

# *Nuclear Free Local Authorities* new nuclear monitor



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## ENERGY REVIEW CALLS FOR WIDE PUBLIC DEBATE

The Cabinet Office energy review calls on Government to initiate a national public debate about sustainable energy, including the role of nuclear power<sup>1</sup>.

The review - undertaken by the Performance and Innovation Unit (PIU) - recommends that a process of public engagement “must be set in train soon”, so that a first round of public consultation can inform the Government’s response, leading to a White Paper in October 2002.

The PIU highlights three facets of the debate:

- the potential role of nuclear energy;
- the future contribution of renewable resources; and
- the potential for consumers and communities to alter their energy choices.

For the PIU, “the immediate priorities of energy policy are likely to be most cost-effectively served by promoting energy efficiency and expanding the role of renewables”. It adds that “because nuclear is a mature technology within a well established global industry, there is no current case for further government support”. However, the PIU concludes that measures need to be taken to keep the nuclear option open.

This issue of *New Nuclear Monitor* outlines the PIU’s main findings, summarises its proposals for keeping the nuclear option open, and assesses the implications for public consultation. It also outlines issues associated with meeting the full costs of electricity generation, and with local planning.

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THE LOCAL GOVERNMENT VOICE ON NUCLEAR ISSUES



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## MAIN PIU FINDINGS ON ENERGY POLICY

The PIU points out that in future the UK will be increasingly dependent on imported oil and gas, and is likely to face increasingly demanding greenhouse gas reduction targets. It argues that these challenges will require new policies, which should address the objectives of sustainable development and energy security.

Against this background, the PIU proposes that the overall aim of energy policy should be:

*.. the pursuit of secure and competitively priced means of meeting our energy needs, subject to the achievement of an environmentally sustainable energy system.<sup>2</sup>*

In addition, key policy principles should be:

- to create and to keep open options to meet future challenges
- to avoid locking prematurely into options that may prove costly; and
- to maintain flexibility in the face of uncertainty.

The PIU adds that the introduction of liberalised and competitive energy markets has been a success, and should provide a cornerstone of future policy.

Within this context, the PIU argues that the UK's future energy strategy should include: attention to long-term investment incentives; support and encouragement for new sources of energy which are, or can be, low cost and low carbon; the use of economic instruments to bring home the cost of carbon emissions to all energy users; step changes in energy efficiency and vehicle efficiency; and the removal of institutional barriers to renewable and combined heat and power investments.

The PIU also proposes the creation of a new Sustainable Energy Policy Unit, "with cross-cutting analytical capability", to lead on the development of strategic policy issues.

## KEEPING THE NUCLEAR OPTION OPEN

The PIU case for keeping the nuclear option open is that it "offers a zero carbon source of electricity on a scale, which, for each plant, is larger than that of any other option".

The nuclear industry in the UK is itself currently exploring how this option might be kept open. British Energy is investigating the potential for construction of an Atomic Energy of Canada Limited CANDU reactor design and more recently announced joint exploratory research with BNFL for the construction of the BNFL owned Westinghouse AP1000 reactor design. Both developments will be analysed in the next edition of *New Nuclear Monitor*.

Although highlighting that a decision to bring forward proposals for new nuclear build is a matter for the private sector, the PIU points out that Government sets the framework within which commercial decisions are made, so it could "make it more likely that a private sector scheme would succeed".

Nonetheless, for the PIU, the desire for flexibility points to a preference for supporting a range of possibilities, "not a large and relatively inflexible programme of investment .. implied by the 10 GW programme currently proposed by the nuclear industry". In addition, the desire for new options "points to the need to develop new, low waste, modular designs

of nuclear reactors". As such, the PIU recommends that the UK should continue to participate in international research "aimed in this direction".

In terms of practical measures, the PIU proposes that:

- additional nuclear output should benefit from new methods for valuing carbon in the market;
- a shorter-lead time to reactor commissioning should be made possible;
- the regulators should be adequately staffed to assess any new investment proposals; and
- the nuclear skills base needs to be kept up-to-date.

The PIU points out, however, that "any move by Government to advance the use of nuclear power .. would need to carry widespread public acceptance". This would require public concerns to be addressed, where the main focus is on "the unsolved problem of long-term nuclear waste disposal, coupled with perceptions about the vulnerability of nuclear power plants to accidents and attack".

## **THE IMPORTANCE OF WIDER PARTICIPATION**

At the start of the PIU review, the first issue of *New Nuclear Monitor* argued that :

*It is essential that two things happen. First, the case for new nuclear build must be subject to critical scrutiny. The PIU should set the tone by taking a hard-headed look at the major hurdles to new build. Second, the process of review needs to be opened up to public participation at the earliest opportunity. This must be done to lay the foundations for the high level of public support required for any radical policy developments ..<sup>3</sup>*

The PIU report has started the process of subjecting the case for new nuclear power stations to critical scrutiny. In particular, it displays a healthy scepticism towards the industry's claims for the costs of new build<sup>4</sup>, and recognises public concerns about radioactive waste and reactor safety. The report also endorses the call for the review process to be opened up to wider participation. However, it offers few proposals for how this should be done.

This critical issue was addressed in the second issue of *New Nuclear Monitor*<sup>5</sup>, which proposed the setting up of a stakeholder panel to keep the case for new nuclear build under review, particularly by exploring public acceptability issues<sup>6</sup>. Such a panel should operate in an open and transparent way, and involve a wide range of stakeholders, thereby helping to engender public confidence.

If Government accepts the PIU proposal for a new Sustainable Energy Policy Unit, then that Unit could play a role in convening the stakeholder panel.

## EXPLORING PUBLIC CONCERNS ABOUT RADIOACTIVE WASTE

There is a considerable body of opinion that a 'solution' to the long-term management of radioactive waste needs to be found before new nuclear build is allowed to proceed<sup>7</sup>. However, it is not clear what the public would consider to be a 'solution'. The options range from the establishment of clear Government policy on long-term management, to securing planning consent to site a new facility for storage or disposal, construction of the facility, or emplacement of first wastes. The question of what is judged to constitute a 'solution' should be explored through public deliberation, for example, in discussion groups or citizens' panels.

Recent research on public attitudes to radioactive waste management throws up a further challenge: that the achievement of a 'solution' to long-term radioactive waste can be viewed as requiring no new nuclear build<sup>8</sup>. In other words, rather than a radioactive waste management 'solution' being a pre-requisite for new nuclear power stations, a decision to cap the production of wastes in the nuclear industry is seen by sections of the public as a pre-requisite for achieving a radwaste 'solution'. Here, then, is a further issue that must be addressed through public deliberation.

The proposed public participation events will need to be coordinated with, or take account of, similar initiatives organised as part of the review on long-term radioactive waste management policy, launched in September 2001 by the Government<sup>9</sup>. This latter review process is anticipated to take until 2007, culminating in the adoption of policy on long-term management and how it should be implemented.

The timeframe for policy-making on long-term radioactive waste management coincides with a PIU recommendation that the first periodic review of progress in implementing the key elements of a new energy policy also take place in 2007<sup>10</sup>.

This five year period provides an opportunity to properly address public concerns about the relationship between the future of nuclear power and radioactive waste management. Failure to do this will increase the likelihood that 'downstream' siting proposals for new reactors or waste management facilities will face concerted public opposition.

Against this background, it would clearly be inappropriate for industry to seek authorisation to build new nuclear power stations at specific sites within the next five years.

## EXPLORING PUBLIC CONCERNS ABOUT REACTOR SAFETY

Since the 1980s, there has been concern within parts of the nuclear industry that widespread public acceptance will not be forthcoming as long as assurances about safety have to rely on statistical estimates of the frequency of major accidents<sup>11</sup>.

This viewpoint has been forcefully put by Nicholls, who works for ESKOM, the developer of a new type of reactor, the Pebble Bed Modular Reactor (PBMR):

*The issue of accidents also must be seen to have been solved. The classic question is 'Can the nuclear plant have an accident which could affect the public?' The answer for the current generation of plants is 'Yes, but it is such a remote possibility that...' The only part of this answer that is heard is the first word; the rest is only limited mitigation! To be acceptable, the answer must be 'No'. There must be no physically credible event which can cause off-site actions to be required.*<sup>12</sup>

There is an emerging view within the nuclear industry that this should be a requirement for the next generation of nuclear reactors.

This analysis suggests a further major hurdle to a programme of new build: the industry should be able to present a convincing case that it is not possible for an event at a new reactor to cause a radiation release that could affect the public. This is likely to require the development of reactor designs that use fuel which could survive the total absence of coolant<sup>13</sup> and withstand potentially high impact external events<sup>14</sup>.

These requirements have been further underlined by the terrorist atrocities of 11 September 2001. It should be noted in this regard that the current generation of Pressurised Water Reactors could not withstand the impact of a commercial jet airliner<sup>15</sup>.

The PIU review draws attention to public perceptions about the vulnerability of nuclear power plants to accidents and attack, but provides no specific suggestions for how to move forward on the issue. In our view, public concerns about reactor safety, and the implications for reactor design requirements, should also be explored through public participation, for example, in discussion groups or citizens' panels.

## CARBON VALUATION AND CLIMATE CHANGE

One of the main measures proposed by the PIU for keeping the nuclear option open is to ensure that nuclear build benefits from new methods to provide incentives for abatement of carbon dioxide emissions. There are two major alternatives: carbon taxes and tradeable carbon emission permits. The term "carbon valuation" is used as a shorthand for these two methods.

The PIU explains that the UK has already made a start on carbon valuation through the Emissions Trading Scheme. This is a tradable permit scheme being taken forward by DEFRA for launch in 2002<sup>16</sup>. The coverage of the scheme, however, is effectively confined to larger business energy users and participation is entirely voluntary.

Although recommending that the Treasury and DEFRA give early consideration to expanding the use of carbon valuation, the PIU draws attention to the practical difficulties that would have to be overcome. There are also uncertainties about whether carbon

valuation would be sufficient to transform the commercial prospects for new nuclear power stations<sup>17</sup>.

## **NUCLEAR LIABILITY PRE-REQUISITES**

The PIU couples its view that new nuclear build should benefit from carbon valuation with the recommendation that:

*DTI should ensure, using independent evaluation, that the nuclear industry fully internalises its external costs, including risks such as waste cost escalation.*<sup>18</sup>

This is an important recommendation. As explained in the first issue of *New Nuclear Monitor*:

*The 'polluter pays' principle leads to further pre-requisites for new build. These are that all the liabilities associated with the life-cycle of a reactor, including long-term waste management, should be adequately costed, and arrangements put in place to ensure that the costs will be met by the company concerned. This is necessary to remove the risk that public subsidy will ultimately be required to meet long-term costs.*<sup>19</sup>

These pre-requisites pose a difficulty for new build: deriving robust and comprehensive liability estimates requires the establishment of clear policy on the long-term management of radioactive wastes, followed by the specification of technical requirements and the development of adequate cost models. As reported above, the adoption of clear policy in the UK is not expected until 2007.

## **PLANNING ISSUES**

The PIU states that a "persistent theme of the review has been the problems, either experienced or perceived, that energy projects have in gaining planning permission"<sup>20</sup>. It notes that Government is reviewing the operation of the planning system, and has recently issued various consultation papers, including on the treatment of major infrastructure projects.

Significant concerns have been raised by the Government's proposals for reform of the planning system, including over-centralisation of decision-making<sup>21</sup>. There is a Treasury led desire to speed up decisions and a danger is that this will be at the expense of authentic public participation. The PIU argues that a balance has to be struck between the national and local costs and benefits of a development. To help strike this balance, the PIU asserts that:

*Public participation is an integral part of the planning process. The attitude of local communities to proposals for new energy development is a material consideration and they must continue to have their say in the planning process.*<sup>22</sup>

The PIU also notes that energy developments are gradually receiving an increased profile in regional guidance and sub-regional plans. However, it calls for more rapid progress: "as we move towards more renewable and decentralised generation and a greater emphasis on demand-side technologies, energy developments should be given greater prominence within these documents".

The PIU suggests that this should be achieved by:

- regional planning bodies placing greater prominence on energy issues in regional planning guidance; and
- placing greater emphasis on pro-active planning for low carbon energy developments at a sub-regional level, including identifying areas that could be appropriate for specific types of energy development.

The PIU adds that if the Local Development Frameworks proposed in revisions to the planning system are implemented, “it will be important that energy developments are well represented within the frameworks”.

## **CONCLUSIONS**

The PIU call for a national public debate about sustainable energy, including the role of nuclear power, is to be welcomed.

In order to provide a focus for the nuclear component of this debate, the Government should set up a stakeholder review panel. This panel should oversee the organisation of public participation events, with the objective of exploring public views and concerns about nuclear power. A programme of events should consider:

- the relationship between the future of nuclear power and radioactive waste management;
- the vulnerability of nuclear power stations to accidents and attack.

The panel should ensure that the proposed events take account of any related initiatives which form part of the Government review of long-term radioactive waste management policy.

The findings of the public participation events should be used in the panel’s assessment of the implications of key public acceptability issues. This assessment should be available in time for the first periodic review of progress in implementing the key elements of energy policy, as proposed by the PIU for 2007.

The industry should not seek authorisation to build new nuclear power stations prior to the completion of this first periodic review of energy policy.

In the meantime, local authorities should assess how to accelerate the development of energy efficiency and renewable energy at the local level.

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- <sup>1</sup> Cabinet Office, 'The Energy Review', A Performance and Innovation Unit Report, February 2002 (<http://www.piu.gov.uk/2002/energy/report/3.html>).
- <sup>2</sup> Cabinet Office, as above, Executive Summary, p1.
- <sup>3</sup> NFLA, 'The Hurdles to Nuclear Revival', New Nuclear Monitor, Number 1, July 2001.
- <sup>4</sup> Cabinet Office, as above, Annex 6, paras 41-47, and PIU Energy Review Working Paper, 'The Economics of Nuclear Power', 2002.
- <sup>5</sup> NFLA, 'The Case for Stakeholder Review and Public Participation', New Nuclear Monitor, Number 2, September 2001.
- <sup>6</sup> New Nuclear Monitor 2 also recommended that the stakeholder panel investigate key technical and economic questions, and monitor international developments.
- <sup>7</sup> The body of opinion includes the Royal Commission on Environmental Pollution and the European Commission, as quoted in NFLA, as above, July 2001.
- <sup>8</sup> ISOLUS 'Front End Consultation' (<http://www.lancs.ac.uk/users/csec/isolus/isolusfinal.pdf>).
- <sup>9</sup> DEFRA et al, 'Managing Radioactive Waste Safely: Proposals for developing a policy for managing solid radioactive waste in the UK', September 2001 ([www.defra.gov.uk/environment/index.htm](http://www.defra.gov.uk/environment/index.htm)).
- <sup>10</sup> Cabinet Office, as above, para 10.10.
- <sup>11</sup> See, for example, I Spiewak and A M Weinberg, 'Inherently Safe Reactors', Annual Review of Energy, Vol 10, 1985, p431-62; and W Kröger, 'Non-catastrophic release requirements for the next generation of nuclear power plants', Nuclear Engineering and Design, Vol 109, 1988, p295-298.
- <sup>12</sup> D R Nicholls, 'Status of the Pebble Bed Modular Reactor', Nuclear Energy, Vol 39, No 4, August 2000, p231-236.
- <sup>13</sup> L M Lidsky, 'Nuclear Power: Levels of Safety', Radiation Research, Vol 113, 1988, p217-226. Eskom argue that the design of the PBMR will be such that the fuel could survive the total absence of coolant.
- <sup>14</sup> I Spiewak and A M Weinberg, 'Inherently Safe Reactors', Annual Review of Energy, Vol 10, 1985, p433.
- <sup>15</sup> M Barnes, 'The Hinkley Point Public Inquiries', Chapter 47, p1986-2001, 1990.
- <sup>16</sup> Cabinet Office, as above, para 3.78.
- <sup>17</sup> NFLAs, as above, July 2001.
- <sup>18</sup> Cabinet Office, as above, para 7.78.
- <sup>19</sup> NFLAs, as above, July 2001.
- <sup>20</sup> Cabinet Office, as above, para 8.38.
- <sup>21</sup> See forthcoming NFLA comments (<http://www.gn.apc.org/nfznscl/>).
- <sup>22</sup> Cabinet Office, as above, para 8.40.