



# HOUSE OF LORDS

## **SELECT COMMITTEE ON SCIENCE AND TECHNOLOGY**

### **Call for Evidence**

#### **Nuclear Research and Development Capabilities**

**Deadline for submissions: Thursday 28 April 2011**

The Science and Technology Committee, under the Chairmanship of Lord Krebs, has launched a short inquiry to investigate whether the UK's nuclear research and development (R&D) capabilities are sufficient to meet its future nuclear energy requirements to 2050.

#### **Background**

The Government's finalised Energy National Policy Statements will be presented to Parliament for ratification in the spring and regulatory approval of nuclear reactor designs for new build plants is expected to be given later this year.

In recent months, a number of reports, including a report on nuclear fission by the Energy Research Partnership in September 2010, have highlighted the need for Government to look beyond current plans for nuclear new build and, looking ahead to 2050, to consider whether the UK satisfies the R&D requirements necessary to meet the country's demand for nuclear energy in the future.

A range of scenarios and roadmaps estimate that between 12 to 38 GW of nuclear capacity will be required if a secure, reliable and low carbon energy system is to be in place in the UK by 2050. Attempts have been made to assess the R&D capabilities that will be needed, now and in the future, to meet these future scenarios. Conclusions from this work indicate that, within the 2050 timeframe, deployment of a new generation of nuclear technology (Generation IV) is likely. If this is the case, a significant global R&D programme will be needed over the next few years to ensure successful delivery of Generation IV. Added to this, increasing demand for uranium,

coupled with concerns about nuclear proliferation, will require consideration of the development of technologies associated with recycling of fuel and reprocessing plutonium. Assessment of the adequacy of the UK's nuclear R&D capabilities will need also therefore to include our being able to ensure a safe and secure supply of fuel and, when the time comes, its safe and secure disposal.

In these circumstances, the Committee has decided that it is timely to consider what role the UK should be playing in the coming years to develop these future technologies and what domestic R&D capabilities are needed to contribute to, and benefit from, international research programmes in order to meet our future nuclear energy needs.

The Committee decided to undertake this inquiry before the recent events in Japan concerning the Fukushima Daiichi nuclear plant. Consideration of health and safety R&D capabilities is inherent within the scope of this inquiry. These events confirm the importance of ensuring that the UK has adequate R&D capabilities to meet current and potential future needs for nuclear energy safely and securely.

The Committee is aware that the UK's nuclear interests extend beyond the UK's borders to international non-proliferation and security policies. The Committee fully acknowledges the critical importance of these policy areas. However, for the purposes of this present inquiry, our intention is to focus principally on UK nuclear R&D and our ability to meet future nuclear energy requirements, touching on other related policy areas only where they have implications relevant to this inquiry topic.

## Questions

The Committee invites evidence on the following questions. Submissions are not required to cover all questions. **The deadline for written evidence submissions is Thursday 28 April 2011.**

### *The implications of future scenarios*

- What are the research and capability requirements of nuclear energy policy options, roadmaps and scenarios up to 2050?
- What consideration is the Government giving to the UK's R&D requirements to meet the policy objectives for nuclear energy both in the near term and longer term (to 2050)? Does more need to be done?
- What research capabilities and commitments are required now to meet these future nuclear energy policies?

### *The research base*

- Does the UK have adequate R&D capabilities, including infrastructure, to meet its current and future needs for a safe and secure supply of nuclear energy?
- Are there sufficient opportunities and avenues to conduct translational nuclear research in the UK to develop future technologies? Which bodies should be funding this work?

### *Competing in the global market*

- What are the research areas in which the UK is recognised internationally as having strengths?
- What are the costs and benefits to the UK of a more or less active R&D capability within the country?

### *Strategic oversight and co-ordination*

- Is there sufficient co-ordination between the bodies involved in nuclear research and, if not, how should it be improved? Who has oversight of the whole nuclear R&D landscape, including international activities?
- What role should the Government play in identifying gaps in research, providing oversight of the whole landscape and encouraging co-ordination between funders and deliverers? Are they fulfilling that role? Should more be done?

### *International and European research activities and comparisons*

- Should the UK be involved in international and European research activities on nuclear? If so, how and what are the benefits and costs of doing so?
- What can the UK learn from how other countries presently organise and deliver R&D provision for nuclear? To what extent are other countries increasing or decreasing their research capacity in order to deliver future nuclear policies?

### *Roles and responsibilities*

- Are the bodies involved in funding research and setting research agendas adequately fulfilling their roles and responsibilities? Should anything change?
- In particular:

1. what is the role of the Research Council's cross-council Energy Programme? Is it giving sufficient attention to the UK's current and future nuclear energy research requirements?
2. is the National Nuclear Laboratory fulfilling its R&D remit appropriately? Can it deliver the required research to support the UK's future nuclear energy policies? How does it compare to NNL's in other countries?
3. is the Nuclear Decommissioning Authority's R&D remit still appropriate, given the UK's current and potential future nuclear policies?

The Committee would also be interested to hear about any other issues not already covered by this call for evidence that are relevant to the scope of the inquiry.

The Committee will hold public meetings from May 2011 and the Committee's report will be published later in 2011.

### **Submission instructions**

Evidence should be submitted in an editable electronic form as a Microsoft Word document by email to: [hlscience@parliament.uk](mailto:hlscience@parliament.uk). Please do not submit PDFs. If you do not have access to Microsoft Word or to the internet you may submit a paper copy to: Christine Salmon Percival, Clerk to the Science and Technology Committee, House of Lords, London SW1A 0PW, Fax: 0207 219 4931. The deadline for written evidence is Thursday 28 April 2011.

**Please ensure that you include relevant contact details. Evidence should be attributed and dated, with a note of your name and position, and should state whether it is submitted on an individual or corporate basis.**

Short submissions are preferred. Longer submissions (more than 6 pages) should include a one-page summary. Hard copy should be clearly printed or typed on single sides of A4 paper, unstapled. Paragraphs should be numbered.

Evidence should be prepared specifically for this inquiry. Witnesses are encouraged to focus on those issues of which they have particular knowledge or experience—submissions are not required to cover all questions.

Evidence becomes the property of the Committee, and may be printed, published electronically or circulated by the Committee at any stage. Written evidence will normally be published online and deposited in the Parliamentary Archives.

Once you have received acknowledgement that the evidence has been received, you may publicise or publish your evidence yourself, but in doing so you should indicate that it was prepared for the Committee. Parliamentary privilege will not apply to your own publication. If a submission is substantially the same as work that has already been published or disseminated for some other purpose, or is deemed not to be relevant to the inquiry, it will not be treated as formal evidence.

Personal contact details supplied to the Committee will be removed from evidence before publication and from the copy deposited in the Archives. However, personal contact details will be retained by the Committee Office and used for specific purposes relating to the Committee's work, for instance to seek additional information or to send copies of the Committee's report.

The Committee will invite some of those who submit written evidence to give oral evidence at Westminster. Transcripts of such evidence will be published.

Substantive communications to the Committee about the inquiry should be addressed through the Clerk or the Chairman of the Committee, whether or not they are intended to constitute formal evidence to the Committee.

You can follow the progress of the inquiry via the Science and Technology Committee web pages, accessed from <http://www.parliament.uk/hlscience>.