# Nuclear Industry Association Response to Energy Security and Net Zero Committee's 'Building Support for the Energy Transition' Inquiry

The Nuclear Industry Association (NIA) welcomes the opportunity to respond to the Energy Security and Net Zero Committee's 'Building support for the energy transition' inquiry.

The NIA is the trade association and representative body for the civil nuclear industry in the UK. We represent more than 300 companies operating across all aspects of the nuclear fuel cycle, including the current and prospective operators of nuclear power stations, international designers, and vendors of nuclear power stations, and those engaged in decommissioning, waste management and nuclear liabilities management.

### **Executive summary**

As a part of the energy transition, Government has committed to achieving Clean Power by 2030 and Net Zero by 2050 – meeting these targets is vital for the future of the planet and for generations to come. We should ensure we are not simply outsourcing our emissions by importing coal or gas generation from Europe counted as zero carbon.

Improving the UK's clean electricity production capabilities is the foundation for this, to power our grid, electric vehicles, heat pumps and production of hydrogen and synthetic fuels. Furthermore, increasing domestic clean energy production is essential for energy security, national resilience and economic prosperity. As a proven source of clean, reliable energy that creates highly skilled and well-paying jobs, nuclear is vital to the UK's energy transition. To ensure that the public understands Government decision-making during the critical lead-up to 2050, Government must understand the concerns behind the opposition to 'net zero' and accordingly emphasise the environmental, economic, and security benefits of the transition to communities across the UK. To support nuclear deployment as a part of the energy transition, we encourage Government to address misconceptions about nuclear energy and emphasise the benefits of nuclear for sustainability, job creation, and energy security.

- **1.** Has the Government properly explained the potential benefits of the energy transition to the average citizen?
  - **a.** We welcome Government's recognition that nuclear energy is vital to the UK's energy transition in the leadup to Net Zero by 2050, providing low-carbon, baseload power to the grid. <sup>1</sup>

<sup>&</sup>lt;sup>1</sup> Department for Energy Security and Net Zero (2024) *Clean Power 2030 Action Plan*. Available at https://assets.publishing.service.gov.uk/media/677bc80399c93b7286a396d6/clean-power-2030-actionplan-main-report.pdf

- **b.** Polling from 2024 shows that 43% of the public supports the use of nuclear energy in the UK, and only 29% oppose it. <sup>2</sup>
  - i. Support for nuclear stands to increase with greater knowledge about the technology, as 18% of the respondents did not know how nuclear energy works and 24% said they know a little about how it works.
- **c.** The Government's "Public Dialogue on Advanced Nuclear Technologies" report from 2021 suggested that more public engagement is needed on topics such as waste storage and disposal, safety, different types and uses of advanced nuclear technologies, and the contribution of nuclear technologies in the pathway to net zero.<sup>3</sup>
  - i. Compared to other clean energy technologies, nuclear technologies have lower infrastructure intrusion on land/seabed use, transmission and pipelines. According to the United Nations Economic Commission for Europe (UNECE), nuclear has the lowest land use, lowest ecosystem impact and the lowest lifecycle carbon of all generating technologies at 5.1-6,4g CO2/kWh.<sup>4</sup>
  - **ii.** Alongside hydropower and bioenergy, nuclear requires the lowest use of critical minerals according to the International Energy Agency.<sup>5</sup>
  - iii. The nuclear industry is the only energy sector in the UK that pays for and keeps an inventory of its waste. New build projects cannot commence plant construction until funded decommissioning programmes and plans for waste storage and final disposal have been laid.
  - iv. To ensure optimum safety, nuclear power plants in the UK and the Western world operate using a 'defence-in-depth' approach, with multiple safety systems supplementing the natural features of the reactor core. Nuclear has the lowest number of deaths from energyrelated accidents per unit of electricity compared to solar, wind, gas, oil and coal. <sup>6</sup>

<sup>&</sup>lt;sup>2</sup> Nuclear Industry Association (2024) Over 3x more support for the use of nuclear energy in the UK than its phase out new poll finds. Available at <a href="https://www.niauk.org/over-3x-more-support-for-the-use-of-nuclear-energy-in-the-uk-than-its-phase-out/">https://www.niauk.org/over-3x-more-support-for-the-use-of-nuclear-energy-in-the-uk-than-its-phase-out/</a>

<sup>&</sup>lt;sup>3</sup> Department for Business, Energy & Industrial Strategy (2021) *Public Dialogue on Advanced Nuclear Technologies*. Available at

https://assets.publishing.service.gov.uk/media/61277a048fa8f53dc274c84a/advanced-nucleartechnologies-engagement-report.pdf

<sup>&</sup>lt;sup>4</sup> United Nations Economic Commission for Europe (2022) *Carbon Neutrality in the UNECE Region: Integrated Life-cycle Assessment of Electricity Sources*. Available at

https://unece.org/sites/default/files/2022-04/LCA\_3\_FINAL%20March%202022.pdf

<sup>&</sup>lt;sup>5</sup> International Energy Agency (2021) *The Role of Critical Minerals in Clean Energy Transition*. Available at <u>https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions/mineral-requirements-for-clean-energy-transitions</u>

<sup>&</sup>lt;sup>6</sup> World Nuclear Association (2024) Safety of Nuclear Power Reactors. Available at <u>https://world-nuclear.org/information-library/safety-and-security/safety-of-plants/safety-of-nuclear-power-reactors#:~:text=The%20evidence%20over%20six%20decades,with%20other%20commonly%20accept ed%20risks.</u>

- **d.** To support the UK's energy transition, we encourage Government to increase public knowledge of nuclear technologies and crucially, the benefits of nuclear energy.
  - i. The National Energy System Operator projects annual electricity demand in 2050 to range from 533 TWh to 700TWh.<sup>7</sup> Nuclear is vital to meet future energy demand through stable, low-carbon, baseload power to the grid.
  - **ii.** Off the grid, advanced, high-temperature reactors are essential for providing clean heat to industries currently reliant on fossil fuels to reach the temperatures they need. Advanced nuclear technologies are also well suited to provide low-carbon, reliable, flexible, and scalable energy to data centres, and power synthetic fuel and hydrogen production.
  - **iii.** Nuclear is also vital for UK's energy security, providing reliable, domestically produced energy that protects consumers from price fluctuations in international energy markets.
- e. We welcome Government's recognition that new nuclear will create highly skilled jobs and encourage Government to continue to highlight the economic benefits of nuclear. <sup>8</sup>
  - i. Nuclear jobs are highly unionised and well-paid, with the average nuclear worker paid about twice the national average. <sup>9</sup>
  - **ii.** Many of the jobs within the nuclear sector are in rural or deprived areas where there are few high-paying alternative job opportunities.
    - In 2021, 46% of employment in the civil nuclear industry was in local authority districts deemed by government as in highest need of investment.<sup>10</sup>
    - **2.** By providing jobs in left behind regions, the nuclear industry significantly contributes to reducing regional disparities.

## 2. Is there a clear understanding of the costs of the energy transition to householders and businesses?

https://www.gov.uk/government/news/government-rips-up-rules-to-fire-up-nuclearpower#:~:text=Reforms%20to%20planning%20rules%20will,affordable%20energy%20for%20working%2 Opeople.

<sup>&</sup>lt;sup>7</sup> National Energy System Operator (2024) *Future Energy Scenarios: ESO Pathways to Net Zero*. Available at <u>https://www.neso.energy/document/321041/download</u>

<sup>&</sup>lt;sup>8</sup> Department for Energy Security and Net Zero (2025) *Government rips up rules to fire-up nuclear power*. Available at

<sup>&</sup>lt;sup>9</sup> Nuclear Industry Association (2023) *Delivering Value: The Economic Impact of the Civil Nuclear Industry*. Available at <a href="https://www.niauk.org/wp-content/uploads/2023/01/Delivering-Value\_Economic-Impact-Civil-Nuclear.pdf">https://www.niauk.org/wp-content/uploads/2023/01/Delivering-Value\_Economic-Impact-Civil-Nuclear.pdf</a>

<sup>&</sup>lt;sup>10</sup> Nuclear Industry Association (2023) *Delivering Value: The Economic Impact of the Civil Nuclear Industry*. Available at <a href="https://www.niauk.org/wp-content/uploads/2023/01/Delivering-Value\_Economic-Impact-Civil-Nuclear.pdf">https://www.niauk.org/wp-content/uploads/2023/01/Delivering-Value\_Economic-Impact-Civil-Nuclear.pdf</a>

- **a.** To put the costs versus benefits of achieving Net Zero by 2050 into perspective, we urge Government to emphasise that "the costs of failing to get climate change under control would be much larger than those of bringing emissions down to net zero".<sup>11</sup>
- **b.** We welcome Government's public acknowledgement that new nuclear will provide secure and more affordable energy for working people. <sup>12</sup>
  - i. Since the start of the Russia-Ukraine war in 2022, households and businesses in the UK have experienced the impact of external shocks on energy prices.
  - ii. Due to reliance on gas, the UK has been vulnerable to price fluctuations in international energy markets. In August 2022, power prices reached a monthly average of £370/MWh, a 246% increase compared to August 2021.<sup>13</sup> It is imperative that we do not understate the costs of imports at times of scarcity.
- c. Moving away from reliance on gas and deploying clean energy technologies like nuclear that provide reliable, domestically produced energy, is vital for protecting households and businesses against price shocks.
- d. Nuclear also reduces grid balancing costs because of its stable and predictable day-to-day output, in contrast to using gas to balance variable generation. In 2024, balancing the grid cost billpayers £2.53 billion, which is equivalent to every electricity consumer in Britain, including households and businesses, paying extra £40 per year.<sup>14 15</sup>
- e. We encourage Government to continue to emphasise these benefits of the energy transition and nuclear deployment to the public to foster support for government decision-making in the leadup to Net Zero by 2050.

### 3. Is there a need for public campaigns to counter the anti net zero narrative?

**a.** We encourage Government to clarify to the public the connection between net zero and tackling climate change.

<sup>&</sup>lt;sup>11</sup> Office for Budget Responsibility (2021) *Fiscal Risks Report*. Available at <u>https://obr.uk/docs/dlm\_uploads/Fiscal\_risks\_report\_July\_2021.pdf</u>

<sup>&</sup>lt;sup>12</sup> Department for Energy Security and Net Zero (2025) *Government rips up rules to fire-up nuclear power*. Available at

https://www.gov.uk/government/news/government-rips-up-rules-to-fire-up-nuclear-

power#:~:text=Reforms%20to%20planning%20rules%20will,affordable%20energy%20for%20working%20people.

<sup>&</sup>lt;sup>13</sup> Nuclear Industry Association (2022) *Power Prices Peak Amid Energy Market Chaos*. Available at <u>https://www.niauk.org/power-prices-peak-amid-energy-market-chaos/</u>

<sup>&</sup>lt;sup>14</sup>Office for National Statistics (2024) *Population estimates for the UK, England, Wales, Scotland and Northern Ireland: mid-2023.* Available at

https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/ bulletins/annualmidyearpopulationestimates/mid2023

<sup>&</sup>lt;sup>15</sup> National Energy System Operator (2024) Monthly Balancing Services Data <u>https://www.neso.energy/search-content?search=monthly+balancing</u>

- Research shows that the concept of net zero is "readily detached from the broadly supported focus on climate change action amongst the UK population". <sup>16</sup>
- **ii.** Without a clearly defined and explained net zero strategy, the broad net zero objective leaves space for people to construct alternative narratives based on counter-expertise.
- **b.** Arguments against net zero often reflect concerns about the cost of living crisis.<sup>17</sup>
  - i. We encourage Government to clarify to the public the reason for high electricity prices right now, so higher bills do not become associated with the net zero transition.
- **c.** To foster public support, we encourage Government to develop a public campaign, explaining why deploying clean energy technologies like nuclear as a part of the net zero transition and for domestic energy security, will reduce their bills while tackling climate change.
- 4. How should the Government be more positively engaging the public with this goal?
  - **a.** While Net Zero by 2050 is primarily framed as an environmentally beneficial objective, we encourage Government to emphasise that pursuing net zero also benefits the public economically.
    - i. Data from the Office for National Statistics from February 2025 shows that 57% of the public perceive climate change and the environment to be an important issue facing the UK today, while 71% reported it to be the economy, displaying that economic concerns outweigh environmental ones in the UK.<sup>18</sup>
    - **ii.** To engage with the public more positively on the goal of Net Zero by 2050, we encourage Government to emphasise how the energy transition rebuilds regional economies and tackles deep inequalities across the country.
  - **b.** A recent report by the Confederation of British Industry (CBI) found that "the net zero economy has become a significant driver of growth and innovation in the UK", generating £83.1 billion in Gross Value Added (GVA), with £28.8 billion

<sup>&</sup>lt;sup>16</sup> Matthew Paterson, Stanley Wilshire & Paul Tobin (2023) *The Rise of Anti-Net Zero Populism in the UK: Comparing Rhetorical Strategies for Climate Policy Dismantling*. Available at

https://www.tandfonline.com/doi/full/10.1080/13876988.2023.2242799#d1e412

<sup>&</sup>lt;sup>17</sup> Matthew Paterson, Stanley Wilshire & Paul Tobin (2023) *The Rise of Anti-Net Zero Populism in the UK: Comparing Rhetorical Strategies for Climate Policy Dismantling.* Available at

https://www.tandfonline.com/doi/full/10.1080/13876988.2023.2242799#d1e412

<sup>&</sup>lt;sup>18</sup>Office for National Statistics (2025) *Public opinions and social trends, Great Britain: January* 2025. *Available at* 

https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/bulletins/publicopinionsandsocialtr endsgreatbritain/january2025

directly from net zero businesses and £54.3 billion from supply chain activities and broader economic contributions.<sup>19</sup>

- i. The report expects nuclear power stations, including Hinkley Point C and Sizewell C to drive net zero initiatives across the UK.<sup>20</sup>
- **c.** To engage with the public more positively on the topic of nuclear deployment, we encourage Government to emphasise that nuclear projects are ideally suited to boost economic growth in rural and deprived areas while tackling climate change.
  - i. Nuclear is the most jobs-rich form of low-carbon energy, with Hinkley Point C and Sizewell C each projected to sustain more than 70,000 well-paying, green jobs. <sup>21</sup> Further deployment of new nuclear could significantly improve the rural-urban wage gap across the country.
- **d.** We encourage Government to continue to emphasise to the public that the energy transition improves the UK's energy security and protects households and businesses from price shocks.
  - i. As of February 2025, 86% of the public reported the cost of living to be an important issue facing the UK today.<sup>22</sup>
  - **ii.** Emphasising that new nuclear keeps energy bills from being affected by price fluctuations in international markets while limiting grid balancing costs, can generate support for the energy transition and nuclear deployment.

#### **Further Information**

The NIA is happy to provide more context, or any clarifications desired on the content of our response and to ask our members where appropriate for additional information that may be useful.

Please contact Elisabeth Roden, Policy Analyst for the Nuclear Industry Association, at elisabeth.roden@niauk.org to do this.

<sup>&</sup>lt;sup>19</sup> Confederation of British Industry (2025) *The Future is Green: The Economic Opportunities Brought by the UK's Net Zero Economy*. Available at <u>https://www.cbi.org.uk/media/owxdidg1/cbi-economics-eciu-the-future-is-green-report-2025.pdf</u>

<sup>&</sup>lt;sup>20</sup> Confederation of British Industry (2025) *The Future is Green: The Economic Opportunities Brought by the UK's Net Zero Economy*. Available at <u>https://www.cbi.org.uk/media/owxdidg1/cbi-economics-eciu-the-future-is-green-report-2025.pdf</u>

<sup>&</sup>lt;sup>21</sup> Sizewell C (2025) *MP update shows Sizewell C "the best prepared nuclear project in modern nuclear history"*. Available at

https://www.sizewellc.com/news-views/mp-update-shows-sizewell-c-the-best-prepared-nuclear-project-in-modern-nuclear-history/

<sup>&</sup>lt;sup>22</sup>Office for National Statistics (2025) *Public opinions and social trends, Great Britain: January* 2025. Available at

https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/bulletins/publicopinionsandsocialtr endsgreatbritain/january2025