



Briefing Paper

UK Advanced Boiling Water Reactor (UK ABWR) Justification Debate

WHAT IS JUSTIFICATION?

Justification is a legal requirement under EU and UK law and the first in the series of regulatory decisions needed before a nuclear power station can be built. A **high-level assessment** is undertaken by the Secretary of State for Energy and Climate Change to establish whether the economic, social or other benefits of a new nuclear station outweigh the radiological health detriments.

SECRETARY OF STATE'S DECISION

In **December 2014**, Ed Davey, Secretary of State for Energy and Climate Change announced the UK ABWR reactor design was justified. The Secretary of State sees 'a **clear need for the generation of electricity by the UK ABWR** through the contribution it can make to securing the UK's energy supplies, helping the UK decarbonise and meet low carbon obligations and benefiting the economy.'

Although there is potential detriment to health, safety and the environment from the UK ABWR, this potential is **small, well understood and guarded against by the extensive regulatory regime**. He was therefore satisfied that the benefits of building and operating the UK ABWR in the UK clearly outweigh the detriments.

The proposed decision relates to the second Justification application submitted by the NIA. Our first application was made in 2009 and concerned the AP1000 and the EPR designs. The then Secretary of State decided they were justified on 18 October 2010 and this decision was subsequently endorsed by a vote in the House of Commons.

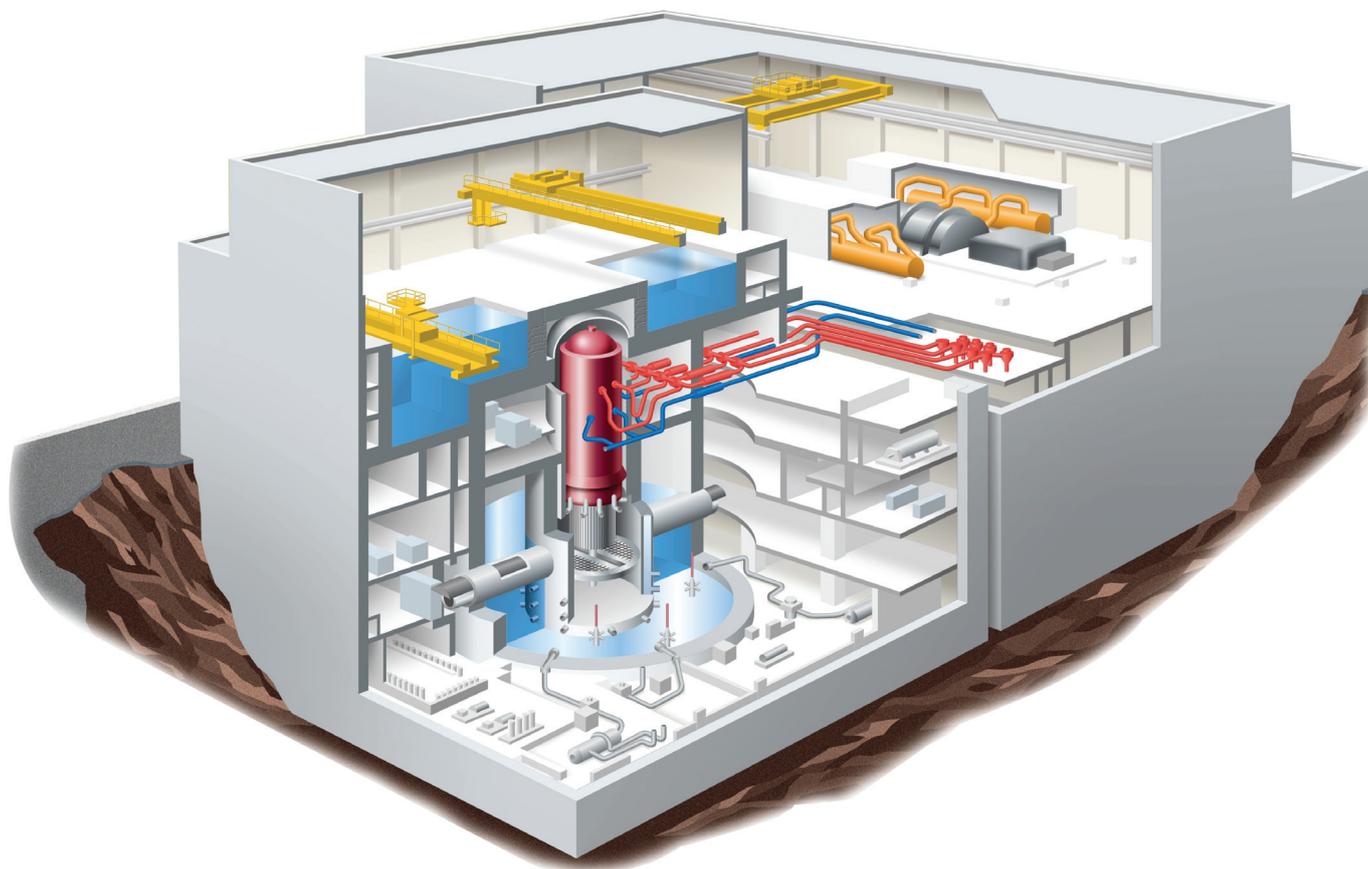
KEY POINTS

The security of supply and low carbon benefits of the UK ABWR are very significant. By comparison the risks of health detriment are very small, well managed and understood, and far outweighed by the net benefit.

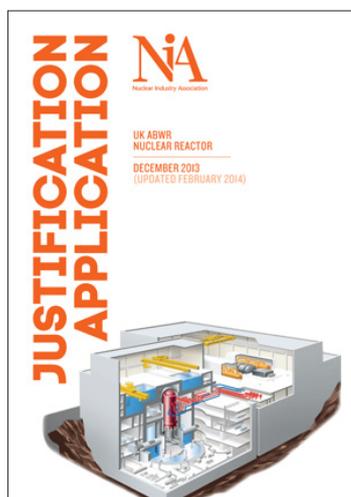
- ▶ **Climate Change:** Climate change poses a major threat to the world and to the UK, and the **UK ABWR can make a major contribution to meeting the UK's carbon reduction targets** by producing large volumes of low carbon electricity.
- ▶ **Reliability:** Internationally, Boiling Water Reactors (BWRs) have a **strong reliability record** and a UK ABWR plant will be able to **provide large scale electricity generation**, helping to achieve the diverse generation mix sought by the Government and increasing the resilience of the UK's electricity system. It will also, because of its low fuel costs relative to overall operating costs, **contribute to stable electricity prices**.
- ▶ **Safety:** The ABWR has an excellent safety record internationally and compliance with the regulatory regime will ensure that any UK ABWR will have a **very limited health impact** on both workers and members of the public, and that the **specified dose limits and constraints will be achievable**. There is an effective regulatory regime in place to ensure that operators maintain **high levels of safety**.
- ▶ **Radioactive Waste:** The types of waste and spent fuel created by new nuclear stations (including the UK ABWR) will be similar to those produced by existing stations, and for which **clear policies are in place for both their interim and long term management**. These include, inter alia, a legal requirement on potential operators to put funding agreements in place to **meet the full costs of waste and decommissioning**.
- ▶ **Environmental Impacts:** The wider environmental impacts associated with the development of new nuclear power stations, including the UK ABWR, **would not be significantly different to those of other forms of electricity generation**. These would be appropriately addressed and mitigated in line with all relevant legal and regulatory requirements, including the Planning Act 2008.

ABOUT THE UK ABWR

The UK ABWR is a modern Generation III+ boiling water reactor designed by Hitachi-GE Nuclear Energy, Ltd. Key features ensure that ABWRs are **highly functional** and offer **enhanced safety** during development and operation. The modular design makes ABWRs **simpler to construct and easier to operate**, while the efficient turbine technology offers **reliable electricity generation**.



The UK ABWR design is based upon Hitachi's proven ABWR design, four units have been commissioned in Japan and other units are under construction in both Japan and Taiwan. The ABWR is also licensed in the USA. The UK ABWR will therefore draw on considerable international experience. Horizon Nuclear Power plan to build and operate UK ABWR reactors at their Wylfa Newydd and Oldbury sites.



UK ABWR JUSTIFICATION APPLICATION

The NIA submitted the application for the Justification of the UK ABWR, with the support of Horizon Nuclear Power and Hitachi-GE Nuclear Energy, Ltd.

The NIA application provided a thorough and robust case that clearly demonstrates the security of supply and climate change benefits of new nuclear far outweigh any possible detriment.

Visit www.niauk.org/justification-application-uk-abwr to download a copy of the full application.

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