

National Policy Statements for Energy Infrastructure

Response from:

- The Royal Academy of Engineering
- The Institution of Engineering and Technology
- The Institution of Civil Engineers
- The Institution of Mechanical Engineers
- The Institution of Chemical Engineers

To the Department of Energy and Climate Change

February 2010

The Royal Academy of Engineering, the Institution of Engineering and Technology, the Institution of Civil Engineers, the Institution of Mechanical Engineers and the Institution of Chemical Engineers are pleased to submit a joint response to the Department of Energy and Climate Change on the draft National Policy Statements for Energy Infrastructure.

The response was formulated through consultation with experts in the field from the organisations listed above. The Nuclear Institute also provided access to their own submission to the consultation from which we have drawn a significant proportion of our response to EN-6.



The Royal Academy
of Engineering

1. Do you think that the Government should formally approve ('designate') the draft Overarching Energy National Policy Statement?

If the UK is to meet the emissions reductions targets set out in the Climate Change Act while maintaining a secure and affordable energy supply, significant amounts of new energy infrastructure will need to be built in the coming decade and beyond. Clearly, if this is to be achieved in a timely and efficient manner, the planning regime will play a crucial role. The current system has been shown to have some major failings, resulting in lengthy delays for a number of applications for planning consent. The urgency of the issue means that this situation cannot be allowed to continue and we support the efforts being made by Government to overhaul the system following on from the Planning Act (2008).

Our organisations broadly support the approval of the draft Overarching Energy National Policy Statement (NPS). The NPSs are not the place to create new policies; however, we envisage a role for the IPC in helping shape and support national energy policy which will require more discretion, powers of coordination and mechanisms for tracking the impacts of planning decisions as they come online. There will need to be acceptance that issues may arise that have not been foreseen and that the IPC will have the authority to require further assessment and the power to decide on the significance of these in their overall determination of applications.

2. Does the draft Overarching Energy National Policy Statement provide the Infrastructure Planning Commission with the information it needs to reach a decision on whether or not to grant development consent?

The draft Overarching Energy NPS does, on the whole, provide an adequate framework for the Infrastructure Planning Commission (IPC) to base judgements on. Such a significant change to the planning regime will require careful monitoring, as will the operation of the IPC itself. It will therefore be necessary to continue to assess the performance of both the NPSs and the IPC to ensure that they are fit for purpose and up-to-date with the latest technological evidence and best practice. This is particularly important in such a rapidly developing field as energy.

In addition, even a successful planning framework will be ineffectual if the IPC and local planning authorities are not adequately resourced, both financially and in terms of sufficiently experienced personnel. In this respect, the Royal Academy of Engineering and its network of partner organisations across the engineering profession are well-placed to identify individuals with expertise in all areas of energy to provide advice where necessary. However, staff of the right calibre and skills will be needed across the whole planning system.

3. Does the draft Overarching Energy National Policy Statement provide suitable information to the Infrastructure Planning Commission on the Government's energy and climate policy?

The challenges ahead for UK energy policy require a coordinated national strategy and clear implementation plan if they are to be met. We support the basic premises of this policy as described in the draft Overarching Energy NPS, namely that the future energy system must:

- increase efficiency and reduce demand wherever possible;
- be made up from as diverse a range of primary fuels as possible; and
- increase the proportion of low-carbon energy.

This strategy must be implemented quickly and efficiently for a number of reasons, as laid out in the consultation document.

While it is vital to retain the democratic rights of people to have their views heard on any developments that will affect them, it is important that the general principles of the energy strategy are not repeatedly debated as part of each individual application, as this will result in continuing serious delays in the planning process. This does, however, mean that the current consultation process for the NPSs is particularly important as it represents the last opportunity for the public to influence the national policy the IPC will be acting upon.

4. Does the draft Overarching Energy National Policy Statement provide suitable direction to the Infrastructure Planning Commission on the need and urgency for new energy infrastructure?

The urgent need for new, low-carbon energy infrastructure is made clear in the draft Overarching Energy NPS. However, as it is laid out in the overarching NPS, the IPC is simply expected to start its assessment from the basis that there is a significant need for all types of electricity generation, gas infrastructure and oil pipelines. We believe that this may limit the capacity of the IPC to shape and support a national energy system in line with national energy strategy. There are no provisions for the IPC to keep track of what applications have been approved, how the overall system is evolving or the impact on the carbon intensity of the grid of the approved applications as they come on line. The role of the NPSs in supporting national energy strategy is thus inherently limited despite the critical role they will play and their potential to shape a future energy system. The market, in conjunction with the EU ETS is expected to provide the optimum mix of energy supplies. But with doubts over the ETS's ability to set a sufficiently high or robust price for carbon and high uncertainty over future primary fuel prices, relying on the market and carbon trading schemes to deliver the optimum energy system poses a significant risk.

The NPSs raise a number of engineering issues about energy infrastructure development. However, as long as the basic requirement for the IPC is to assume that there is a need for all types of generation and networks, there is little point in these issues being raised in this response as they would not affect how the IPC deal with applications at the fundamental level.

5. Do the assessment principles in the draft Overarching Energy National Policy Statement provide suitable direction to the Infrastructure Planning Commission to inform its decision-making?

Generally yes, with specific concerns raised in the response to subsequent questions.

6. Does the draft Overarching Energy National Policy Statement appropriately cover the generic impacts of new energy infrastructure and potential options to mitigate those impacts?

Generally yes, with specific concerns raised in the response to subsequent questions.

7. Do you have any comments on any aspect of the draft Overarching Energy National Policy Statement not covered by the previous questions?

The urgent need to reform the planning system should not be allowed to create shortcuts around democratic processes. The wholesale changes expected in the energy system will require difficult and complex decisions to be made, many of which are liable to be unpopular with sections of the public at both the local and national level. It is therefore of the utmost importance that the consultation process for the NPSs is seen to be sufficiently comprehensive in order for the new framework to gain public acceptance. Without this, the Infrastructure Planning Commission (IPC) will be unable to function effectively and the NPSs themselves could face legal challenge.

8. Do you think that the Government should formally approve ('designate'):

a) The draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?

Our organisations broadly welcome NPS EN-2 and the important "two pronged" approach that it takes to assessing the ability of a proposal to meet the need (electricity generation) whilst assessing the level of negative impact it has on the location in achieving that. It is central to this process that the goal remains to minimise the latter rather than eliminate it completely.

It is crucial that we develop a new and more capable electricity network in this country to meet our energy needs and carbon reduction targets. Fossil fuelled generation will be an essential element of the solution. Our support for approval of NPS EN-2 is based on the detailed comments in the remainder of this response.

The provisions regarding fossil fuel plant are generally acceptable for gas fired projects, but we have concerns that the provisions for coal fired plant with carbon capture and storage may be so onerous that no new plant (as distinct from retrofit) will be built.

b) The draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?

NPS EN-3 should be approved subject to any specific comments in this response.

There are significant omissions in the current document (Ref para 1.7.1). As noted in the Renewable Energy Strategy, there is a need to allow for new hydro, wave, tidal and tidal flow energy developments to access this consenting route as these are proposed to supply a significant proportion of the 30% target by 2020. In order to give certainty to those companies developing, and investing in, these known technologies, EN-3 must acknowledge their potential in this current document and allow for their adoption into EN-3 in an early revision. Coordinated planning is particularly important in the case of hydro and tidal barrage power, where single small projects that might suit a particular developer's interests can effectively sterilise a much larger potential resource for the future.

We welcome the adoption of a coordinated approach to assess and determine vital infrastructure projects in line with EU and Government energy policy and encourage Government to implement this system as soon as possible with regard to the urgent need for new low-carbon energy capacity and infrastructure.

Any approval of the IPC and NPS system should be based on the understanding that Department of Energy and Climate Change and associated Government bodies are responsible for adopting, implementing and monitoring appropriate policies. These policies must ensure that an appropriate mix of infrastructure development proposals are submitted to the IPC from private or public sources to provide a suitably diverse, sustainable and economical energy supply for the UK

With regard to paragraph 1.2.4 (EN-3), this NPS should not be open to interpretation by the numerous consenting authorities in the UK and the text should be revised to read that “this NPS is a material consideration in decision making on applications that fall under the Town and Country Planning Act 1990.”

c) The draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)?

We support the overall findings of NPS EN-4 and recommend that it be formally approved by the Government, subject to issues raised later in this response. There is, however, some concern that the focus appears to be entirely on the gas infrastructure with little mention of the oil infrastructure.

We would also note that the narrative on LNG import facilities describes the product as chilled methane. This is misleading. LNG is actually a mixture of liquefied hydrocarbons, predominantly (90%) composed of methane but also a significant component (up to 10%) of ethane plus traces of higher alkanes.

d) The draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?

We support the concept of the NPS spelling out clearly the policies that power lines are required to comply with. Subject to the minor comments below, we strongly recommend that NPS EN-5 is formally designated in the national interest.

Where electric and magnetic fields (EMFs) are concerned, health has often been a controversial and disputed area, and so there is benefit in providing clarity through the NPS. This clarity is to the benefit both of power companies (who need to know what constraints they need to follow when designing new lines) and of possible objectors to power lines (who need to know what is already national policy, and therefore not negotiable for a particular proposal, so that they can focus their campaigning effectively).

9. Do the following draft National Policy Statements provide the Infrastructure Planning Commission with the information it needs to reach a decision on whether or not to grant development consent:

a) The draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?

NPS EN-2 places too much emphasis for the success of the proposal on the electricity producer. It should recognise that the supporting infrastructure (electricity transmission, carbon transmission, and water provision and waste water treatment) could and should involve others.

Of the major bulk generation technologies (fossil, nuclear, offshore wind) only fossil does not have clarity of future site location. NPS EN-6 designates nuclear sites (though we make comments later about flexibility in this regard) and the Round 3

process has effectively designated offshore wind sites. However fossil fuel sites are, as now, left to the market. This potentially introduces a disconnect into electricity transmission planning and consent, and we believe the NPS process should consider the transmission developments needed to support new fossil fuel sites in conjunction with the sites themselves.

The potential for a lack of “joined up thinking” is too great when there is no overall policy for grid provision. In paragraph 2.2.9 EN-2 for example, it is too restrictive to require that “*a viable connection exists*” before a proposal is submitted.

The requirements for CCR and CCS have the potential to be too onerous and introduce too much risk into the evaluation and hence prevent investment. The current wording in paragraph 2.3.8 EN-2 (“*In the event that CCS is not on track to become technically or economically viable, preventing retrofit, an appropriate regulatory approach for managing emissions will be needed*”) goes some way to meeting this need but it leaves open what “appropriate” means. Delays are likely until the risks can be quantified. It would encourage investment if this emissions reduction were able to be capped in cost or alternatively linked to the EU Emissions Trading Scheme.

It is possible that applications will come forward for plant that lies just outside the current CCR/CCS guidelines to avoid these risks or, perhaps more likely, that developers will ignore coal in favour of additional gas fired plant. Unintended consequences of multiple 295MW stations and/or biomass or gas plants do not represent the optimum generation network. Based on the long term UK reserves of coal it is essential that the policy allows for coal with CCS as much as possible.

There is no credit given to the employment generated locally in planning, construction and ongoing operation. This is often the major factor in support for any project. It would help if this were required to be explicitly detailed in the proposal.

b) The draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?

Subject to the comments made in this consultation, compliance with other relevant current policies and provision for revision in the light of any new issues or technologies, NPS EN-3 will provide sufficient information to allow the IPC to make decisions.

The NPS should make reference to other relevant and adopted legislation which will influence the decision-making process and the implementation of consents. These should include the relevant EU Environmental Assessment regulations, as adopted in the UK, which define the process and requirements.

Para 2.6.42-43 EN-3 that deals with offshore wind leaves too many unknown issues on which to apply an adequate Environmental Impact Assessment or to issue a valid consent. Applications should contain a reasonable outline of the most likely parameters of a development and the IPC can apply planning conditions to allow for variations subject to further agreement as is the case with other planning routes.

Para 2.7.10 EN-3 dealing with wind suggests spacing of 6 x 4 rotor diameters and states that this is ‘normally required’. This is misleading as it is always a compromise of capacity against efficiency and should be deleted or rephrased.

c) The draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)?

Apart from the specific issues raised in answer to question 11 (c) NPS EN-4 should provide the IPC with the appropriate information to make a decision.

d) The draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?

For the most part, the information in NPS EN-5 is clear and comprehensive and represents agreed best practice.

There is already a clear and comprehensive Government policy on Electric and Magnetic Fields (EMFs) set out most recently in a Written Ministerial Statement on 16 October 2009. This Government statement followed a long, detailed and open stakeholder process to address all the issues and all the points of view (which the engineering profession took part in and applauds as a constructive and responsible way of arriving at public policy). This section of NPS EN-5 follows the Government policy statement referred to above and therefore we fully support it.

The only reservations we have are concerning the General Assessment Principles, where there are a number of variables on which the IPC will need detailed, verifiable and preferably independent views. It is not clear how or from where these will be obtained. Examples are:

2.3.4 EN- 5: Contribution of the works to the need for energy infrastructure - who would the IPC ask to satisfy them in any further probe they may require?

2.3.5 EN- 5: "Taking into account current and reasonably anticipated future generation demand" – how will the IPC determine what is reasonable and how far ahead will they look when the facility is being built, at least in part ahead of need?

10. Do the following draft National Policy Statements appropriately cover the impacts of the specific types of new energy infrastructure covered in them, and potential options to mitigate those impacts:

a) The draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?

The linking infrastructure for each proposal appears not to be covered in the individual application. Separate planning applications will need to be made for road access, water supply, grid connection and carbon removal (from CCS). The impact of these has not been included and may well be subject to different standards of judgement as they are outside of the remit of the IPC.

Consideration should be given to creating a new National Policy Statement for Carbon Capture and Storage to specifically address the risks of this emerging technology and encourage the benefits to be obtained from creating a "grid".

b) The draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?

If associated known policies and references are included as references to the NPS then EN-3 covers the significant impacts. There will need to be acceptance that issues may arise that have not been foreseen and that the IPC will have the authority

to require further assessment of these with regards to an relevant policy and best practice and that the IPC will then have the power to decide on the significance of these in their overall determination of applications.

c) The draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)?

Below are two issues of concern:

2.7.6 EN-4: the narrative on location overlooks the requirement for proximity to an export gas pipeline. In an ideal situation, the existence of a connection to the gas grid would be a primary planning consideration.

2.7.11 EN-4: the narrative on noise mitigation omits any reference to the desirability of selecting equipment that makes minimal noise in the first place. Consideration should be given to well designed plant and equipment where noise has been eliminated at the outset. This factor should take precedence over mitigation measures including acoustic insulation.

d) The draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?

Below are a number of specific issues of concern in EN-5:

Undergrounding (2.7.7 EN-5): Cables are said to be typically 10 or 20 times the cost of overhead lines. This range and the reasons given for the variation are approximately right but presumably the IPC would need a more accurate ratio for each application (it varies greatly according to local circumstances). Who would provide this with the degree of independence needed?

Noise (2.8.9 EN-5): The most recent document quoted is 1997. There may well be updates under preparation or in the future which might alter some detail. This is perhaps allowed for by the phrase "The IPC is likely to be able to regard it as acceptable for the applicant to use this or another similar methodology that appropriately addresses the particular problems" but greater clarity would be helpful.

Climate Change Adaptation: The following could usefully be added to the bulleted list in paragraph 2.4.1 EN-5:

- Flooding: Does this cover cables outside of sub-stations that are in trenches or tunnels, which may become flooded or subject to water ingress?
- Higher average temperatures: presumably overhead line conductors will also be subject to greater sag due to the higher expected ambient temperatures?

Electric and Magnetic Fields: The overall intent and content of NPS EN-5 is right and should help bring clarity to the EMF issue, which is very much to be welcomed. We consider that in some places the wording could be clearer and the following comments make some specific suggestions to address this. But these are details only.

- NPS EN-5 explicitly states that compliance with the International Commission on Non-Ionising Radiation Protection (ICNIRP) health protection guidelines is expected. It also sets out that, as long as ICNIRP and the policy on phasing is followed, there are no further restrictions, specifically no restrictions on how close power lines and homes can be to each other. But this is implicit only. The

Government response to the Stakeholder Advisory Group on extremely low frequency electric and magnetic fields (SAGE) of October 2009 was admirably clear and explicit on this and it would be better if, in the same spirit, NPS EN-5 also spelled out explicitly that there are no such restrictions on how close power lines and houses can be to each other.

- 2.9.5 EN-5: this says the electricity industry voluntarily complies with ICNIRP. But our understanding is that compliance with ICNIRP in the terms of the EU Recommendation is Government policy (and has been since 2004). It may not be legally enforceable, but is clearly not just a matter of voluntary industry practice that could be withdrawn at any time.
- 2.9.6 EN-5: It would it be better to express this as “any possible need for introducing further precautionary measures” rather than “the possible need”.
- 2.9.10 EN-5: this states that lines at 132 kV and below will comply with ICNIRP basic restrictions as a consequence of the Electricity Safety, Quality and Continuity Regulations (ESQCR). It then goes on to say that the IPC will need to be satisfied of this which implies that evidence needs to be provided. However, this would be an unnecessary burden if all such lines comply anyway. It would be better to require evidence of compliance for lines of greater than 132 kV, but for lines of 132 kV and below, to assume compliance unless evidence is advanced to the contrary.
- 2.9.11 EN-5: this states that the IPC should expect evidence of compliance for 275 kV and 400 kV lines. We consider it would be helpful to be more explicit about what evidence would be regarded as satisfactory. We understand that the electricity industry has been developing a Code of Practice with DECC which would set out what constituted adequate evidence of compliance. It would be helpful for this Code of Practice to be completed and adopted and to be referred to in NPS EN-5. This would further the spirit of providing maximum clarity and minimising the scope for dispute.
- 2.9.13 and 2.9.17 EN-5: these sections both talk about “mitigation”. Although neither section requires mitigation action to be taken, the mere mention of mitigation could raise false expectations. It would be better to be explicit that mitigation consists of compliance with ICNIRP and optimal phasing but no other mitigation is appropriate or required on EMF grounds.
- We consider Annex A EN-5 to be not as clear as it might be and suggests redrawing. For example a landscape page format would enable greater clarity.

11. Do you have any comments on any aspect of the following draft National Policy Statements not covered by the previous questions:

a) The draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?

No further comment.

b) The draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?

No further comment.

c) The draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)?

No further comment.

d) The draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?

No further comment.

12. Do you agree with the findings from the following Appraisal of Sustainability reports:

a) Appraisal of Sustainability report for the draft Overarching Energy National Policy statement (EN-1)?

b) Appraisal of Sustainability report for the draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?

c) Appraisal of Sustainability report for the draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?

d) Appraisal of Sustainability report for the draft National policy Statement for Gas Supply Infrastructure and gas and Oil Pipelines (EN-4)?

e) Appraisal of Sustainability report for the draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?

No comment

13. Do you think that any findings from the following Appraisal of Sustainability reports have not been taken account of properly in the relevant draft National Policy Statements:

a) Appraisal of Sustainability report for the draft Overarching Energy National Policy statement (EN-1)?

b) Appraisal of Sustainability report for the draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?

c) Appraisal of Sustainability report for the draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?

d) Appraisal of Sustainability report for the draft National policy Statement for Gas Supply Infrastructure and gas and Oil Pipelines (EN-4)?

e) Appraisal of Sustainability report for the draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?

No comment.

14. Do you have any comments on any aspect of the following Appraisal of Sustainability reports not covered by the previous questions:

a) Appraisal of Sustainability report for the draft Overarching Energy National Policy statement (EN-1)?

b) Appraisal of Sustainability report for the draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?

c) Appraisal of Sustainability report for the draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?

d) Appraisal of Sustainability report for the draft National policy Statement for Gas Supply Infrastructure and gas and Oil Pipelines (EN-4)?

e) Appraisal of Sustainability report for the draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?

No comment.

15. Do you have any comments on the Habitats Regulations assessment reports for the following draft National Policy Statements:

a) Habitats Regulations Assessment report for the draft Overarching Energy National Policy statement (EN-1)?

b) Habitats Regulations Assessment report for the draft National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)?

c) Habitats Regulations Assessment report for the draft National Policy Statement for Renewable Energy Infrastructure (EN-3)?

d) Habitats Regulations Assessment report for the draft National policy Statement for Gas Supply Infrastructure and gas and Oil Pipelines (EN-4)?

e) Habitats Regulations Assessment report for the draft National Policy Statement for Electricity Networks Infrastructure (EN-5)?

No comment.

16. Do you think that the Government should formally approve ('designate') the draft Nuclear National Policy Statement?

The draft Nuclear NPS EN-6 should be approved subject to certain areas, outlined below; where we believe the NPS could be usefully clarified or augmented.

17. Does the draft Nuclear Energy National Policy Statement provide the Infrastructure Planning Commission with the information it needs to reach a decision on whether or not to grant development consent?

In general NPS EN-6 does provide the IPC with the adequate information on which to reach decisions. We have identified a few areas where we feel the NPS would benefit from clarification or strengthening:

- We accept that the mix of generation is likely to at least in part be decided by the market and that the amount of potential new nuclear coming forward is unknown at the present time. However, the manner in which nuclear has been handled in NPS EN-6 is different to other technologies in that specific

sites have been identified, which implies limits to capacity, particularly if some sites end up being owned by generators but not developed. NPS EN-6 should acknowledge the need for other sites to be brought forward by developers in the future and should not limit the amount of nuclear capacity that might be offered. A continuing review of capacity actually proceeding to construction needs to be undertaken to inform decision making on new capacity across the spectrum of technologies.

- EN-6 Section 2.3: Low marginal costs of generation are a benefit of nuclear generation, but what matters overall is total cost of generation. There remain uncertainties about capital costs of nuclear power plant and, less significantly, the discounted costs of dealing with waste, however current predictions of the Government and others indicate nuclear to be cost competitive on a long run basis also (allowing for carbon).
- EN-6 section 3.8 covers 'Radioactive Waste Management'. The concluding paragraph (3.8.20) states 'Having considered this issue, the Government is satisfied that effective arrangements will exist to manage and dispose of the waste that will be produced from new nuclear power stations. As a result the IPC need not consider this question.'

As noted in our response to Question 19 immediately below, we concur with the Government's preliminary conclusions that effective arrangements will exist to manage and dispose of the waste that will be produced from new nuclear power stations. However these do await a resolution of the current debate. The work of CoRWM was designed to provide a solution for legacy waste only and excluded specifically new waste from new power stations. From an engineering perspective, this is not problematic as proven technology exists to manage and store waste until an ultimate disposal route is available, but we would recommend that this issue is resolved as soon as possible.

18. Does the draft Nuclear National Policy Statement provide suitable direction to the Infrastructure Planning Commission on the need and urgency for new nuclear power stations?

We note in EN-6 sections 5.3.6 and 5.3.7. (Treatment of multiple reactor applications on a nominated site) that the Strategic Site Assessment has considered one reactor only on each site, except for the AoS and HRA for Hinkley Point and Sizewell which has considered 2 reactors. If multiple reactor applications are made on other sites in NPS EN-6, it is left up to the IPC and regulators to determine acceptability.

We note also that the grid transmission agreements already entered into suggest that multiple reactor developments are being considered at Braystones, Sellafield and Kirksanton as well as the firm plans announced by EDF Energy for dual EPR units at Hinkley Point and Sizewell, and it seems inevitable that multiple reactors on the same sites will become accepted practice, not least for economies of scale. This is consistent with existing best practice – for example the 6x900MW units at Gravelines on the North French coast).

We recommend that the Government includes appropriate statements in NPS EN-6 on its view about the suitability of each nominated site to host multiple reactors up to the number inferred by the grid transmission agreements. Given all are coastal sites, adequate cooling water should not be a problem (Gravelines for example has a total generation capacity of 5,400MW, significantly greater than any of the nominated

sites); most of the other criteria (demographics, flora/fauna, flooding, military, civil air movements) apply to the site irrespective of the number of reactors on it; the one outstanding consideration is whether the site is big enough.

19. Do you agree with the government’s preliminary conclusion that effective arrangements will exist to manage and dispose of the waste that will be produced by new nuclear power stations in the UK?

Yes. We agree with the Government’s preliminary conclusion that effective arrangements will exist to manage and dispose of the waste that will be produced by new nuclear power stations in the UK.

The long term disposal of legacy nuclear waste will require firm resolution well before significant waste from new stations is produced, and the volumes of waste from the new stations will be a fraction of the legacy inventory, most of which arose during the industry’s learning phase in the 1950s and 1960s. Thus we do not see engineering issues in dealing with waste from a new fleet. However, there is some urgency to define a disposal route for waste for new power stations – the CoRWM studies specifically excluded waste from new stations from their deliberations.

20. Does the draft Nuclear National Policy Statement appropriately cover the impacts of new nuclear power stations and potential options to mitigate those impacts?

No comment.

21. Do you agree with the Government’s preliminary conclusion on the potential suitability of sites nominated into the Strategic Siting assessment, as set out below? You can respond in general terms on the assessment as a whole, or against one or more specific sites.

a) General comments

The Government considers the following sites to be potentially suitable for the deployment of new nuclear power stations by the end of 2025:

- b) Bradwell
- c) Braystones
- d) Hartlepool
- e) Heysham
- f) Hinkley Point
- g) Kirksanton
- h) Oldbury
- i) Sellafield
- j) Sizewell
- k) Wylfa

The Government does not consider the following site to be potentially suitable for the deployment of new nuclear power stations by the end of 2025:

l) Dungeness

We agree that it is important to identify sites and allow effort to proceed for those sites. However, we would recommend that NPS EN-6 leaves open the possibility for other sites to be considered. Depending on the interpretation of “deployed by 2025” –

especially if this might mean “construction started by 2025” we believe it would be unwise to be too limiting. Given that nuclear power stations will be developed by private firms, there are advantages to acquiring sites early – such as denying them to other developers. The pattern of current ownership is reasonably clear but the possibility of future industry change or consolidation changing this pattern remains.

It might be reasonable for NPS EN-6 to contain a procedure for dealing with new sites. This category might also reasonably include the sites rejected under the current NPS EN-6 such as Dungeness and Kingsnorth, as, in the future, the balance between the various factors used in arriving at the decision may change significantly, for example, in the case that carbon capture and storage or deep water renewables prove incapable of delivering at scale leading to the market pressing for an enhanced level of nuclear build.

22. Do you agree with the Government’s preliminary conclusion that the three sites identified in the Alternative Sites Study, as listed below, are not potentially suitable for the deployment of new nuclear power stations by the end of 2025? You can respond in general terms on the sites identified in the Study as a whole, or against one or more specific sites.

- a) General comments
- b) Druridge Bay
- c) Kingsnorth
- d) Owston Ferry

Please see response to Q21 above. We would be keen to see a mechanism to deal with new sites in the NPS.

23. Do you agree with the findings from the Appraisal of Sustainability reports for the draft Nuclear National Policy Statement?

We note that for NPS EN-6 the balance between benefit and detriment (including environmental detriment) is addressed separately at a strategic level by the justification process. We note that there is a parallel consultation in progress on the Government’s preliminary conclusion that the construction, operation and decommissioning of both types of reactor (EPR and AP-1000) is Justified.

24. Do you think that any findings from the Appraisal of Sustainability reports for the draft Nuclear National Policy Statement have not been taken account of properly in the draft Nuclear National Policy Statement?

We are not aware of any.

25. Do you have any comments on the Habitats Regulations Assessment reports for the draft Nuclear National Policy Statement?

No comment.

26. Do you have any comments on any aspect of the draft Nuclear National Policy Statement or its associated documents not covered by the previous questions?

No comment.

27. Do you have any comments on the Impact assessment report for the draft energy National Policy Statements?

No comment.

28. Does this package of draft energy National Policy Statements provide a useful reference for those wishing to engage in the process for development consent for nationally significant energy infrastructure, particularly for applicants?

Generally yes. We believe it would be useful to produce a plain English summary document, including summaries of each contributing document, to help first-time “engagers” navigate their way round the volume of material.

29. Do you have any comments on any aspect of the draft energy National Policy Statements or their associated documents not covered by the previous questions?

The draft NPSs do not set limits for the amount of one technology or another that may get deployed and that is something we agree cannot be predicted at the moment. However there are credible scenarios leading to a low-carbon economy where electricity replaces oil as the dominant transport fuel and gas as the dominant source of space heating. Even allowing for major improvements in energy efficiency and the development of local energy solutions this would be likely to require rather more new capacity than currently envisaged.

Much of this new capacity would be likely to come after 2020 and perhaps after 2025, but we believe the NPSs should be flexible enough not to act as a barrier should a much greater build be needed.

There is considerable uncertainty over which technologies will succeed at scale, and on how the power system will be operated in the future. We will be relying on carbon capture and storage, new renewable technologies such as deep water offshore wind, smart grids and many other things to deliver the desired low-carbon outcomes. It is highly likely that one or more of these technologies will hit development or deployment barriers, and we recommend that the NPSs are flexible enough to adapt to the consequences of major shifts in the possible plant mix.