

Nuclear Industry Association Response to the Department for Energy Security and Net Zero's National Policy Statement for Nuclear Energy Generation (EN-7) Consultation

The Nuclear Industry Association (NIA) welcomes the opportunity to respond to Department for Energy Security and Net Zero's 'National Policy Statement for Nuclear Energy Generation (EN-7)' consultation.

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. Members also include nuclear equipment suppliers, engineering and construction firms, nuclear research organisations, and legal, financial and consultancy companies.

Due to the diversity of our membership, our views in this submission will cover high-level, industrywide matters. Our members may choose to make their own detailed submissions.

Executive summary

We strongly welcome the inclusion of Small Modular Reactors and Advanced Modular Reactors in the National Policy Statement for Nuclear Energy Generation, the implementation of a criteria-based approach to siting, and the removal of deployment deadlines from the planning framework for new nuclear. We encourage Government to further review the siting criteria of EN-7 to ensure that the opportunities associated with advanced nuclear technologies (ANTs) can be accommodated and leveraged to support the net zero energy transition.

Question 1: To what extent do you agree with the modification of this approach in light of the consultation feedback: To retain the < 50 MW (electric) threshold in the existing planning framework and to review our position in the future? Please indicate the extent to which you agree or disagree with the question.

- a) No comment

Question 2: To what extent do you believe the draft National Policy Statement is adequately future proofed to accommodate advancements in nuclear technologies?

- a) **Disagree.** Whilst we welcomed the inclusion of Small Modular Reactors and Advanced Modular Reactors in the National Policy Statement, the siting criteria detailed in EN-7 must be adjusted to accommodate and leverage advancements in nuclear technologies (see response to Question 3 for further details).

Question 3: Are there specific planning or siting considerations that should be addressed to ensure the National Policy Statement remains flexible to deployment of nuclear in diverse locations?

- b) **Yes.** Whilst we welcomed the removal of designated sites for new nuclear technologies, the siting criteria detailed in EN-7 must be adjusted to support the deployment of ANTs.
- c) We urge Government to adjust the siting criteria in EN-7 to take into account the different characteristics, risks and consequences of different technologies at different sites to ensure that the opportunities associated with ANTs can be leveraged.

Question 4: To what extent do you agree with the proposal to remove the distinction between previously exclusionary and discretionary criteria (see paragraph 1.1.7 (v) for more information)? Please indicate the extent to which you agree or disagree with the question.

- a) We **strongly agree** with the proposal to remove the distinction between previously exclusionary and discretionary criteria.
- b) We encourage Government to further review the proposal in paragraph 3.6.3 which suggests that Population Density and Proximity to Military Activities criteria compliance will continue to be mandatory and therefore 'Exclusionary'.
 - I. We encourage Government to acknowledge that it may be advantageous to have ANTs situated close to military activities if there is a requirement for power generation, particularly if military vehicles move to using synthetic fuels in the future.
 - II. Additionally, close proximity of advanced reactors to industrial clusters and data centres nearby population centres may be advantageous and should not be excluded due to Population Density criteria (see response to Questions 5 and 6 for further details).

Question 5: The government currently plans to retain the Semi-Urban Population Density Criterion in EN-7. Please indicate the extent to which you agree or disagree with the inclusion.

- a) We **strongly disagree** with retaining the Semi-Urban Population Density Criterion in EN-7, as the criteria is at odds with the opportunities that advanced nuclear technologies provide.
- b) ANTs offer great potential to provide clean heat, power and hydrogen to industrial clusters, which are nearer to population centres and thus might not meet these criteria.
 - I. Nuclear is the only source of clean heat proven at scale, and clean heat from advanced, high-temperature reactors is key for decarbonising industries reliant on fossil fuels to reach the temperatures they need.
 - 1) Existing studies suggest that advanced reactors used for heat provision would typically need to be located within 60-150 meters from the heat consuming industry to balance safety and efficiency with minimal heat

loss, which may not be permitted under the current Semi-Urban Population Density Criterion.^{1 2}

- c) Foreclosing the use of ANTs at industrial clusters would inhibit the UK's progress towards net zero, and would not be proportionate to the very low and rigorously regulated risk profile of these technologies.

Question 6: We are open to revising the Semi-Urban Population Density Criterion in the future. How should this criterion change in the future to better support the deployment of advanced nuclear technologies, and what evidence supports your suggestion? Please reference your sources. (max 500 words).

- a) We urge Government to follow the approach of Finland and the United States in adopting a technology-inclusive and risk-informed criteria to assess population related issues for the siting and deployment of ANTs.
- I. The Finnish nuclear regulator, STUK, requires those applying for a licence for a nuclear power plant to indicate to the authorities what kind of protection zones would be needed to guarantee safety, rather than using zonal requirements independent of technology.³
 - II. The US Nuclear Regulatory Commission considers safety, environmental, economic, and other factors in determining the acceptability of a potential nuclear site that is located away from a very densely populated centre but not in an area of low density.⁴
 - III. The US Nuclear Regulatory Commission has also accepted NuScale's risk-informed methodology for determining Emergency Planning Zone (EPZ) sizing for SMRs, which allows EPZ to be limited to the site boundary of the power plant. This enables SMRs to be located nearer to users of the plant's output, such as off-takers of process heat.⁵

¹Nuclear Energy Agency (2024) *High-temperature Gas-cooled Reactors and Industrial Heat Applications*. Available at

https://www.oecd-nea.org/jcms/pl_70442/high-temperature-gas-cooled-reactors-and-industrial-heat-applications?details=true

² Idaho National Laboratory (2005) *Thermal-Hydraulic Analyses of Heat Transfer Fluid Requirements and Characteristics for Coupling a Hydrogen Product Plant to a High-Temperature Nuclear Reactor*. Available at <https://inldigitallibrary.inl.gov/sites/sti/sti/3012383.pdf>

³ Radiation and Nuclear Safety Authority (2024) *According to STUK's new regulation, nuclear power plant's precautionary action zone and emergency planning zone are defined on a case-by-case basis*. Available at <https://stuk.fi/en/-/according-to-stuk-s-new-regulation-nuclear-power-plant-s-precautionary-action-zone-and-emergency-planning-zone-are-defined-on-a-case-by-case-basis>

⁴ U.S. Nuclear Regulatory Commission (2023) *General Site Suitability Criteria for Nuclear Power Stations*. Available at <https://www.nrc.gov/docs/ML2312/ML23123A090.pdf>

⁵ World Nuclear News (2022) *US regulator approves methodology for SMR emergency planning*. Available at

<https://www.world-nuclear-news.org/Articles/US-regulator-approves-methodology-for-SMR-emergenc>

Question 7: If it's not already addressed elsewhere (for example in EN-1 and the Planning Inspectorate Nationally Significant Infrastructure Project Guidance), are there any specific areas of the draft EN-7 where further clarity or guidance is needed to help ensure successful implementation by developers, planners, and regulators?

a) No comment

Question 8: Would additional support or information from the government be beneficial and assist developers intending to apply for Development Consent in implementing EN-7 and proceeding through the Development Consent Order pre-application process?

a) No comment

Question 9: If you wish to be kept informed of the development of the supplementary information to the National Policy Statement please share your contact details (email address preferable) in the text box provided (max 150 words) so that we can seek your views.

a) For views on supplementary information to the National Policy Statement, please contact Elisabeth Roden, Policy Analyst for the Nuclear Industry Association, at elisabeth.roden@niauk.org.

Question 10: Please identify the single main sector or interest you represent in relation to the siting of new nuclear power stations.

a) Organisation responsible for/interested in new nuclear development.

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.