gap that needs to be filled by clean and low-carbon power if we are to meet these needs while simultaneously building an energy system that we get us to Net Zero.

11. The CCC's latest Progress Report (2020) to Government states that: "Reaching net-zero emissions in the UK will require all energy to be delivered to consumers in zero-carbon forms (i.e. electricity, hydrogen, hot water in heat networks) and come from low carbon sources (i.e. renewables and nuclear, plus bioenergy and any fossil fuels being combined with CCS)."

12. Nuclear is the only proven source of firm, 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).

13. In further analysis undertaken by the Energy Systems Catapult (ESC) into the future role of nuclear power using their highly sophisticated, peer-reviewed energy system modelling tool, the ESC concluded that constructing 10GW of large-scale nuclear power – equivalent to at least three more large-scale plants – in addition to Hinkley Point C would be part of a "low regrets" pathway to Net Zero.
14. The nuclear industry represents a multi-billion-pound economic stimulus opportunity that will contribute to critical new infrastructure, high-skilled job creation and prosperity across regions in the UK – from Cumbria and Anglesey to Suffolk and Bridgwater.

15. 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 £6.2bn in Gross Value Added (GVA) to the national economy, with £4bn in the Northern Powerhouse area alone.

16. 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.

17. 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 jobs have been created including 644 apprentices, and there has been £199m directly invested into the local community
    - Sizewell C, Suffolk – Early progress on Sizewell would see the creation of 2,500 to 3,000 jobs in the next 3 to 4 years, excluding the many more potential jobs in the UK supply chain created as the project progresses. 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

18. 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, Moltex 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.

19. 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 thousands of jobs.

20. Investment into small reactors today will also enable the nuclear industry's potential in the development of clean hydrogen and district heating, creating further jobs and prosperity in regions with SMRs.

21. 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.

22. The UK's first generation of nuclear power stations and early research facilities have left a legacy which requires management and, as a result, the UK has a varied portfolio of facilities to decommission. 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 – this remains a lucrative export for the UK.

23. The Government has said it is committed to levelling-up classically disadvantaged areas of the UK. 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.

24. As with any economic recession, these areas will likely be disproportionately affected by Covid-19. 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.

25. With potentially thousands of highly-skilled jobs – many of which are signposted for the local population – nuclear sites can offer both short and long-term prosperity to these regions as laid out in the examples of above.

26. Jobs at risk in manufacturing could be easily transferrable into the nuclear industry, either in the construction of new sites or in STEM roles. Recruitment remains a key priority for the sector, as detailed in the Nuclear Sector Deal published in 2018.

27. It is a misconception that to get a job in the nuclear industry, you have to have a nuclear physics degree. The nuclear sector offers a range of technical apprenticeships as well as graduate positions which can build the skills base ready for new build projects and ongoing decommissioning work.

28. The nuclear industry has already been focusing on reskilling and transferability as a result of the Net Zero target and as the UK moves away from fossil fuels. It is therefore well prepared to accept skilled workers that may have lost their livelihood because of Covid-19. However, a growth in jobs is reliant on political support for nuclear and its significant contributions to Net Zero.

29. 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.

Is the Industrial Strategy still a relevant and appropriate vehicle through which to deliver post pandemic growth?

30. As part of the Government's Industrial Strategy, it released – in collaboration with the nuclear industry – a Nuclear Sector Deal in 2018.

31. The nuclear industry continues to work towards the targets it has set for 2030, including cost reduction in new build and decommissioning, and winning billions of pounds worth of international contracts. Support for these activities are important to the short-term and long-term success of the sector, which would therefore be beneficial for a green recovery and post-pandemic economic growth.

32. More of our thoughts on the effectiveness of the Industrial Strategy and progress of the Nuclear Sector Deal can be found in our response to this Committee's inquiry on Post-pandemic economic growth: Industrial Strategy.

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