

Nuclear Industry Association Response to the Scottish Government's Draft Climate Change Plan Consultation.

The Nuclear Industry Association welcomes the opportunity to respond to the Scottish Government's draft Climate Change Plan consultation.

The NIA is the trade association and representative body for the civil nuclear industry in the UK. We represent more than 320 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. Members also include nuclear equipment suppliers, engineering and construction firms, nuclear research organisations, and legal, financial and consultancy companies.

Executive summary

The Scottish Government's calculated omission of nuclear power, which has saved more carbon emissions than any other power source in Scottish history, from its climate change plan is a serious error of judgement and jarring insult to the contribution of Scottish nuclear workers to their country. This omission deliberately ignores the established scientific consensus that nuclear working alongside renewables is required to meet net zero. It also ignores the plain evidence from around the world that a functioning, affordable net zero system cannot be achieved by phasing out nuclear power. The plan should be withdrawn and redrafted to reflect the reality of operating a sustainable electricity system and the contribution of the Scottish nuclear workforce.

Torness and Hunterston nuclear power stations are the most productive clean energy assets in Scottish history. Since coming online in 1988, Torness has generated 307 TWh of clean electricity, helping to avoid at least 101 million tonnes of CO₂ emissions.¹ They have produced enough power for every home in Scotland for 60 years. Torness itself remains the largest, cleanest, and most reliable single generator in all of Scotland.

In 2024, Torness nuclear power station accounted for 17% of Scotland's electricity generation, and it had the highest load factor in Scotland at 75%.²

Moreover, nuclear has the lowest impact on the environment of any electricity source. The United Nations has found that it has the lowest lifecycle carbon intensity, lowest impact on ecosystem, and lowest land use of any electricity source. Torness bears this out. The station is the nation's best generator and takes up just one-tenth of a square mile. According to A. Shepherd et al., compared to nuclear, it takes 354 times more land to produce the same amount of energy from onshore wind in Scotland.³

¹ Nuclear Industry Association (2025) *Torness nuclear station confirmed as Scotland's best power generator*. Available at: <https://www.niauk.org/torness-nuclear-station-confirmed-as-scotlands-best-power-generator/>

² DESNZ (2025) *Electricity generation and supply in Scotland, Wales, Northern Ireland, and England, 2020 to 2024*. Available at: https://assets.publishing.service.gov.uk/media/69403bb4adb5707d9f33d7d0/Electricity_generation_and_supply_in_Scotland_Wales_Northern_Ireland_England_2020_to_2024.pdf

³ A. Shepherd et al. (2021) *Scotland's onshore wind energy generation, impact on natural capital & satisfying no-nuclear energy policy*. Available at:

Alongside the environmental benefits, nuclear continues to provide high-quality, well-paying jobs to Scottish communities that need them the most, with 36.4% of direct employment in the civil nuclear sector occurring in the most deprived 25% of Scottish local authorities. Scotland also needs more baseload power — with increasing reliance on variable generation from renewables, constraints payments soared to £1.21 billion in 2025, putting a strain on domestic and industrial consumers. We therefore strongly encourage the Scottish Government to enable the deployment of new nuclear in Scotland, to ensure that decarbonisation objectives can be met with strong economic growth and energy security for Scottish communities.

Section 1: Delivering a Just Transition

1. What are your views on our approach to delivering a just transition for people and communities?

- a. Considering the just transition principles outlined in Annex 1A of the Draft Climate Plan, we strongly encourage enabling the deployment of new nuclear, to deliver a just energy transition for the people and communities of Scotland.
 - i. Nuclear power plants can operate for up to 80 years, meaning that nuclear creates environmentally and socially sustainable jobs, providing long term, reliable employment.
 - ii. A report by the Confederation of British Industry expects nuclear power stations to drive net zero initiatives across the UK, and the activities of the civil nuclear sector workers generated £8.0 billion GVA contribution to GDP during 2024.⁴
 - iii. Nuclear jobs are highly unionised.
 - iv. Nuclear provides high-skilled, well-paying jobs — “the civil nuclear sector’s salaries far exceed UK averages, with a median salary 1.3 times as high as the equivalent figure for the UK economy as a whole.”⁵
 - v. Nuclear brings investment and jobs into local authorities that really need them, addressing regional inequalities.
- b. Scottish nuclear communities also want new nuclear to be built there.
 - i. In late August 2025, East Lothian Council voted to ask the UK government to fund “a full and independent site characterisation survey at Torness. Such a survey should examine geological, environmental, infrastructure, and community considerations, enabling an informed judgement on the site’s suitability for new nuclear development.”
 - a) In 1978, the South of Scotland Electricity Board (SSEB) got permission for 5.3 GW of nuclear at Torness, with only 1.3 GW ever built.
 - ii. Hunterston could also be a prime candidate for SMR deployment, and Dounreay and Chapelcross should be given consideration for the emerging range of advanced nuclear technologies.

https://www.sciencedirect.com/science/article/pii/S2352484721010805?ref=pdf_download&fr=RR-2&rr=9c417db48ff2ed06

⁴ Confederation of British Industry (2025) *The Future is Green: The Economic Opportunities Brought by the UK’s Net Zero Economy*. Available at <https://www.cbi.org.uk/media/owxdidg1/cbi-economics-eciu-the-future-is-green-report-2025.pdf>

⁵ Oxford Economics (2025) *The Economic Impact of the Civil Nuclear Industry*. Available at: <https://www.niauk.org/wp-content/uploads/2025/06/2025-Economic-Impact-of-the-Civil-Nuclear-Industry.pdf>

- iii. To ensure sustainable, well-paying jobs, alongside clean energy for Scottish communities, we strongly encourage the Government to enable the deployment of new nuclear at the suitable sites.

Section 2: Sectoral contributions, Policies and Proposals

11. What are your views on Scotland generating more electricity from renewable sources?

- a. While renewables should play a key role in the energy transition, it is vital that enough nuclear capacity is also deployed alongside renewables, to end Scotland's contribution to global emissions by 2045 with energy security and strong economic growth.
- b. From a technology perspective, nuclear is our only source of electricity that is clean, reliable, and local.
 - I. Nuclear provides 24/7 domestic power – always available, reliable and efficient, providing power for minimum grid demand. This cannot be provided by renewables, which are intermittent due to their dependence on natural conditions.
 - II. Nuclear has the lowest lifecycle carbon use of any electricity technology and it is the most land-efficient source of electricity.⁶ Per unit of energy, it requires 30-34x less land than solar, 27x less land than coal and well over 100x less land than wind.⁷
 - III. Some new-generation nuclear power stations are certified for 80 years of operation – providing clean, land efficient energy for generations. Meanwhile, onshore and offshore wind farms are only operational for 20-40 years, and a solar farm for up to 25 years.⁸
 - IV. Torness and Hunterston have produced enough clean electricity to power every home in Scotland for more than 60 years, avoiding hundreds of millions of tonnes of carbon emissions.^{9 10}
- c. Nuclear also provides skilled, stable, well-paying, organised work for communities that need them.
 - I. There are currently 5,413 nuclear jobs in Scotland, spanning Dounreay, Hunterston A & B, Torness and Chapelcross.
 - a) Torness employs 700 people on site with nearly 2,000 further jobs supported through the supply chain.¹¹

⁶ 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

⁷ H. Ritchie (2022) Energy: Which electricity source uses the most land? Available at: <https://www.weforum.org/stories/2022/06/energy-electricity-sources-land/>

⁸ Climate Council (2025) What happens to renewables when they reach retirement age? Available at: <https://www.climatecouncil.org.au/resources/what-happens-to-renewables-when-they-reach-retirement-age/#:~:text=What%20is%20the%20lifespan%20of,will%20depend%20on%20many%20factors.>

⁹ Nuclear Industry Association (2025) *Torness nuclear station confirmed as Scotland's best power generator*. Available at: <https://www.niauk.org/torness-nuclear-station-confirmed-as-scotlands-best-power-generator/>

¹⁰ EDF (2022) *Zero-carbon electricity generation ends at Hunterston B*. Available at: [Zero-carbon electricity generation ends at Hunterston B | EDF](https://www.edf.com/en/zero-carbon-electricity-generation-ends-at-hunterston-b)

¹¹ Nuclear Industry Association (2025) *Jobs Map*. Available at: https://www.niauk.org/wp-content/uploads/2025/09/NIA-Jobs-Map_2025.pdf

- II. Employees in the civil nuclear sector are highly productive, with each worker having contributed an average of £91,882 in GVA to the economy in 2024.
- III. Further deployment of new nuclear could significantly improve the rural-urban wage gap across the country. In England, almost 28.6% of direct employment in the civil nuclear sector occurs in the most deprived 25% of local authorities; the figure for Scotland is higher, at 36.4%. ¹²
- d. There is no credible, clean alternative to nuclear that provides baseload power and supports grid stability. More reliable, baseload power from nuclear is vital to limit the increasing electricity system costs for consumers, which are the highest in Scotland of anywhere in the United Kingdom, and which have increased dramatically in recent years.
 - I. Due to increasing reliance on variable power and shrinking baseload power, constraints payments in Scotland reached over £1.2 billion in 2025, making up the majority of balancing costs for the UK. For comparison, in 2018, before the retirement of Hunterston B, Scotland constraints were only £45 million.
 - II. NESO has identified that balancing costs will continue to increase and are forecast to peak between £4-£8 billion in 2030. ¹³
 - III. Since there is already significant grid infrastructure connecting the UK's existing nuclear sites to major demand centres, new nuclear at these sites would require less system investment than other comparable generation sources.
 - IV. Nuclear sites also provide valuable synchronous generation, with spinning steam turbines providing valuable inertia as a free service to stabilise the grid.
 - V. After Torness retires (currently scheduled for 2030), Scotland will have only one thermal power station providing inertia to the grid, Peterhead in Aberdeenshire. However, Peterhead is also ageing and is considerably less reliable than Torness has been, with many more unplanned outages. Since Scotland will have such a large amount of asynchronous variable generation, serious thought must be given to ensuring grid stability.

12. What support do industries need to reduce their carbon emissions while remaining competitive?

- a. Enabling the deployment of advanced nuclear technologies in Scotland will enable industries to reduce their carbon emission while remaining competitive. It will also create additional high skilled, well-paying jobs near industrial clusters and bring investment into these regions.
 - i. Advanced Modular Reactors (AMRs) with high outlet temperatures are ideal for decarbonising industries — such as hydrogen, steel, cement, and synthetic fuel production — that are currently reliant on fossil fuels to reach the temperatures they need.
 - ii. SMRs and AMRs are also the most well suited technologies to provide clean electricity to data centres and other industries that require stable, reliable electricity.

¹² Oxford Economics (2025) *The Economic Impact of the Civil Nuclear Industry*. Available at: <https://www.niauk.org/wp-content/uploads/2025/06/2025-Economic-Impact-of-the-Civil-Nuclear-Industry.pdf>

¹³ NESO (2025) *2025 Annual Balancing Costs Report*. Available at: <https://www.neso.energy/document/362561/download>

Section 3: Impact Assessments

17.How do you think the Climate Change Plan aligns with existing local, regional, or national priorities that you are aware of or involved in?

- a.** The exclusion of nuclear from the Draft Climate Change Plan's energy transition strategy contradicts the Scottish Government's ambition to end Scotland's contribution to global emissions by 2045 while creating significant economic opportunities. It also contradicts the UK Government's ambitions for decarbonisation, economic growth, and energy security.
- b.** To ensure alignment between the Climate Change Plan, national priorities, and the interests of Scottish nuclear communities, we strongly encourage new nuclear to be included in Scotland's energy transition strategy.

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.rodén@niauk.org to do this.