MARK PARISH COUNCIL
SOMERSET.

DRAFT NATIONAL POLICY STATEMENT EN-1:
KEY ISSUES
[including those with implications for EN-5]

1. Mark Parish Council in Somerset has prepared this paper in response to the consultation on National Policy Statements [NPSs] being conducted by the Department of Energy and Climate Change.

2. Mark is a Somerset Levels village currently threaten by both of the corridors being considered by National Grid as options to connect the proposed nuclear reactors at Hinkley Point with the grid at Seabank, near Avonmouth by way of overhead lines. The Council has prepared this paper with the assistance of other parish councils and campaign groups in mid Somerset.

Overview

3. The consultation on and introduction of National Policy Statements is to be welcomed in seeking to provide clarity for developers, the IPC and all those nationally and locally with an interest in major energy infrastructure schemes. This paper focuses on EN-1, which is intended to set the framework within which the technology specific ENs are to be implemented. EN-1 provides the strategic context for developers and the IPC in considering the preparation and consideration of developments requiring Development Consent Orders. As a consequence, it is a critical document for local authorities, other statutory consultees, interest and campaign groups and members of the public wishing to understand what is required of developers and thus how they can best submit relevant and persuasive responses to consultation on specific proposals.

4. It is the view of this paper that in the process EN-1 unreasonably restricts the scope of electricity transmission technologies in EN-5 by making overhead lines the default solution and that this influences the treatment of the issues raised in EN-1 which are to be considered by developers and the IPC in ways which do not reflect their relevance to the alternative technologies. Moreover, this approach fetters the ability of consultees to widen the debate on specific local proposals and thus secure consideration of issues of concern to them.

5. In considering transmission technologies this paper refers to National Grid since that company is the monopoly provider of high voltage transmission infrastructure in England and Wales.

6. Although focussed on EN-1, this paper has implications for the way in which EN-5 is drafted.

Prematurity

7. Before turning to the substance of EN-1 it is necessary to look at the timing and timescale for the production of EN-5 and thus the content of EN-1 as it relates to electricity transmission projects.

8. As will be seen below, it is argued that a key deficiency of both documents is their focus on overhead lines as the default option for transmission. This ignores the potential for the use of alternative technological solutions, including undergrounding and subsea. This in turn has the effect on National Grid's approach to connecting new generating capacity to the grid of excluding such technologies from initial, or even ultimate, consideration. It is becoming clear that this is under fundamental review:-

    - After discussion with the IPC National Grid has come to accept that its approach to Stage 1 consultation should encompass alternative technologies, a view which has forced the Company in respect of the Hinkley C Connection Project, however unwillingly, to provide more detailed information on undergrounding and subsea. It is to be expected that this change of heart will become entrenched in future consultation exercises.
    - National Grid has announced that, with the encouragement of the Government, it has commissioned a review of the costs of undergrounding and subsea connections, to be completed in January and consulted upon thereafter.
    - National Grid has announced that it is to conduct a consultation on its approach to undergrounding. Its draft of a new policy on this would confirm undergrounding as a transmission solution to be considered at the outset of its work on high voltage connection projects.
    - National Grid has announced that it is postponing a decision on its preferred corridor for the Hinkley C Connection project until it has reviewed (again) all the options, explicitly including both undergrounding and subsea, with the implication that overhead lines may not in the event be chosen.

9. It is clear from this that a considerable amount of work is currently underway, and will come to fruition in the first half of 2011 on the practicability and cost of undergrounding and subsea connections. This should have a significant effect on National Grid's policy on technology solutions to high voltage connections. It would be perverse if the NPSs most relevant to this created a policy framework which ignored the growing in National Grid and among statutory consultees and interest groups at the primacy given to overhead lines and the evidence being developed of the superiority of alternative technologies.

10. **Recommendation 1: EN-5 should not be finalised until, and should then take into account, the results of the work referred to above [paragraph 8] has been completed.**

11. **Recommendation 2: EN-1's coverage of transmission projects should not refer explicitly to "overhead lines", but rather to "transmission infrastructure". [See also recommendation 4.]**

Policy inconsistency

12. At present EN-1 ignores the inconsistent approach which the current planning legislation adopts to high voltage electricity transmission projects. For instance, it is argued that the Hinkley C Connection could be achieved by one of 3 alternative options, or a combination of them. These are overhead lines, as proposed; underground, possibly alongside the line of the M5 motorway; and subsea along the Bristol Channel.

13. Given that these would achieve the same technological outcome, it might be supposed that they would be handled in the same way, i.e. that each would be subject to public consultation and thereafter to consideration by the IPC, or its successor. In fact, only overhead lines fall to be considered in this way. Undergrounding is catered for by the General Development Order, and thus largely ignores the public interest, while subsea is handled by entirely different legislation and Government bureaucracy. Neither comes within the ambit of the IPC.

14. **Recommendation 3: the Government should make an early commitment to harmonising the legislative provisions for consultation and consent of transmission projects of national significance and linked to the creation of new generating capacity so that overhead lines, underground cables and subsea connections are considered with the same policy framework and through the same consultative process. EN-1 should be redrafted to reflect the commitment proposed here.**

Scope

15. The most significant defect of EN-1 lies in the way in which it privileges one technology solution to transmission of electricity over others. The result is to constrain the discussion in EN-5 to issues relating to overhead lines, when other options should be considered/implemented as appropriate.

16. For instance, paragraph 3.7.2 refers to the need to construct "*new lines of 132kv and above*". Paragraph 3.7.6 claims that "*new lines will have to be built*" because the existing system will be inadequate and goes on to assert that "*new lines will have to cross areas where there is little or no transmission infrastructure at present.*" Paragraph 3.7.7 says that "*new lines will have to be built.*" Paragraph 3.7.8 refers to the Energy Networks Strategy Group [ENSG] report as the best available overview of the future of electricity transmission, which despite its perfunctory reference to alternative technologies [paragraph 4.7] assumes overhead lines as the default enhancement solution.

17. In case it should be argued that "lines" does not necessarily mean pylons, paragraph 3.7.9 is even more specific: "*there is significant need for new*

electricity transmission and distribution infrastructure (and specially for new overhead lines of 132kv and above) to be provided." Paragraph 3.7.10 reinforces this in saying that "*there is a significant need for new electricity transmission and distribution infrastructure (and specifically for new overhead lines of 132 kV and above) to be provided."*

18. EN-1 then moves on to entrench this privileging by requiring the IPC to accept overhead lines as the default position. Paragraph 3.7.10 says: "*The IPC should assume that the need for any proposed new overhead line of 132 kV or above has been demonstrated in principle; in assessing the need for particular lines, the IPC should assume the line is needed if it represents an efficient and economical means of connecting a new generating station to the transmission or distribution network.*"

19. It should be noted here that paragraph 3.7.10 refers to "overhead lines" and not, as it should when dealing with a presumption in favour of the need for a connection in principle, to "transmission infrastructure."

20. DECC explain that the emphasis on overhead lines arises from section 16 of the Planning Act 2008 which refers to the transmission of electricity only in terms of such lines. DECC argues that it is accordingly constrained by the Act to produce an EN on transmission which is related only to overhead lines.

21. Furthermore, DECC point out that development consent for alternatives to overhead cables would fall outside the ambit of the Act and thus outside the Development Consent Order process. Finally, DECC asserts that only changes in the primary legislation can broaden the scope of the DCO process, and of the need to produce NPSs related to alternative transmission technologies.

22. However, such alternatives to overhead cables are already available or being developed. Undergrounding of cables is increasingly being used in the UK for long distance connections involving high voltages, notably in and around London. Undersea is already used worldwide in national and international grids, including in the UK. The science of superconductors is being developed and introduced for grid transmission, e.g. in the USA, albeit on a small scale, and gas insulated lines are increasingly being employed for high voltage transmission, e.g. in Western Europe.

23. Retention of this privileging of overhead transmission provides cover for National Grid continuing to discount the application of alternative technologies even where their use would substantially mitigate adverse impacts. This is precisely what has happened in the proposal for the connection of the proposed Hinkley C nuclear power station, where initially even undergrounding was not considered for consultation with local communities and organisations.

24. It also means that there is a substantial lack of clarity about what policies apply for the use of alternative technologies which achieve the same operational outcome as overhead lines.

25. Given the failure of the previous Government to draft section 16 of the 2008 Act sufficiently widely, the most appropriate way to deal with the problems this creates is to take advantage of section 14(3) of the Act to expand the list of types of infrastructure which come under it to include alternative transmission technologies.

26. Until that happens DECC should redraft EN-1 to make clear:

- that any application for a DCO relating to section 16 must first set out why overhead lines are to be preferred to other transmission technologies and that these alternative solutions should be pursued unless their use would give rise to **significantly** greater financial, economic, environmental, visual and social costs;

- to encourage this, all references in EN-1 to "lines" or overhead lines" should be replaced with "electricity transmission infrastructure";

- the drafting changes to EN-1 proposed above should also be made to EN-5 and, in order to clarify the policies which would apply to alternative transmission technologies, either EN-5 should be redrafted to make clear that its policies apply to them, albeit outside the ambit of the 2008 Act, or a separate NPS for those technologies should be drafted for consultation as a statement of the Government's expectations when such proposals come forward.

27. If it is the view of DECC that there are insuperable legal obstacles to these approaches, it should consider what changes should be made to EN-1 and EN-5 to make explicit that the absence from section 16 of the 2008 Act of reference to alternative transmission technologies does not privilege overhead lines over them.

28. **Recommendation 4: paragraph 3.7.10 should refer to "transmission infrastructure" and not "overhead" lines when advising the IPC on the presumption that need is demonstrated.**

29. **Recommendation 5: the Government should take the earliest opportunity to amend section 16 of the Planning Act 2008, as provided for in section 14(3) of the Act, to replace "overhead lines" with "electricity transmission infrastructure" and should make the consequential changes elsewhere in the Act.**

30. **Recommendation 6**: **EN-1 and EN-5 should be redrafted in the light of the legislative change recommended above to widen the scope of infrastructure to be considered to all proven transmission solutions.**

31. **Recommendation 7: EN-1 should be redrafted to make it clear to National Grid and the IPC that any section 16 applications for a DCO must demonstrate how all relevant technologies have been considered and on what basis discounted.**

32. **Recommendation 8: EN-1 should accordingly be redrafted to substitute "transmission infrastructure" for "lines" or " overhead lines" and to make clear that EN-1 does not make the assumption that alternative transmission technologies are in principle subordinate to overhead lines.**

Costs

33. An important aspect of the issues available to communities when consulted on transmission proposals is the cost of alternative solutions. However, the Government's response to the first consultation appears in paragraph 1.42 to leave to developers a decision on how financial viability is to be calculated and thus what financial information should be made available Without a commitment to financial transparency, EN-1 deprives communities of the opportunity as of right of considering relative whole-life or average electricity unit/annual bill costs. That is a critical deficiency when the up-front capital costs of alternative solutions are so widely different – with the result that the traditional solution [overhead lines] is portrayed as the least expensive in up-front costs without a more searching examination of the issue. This is what has happened in the case of the Hinkley C connection proposal.

34. Recommendation 9: EN-1 should require comparative costing information over the long-term, and in terms of unit of electricity/average annual consumer cost, as well as initial capital cost.

Generation-led development.

35. Paragraph 1.6.11 argues that "*EN-1 already contains policies which severely limit the prospects for development of large-scale energy infrastructure in the most attractive landscapes and townscapes."*

36. This may be true for generation projects, but it ignores the fact that transmission projects inevitably follow on the heels of plans for new generation. Indeed, paragraph 3.7.7 says as much: "*As the full report makes clear, these kinds of flows of power cannot be accommodated by the existing network. Accordingly, new lines* will *have to be built, and the location of renewable energy sources and designated sites for new nuclear power stations makes it inevitable that a significant proportion of those new lines will have to cross areas where there is little or no transmission infrastructure at present, or which it may be claimed should be protected from such intrusions."*

37. Thus the thrust of Government policy towards renewables/nuclear, which in turn implies development on the national periphery, inevitably means that electricity transmission projects will be in "*the most attractive landscapes*". The restrictive policies which EN-1 claims accordingly have less impact on electricity transmission by virtue of their following where generation leads. Moreover, the identification of specific sites for nuclear generation, in EN-6, exacerbates this.

38. **Recommendation 10: EN-1 should be redrafted to make it clear that the criteria for assessment by the IPC of transmission applications should be no less rigorous than for other types of application, notwithstanding the link between generation and transmission projects.**

Regional versus national interest

39. EN-1 recognises in paragraphs 3.7.6 and 3.7.7 and footnote 47 that changes in the location and technology used in electricity generation will mean that transmission arrangements will have a greater impact on the peripheral regions of GB than hitherto and that [paragraph 1.6.2] these are likely to be negative for biodiversity, landscape/visual amenity and cultural heritage. It also states [paragraph 2.2.22] that electricity use is likely to double over the next 40 years, with significant implications for the transmission grid.

40. EN-1 refers [paragraph 3.7.6] to the impact of these changes on the increases in generation in the regions; the South West is discussed in paragraph 3.7.6. In the process it recognises that, *inter alia*, the South West will see both a major increase in generation and an associated significant enhancement of the grid in the region.

41. EN-1 argues [paragraph 3.7.3] that "*it is important to note that new electricity network infrastructure projects, which will add to the reliability of the national energy supply, provide crucial national benefits, which are shared by all users of the system"*.

42. However, EN-1 is silent on how the balance is to be struck between national advantage and regional cost [especially in terms of landscape, ecology and community welfare]. This is particularly important when considering the choice of technology and the need for/benefits of mitigation. Rather, in opting for a market-led approach to energy provision the Government eschews a view as to the dynamic between national and regional interest. This paper argues that the greater the cumulative regional cost, for instance in terms of environmental impact [see below], the greater the case for increasing national contribution to the costs, e.g. those of a financial nature in opting for an alternative solution or in increased mitigation.

43. **Recommendation 11: EN-1 should discuss those issues concerned with the balance between regional costs and national benefit, with an acceptance that national costs should increase to provide improved regional benefits.**

Local impact

44. EN-1 argues [paragraph 1.6.2] that "*The development of new energy infrastructure, at the scale and speed required to meet the current and future need, is likely to have some negative effects on biodiversity, landscape/visual amenity and cultural heritage. However, the significance of these effects and the effectiveness of mitigation possibilities is uncertain at the strategic and non-locationally specific level at which EN-1 to EN-5 are pitched."*

45. In practice, however, in general terms and as paragraph 3.7.7 of EN-1 confirms, the geography of, *inter alia*, the South West makes such issues highly predictable. Recognition in EN-1 that the South West will export a much greater proportion of electricity than hitherto, the fact that much of it will be generated at the periphery of the region, the admission that the new transmission infrastructure will have to traverse high quality landscape where no such infrastructure is currently in place, leads inexorably to the conclusion that the negative effects are predictable and will be substantial.

46. **Recommendation 12: EN-1 should flesh out more clearly the need, in principle, where cumulative regional impacts can be predicted to be substantial, for National Grid to demonstrate how alternative technologies could be utilised, even at greater financial cost.**

Aggregate impact

47. In paragraph 4.9.2 EN-1 expresses the Government's preference for generation and related transmission proposals to be the subject of the same DCO process, while accepting that this may not always be possible or desirable. The result, as at Hinkley, is that the 2 applications for Development Consent Orders may come before the IPC separately.

48. This creates a significant defect in the process, since if one were to look at the costs [financial and other] of a transmission project in the context of the overall costs of the generation and transmission proposal, one might come to a different conclusion as to the choice of transmission technology or the acceptability of mitigation measures than if one were looking solely at the transmission element itself.

49. It would not be inconceivable, therefore, to arrive at different conclusions about the overall costs of transmission from similar generation sites resulting solely from whether they were or were not included in the DCO for that generation site.

50. Recommendation 13: whether or not related generation and transmission projects proceeded to the IPC together, EN-1 should make plain that the financial case for the chosen transmission option should be set in the context of the cost of the related generation scheme where that is practicable.

Security

51. EN-1 deals with matters relating to the physical security of infrastructure in section 4.15. It does not discuss, however, the relative vulnerabilities of infrastructure. For instance, overhead lines are more vulnerable to terrorist attack that cables laid underground or undersea [despite the contrary assertion in EN-5]. It is reasonable to see this argued out in EN-5. But at the outset EN-1 should flag up that the relative vulnerability of different infrastructure is a factor to be taken into account, including in evaluating relative costs, in decisions on which solution to transmission need is to be adopted.

52. **Recommendation 14: section 4.15 of EN-1 should be redrafted to emphasise that the technology ENs require applications to deal with the specific security implications of the chosen solution and that these are material in coming to a decision on which technology to choose.**

Efficiency and economy versus environment

53. Schedule 9 of the Electricity Act 1989 requires National Grid, in planning the development of its transmission network, to have regard to environmental impact. [This is in addition to the requirement in respect of efficiency/economy in section 9 of the Act.] However, paragraph 3.7.10 of EN-1 makes economy and efficiency the sole criterion. It is little wonder therefore that National Grid place so much emphasis on the capital cost of projects at the expense of their environmental impact.

54. **Recommendation 15: paragraph 3.7.10 of EN-1 should be redrafted to balance environmental considerations with the financial.**

Alternative technologies

55. Paragraph 4.4.3 of EN-1 says that "*as the IPC must decide an application in accordance with the relevant NPS …, it should be reasonable for the IPC to conclude that alternative proposals which are not in accordance with the relevant NPS cannot be important and relevant to its decision.*"

56. This creates an uncertainty which is especially relevant to EN-5. The prime, but not exclusive, issue in respect of proposals for a new transmission project is likely to be which technology is to be used. In the case of the Hinkley C Connection Project, for instance, if National Grid were to proceed with an application for a DCO in respect of an overhead line, opposition at the hearing stage would likely focus on the superiority of alternative technologies, notably underground and undersea. However, the first of those features in EN-5 only as a means of mitigation and the latter falls outside the 2008 Act. The risk is, therefore, that retention of the current drafting of paragraph 4.4.3 would stifle legitimate discussion of technologies which local communities believed were more relevant to their situation than overhead lines.

57. **Recommendation 16: paragraph 4.4.3 of EN-1 should be redrafted to clarify that all relevant transmission technologies are legitimate proposals for consideration by the IPC.**

Health

58. At paragraph 4.13.3 EN-1 says that "*The direct impacts on health may include increased traffic, air or water pollution, dust, odour, hazardous waste and substances, noise, exposure to radiation, and increases in pests.*"

59. This ignores the increasing concern about the impact of Electro-magnetic Fields [EMFs], which are particularly relevant to decisions on transmission projects. Given that transmission projects often extend over considerable

distances and near or over many communities, it would be helpful if this paragraph mentioned the issue. Allied to this is the absence of reference to international comparisons. This applies to references to health in respect of all the ENs. In the case of overhead lines, it would then link to discussion in EN-5 of the growing concern in Western European countries about the health implications of transmission projects and the move to undergrounding as a consequence [see recent development in Norway and the Netherlands, for instance].

60. Section 4.13 of EN-1 refers to the need to examine all potential health effects, but it could be strengthened by reference to differential health effects in the local population. For instance, the health of children is generally acknowledged to be more susceptible to the adverse effects of development than that of adults. In the case of overhead lines, the concern focuses on EMFs and childhood leukaemia. A simple reference to the need to consider differential impact, e.g. in children or the elderly would be helpful.

61. **Recommendation 17: section 4.13 of EN-1 should be redrafted to reflect the need for developers to consider the differential impact of their projects on the local population.**

Landscape and visual amenity

62. In section 5.9 EN-1 draws particular attention to 2 aspects of this issue which need particular attention. The first [paragraph 5.9.2] refers to the impact of cooling towers and chimneys. The second [paragraph 5.9.17] refers, in respect of undesignated landscapes, to the particular vulnerability of coasts.

63. This paper does not argue against the relevance of both of these statements. However, similar prominence should be afforded to the impact of overhead lines. The impact on the landscape of many kilometres of overhead lines is likely to be similar if not more adverse than that of cooling towers and their associated steam plumes. The proposal for the Hinkley C Connection project, for instance, is for a line of 46.5-metre high pylons stretching for 62 kilometres.

64. EN-1 argues that coastal areas are particularly vulnerable to visual intrusion "*because of the potential high visibility of development on the foreshore, on the skyline and affecting views along stretches of undeveloped coast.*" Exactly similar considerations apply in low-lying areas such as the Somerset Levels, with long sight-lines, uninterrupted views and absence of shielding hills and woodland, across which the Hinkley C Connection is intended to run.

65. **Recommendation 18: section 5.9 of EN-1 should be strengthened by the inclusion of a reference to the similar impact of large-scale overhead line developments on landscape and visual amenity.**

Alternative A4

66. The discussion in paragraphs 1.6.10 *et seq* interacts with those on landscape and visual amenity. In particular this section assumes that tightening the development consent policies [e.g. as per A4] would make it harder for energy infrastructure to be consented which would have adverse landscape or townscape effects. However, the effect in EN-1 as currently drafted of the presumption in favour of overhead lines and the over-emphasis on efficiency and effectiveness of supply is to tip the balance of the argument too far the other way.

67. In practice, application of A4 to transmission projects would strengthen the case at the outset for discussion of all practicable options and on the costs/advantages of mitigation. In other words, it would encourage National Grid at the strategic level to give greater thought to alternatives to overhead lines and thus make it more sympathetic to such options. Once it has considered its strategic approach to an A4-led environment, that could be applied on each occasion it has a project to bring forward. Delay need not be a significant issue, therefore.

68. Recommendation 19: given the centrality of landscape and visual amenity issues to consideration of transmission projects, EN-1, and thus EN-5, should be strengthened to give greater prominence to alternative solutions, or greater emphasis to mitigation, in order to avoid or at least reduce adverse impacts on landscape and visual amenity.

Conclusion

69. This paper argues that EN-1's current coverage of the issues/policy framework for electricity transmission infrastructure is seriously defective. It is predicated on an old-fashioned and increasingly out-moded technology, the relevance of which is currently under re-examination. The legislative framework to which it relates is inconsistent in treating the alternative technologies differently, even where they achieve the same outcome. As a result it privileges overhead lines, an outcome which fetters proper consultation on the application of more relevant and suitable technologies. Worse still, the absence of reference to such technologies provides an ostensible justification for developers or the IPC to ignore their relevance.

70. As currently drafted EN-1 strengthens the presumption in favour of overhead lines by requiring the IPC to assume the need for such a connection where generation is proposed, while allowing the 2 projects to be considered separately even where they are ineluctably connected. EN-1 ignores the balance which should be reflected in consideration of options between the impact of regional costs and national benefits. Additionally, EN-1 does not consider the impact of the concentration of new generation capacity in the national periphery on the need for greatly increased provision of new transmission infrastructure nor encourage the consideration of alternative technologies where the local impact of such concentration would be significant.

71. EN-1 does not promote financial transparency, particularly over the long-term, by leaving to promoters how the financial case is to be argued.

72. Neither the security nor health sections of EN-1 flag sufficiently their particular relevance to transmission projects, notably those utilizing overhead cables. Nor does it balance sufficiently, as the legislation requires, the needs of efficiency and effectiveness in electricity supply with environmental considerations. EN-1 refers to the need to have regard to the particular sensitivity of the unprotected landscape of coastline while ignoring the equally vulnerable inland scenery of, e.g. the Somerset Levels and Moors. Moreover, it over-estimates the delay occasioned for projects which it says would be incurred by adoption of alternative A4.

73. This paper argues for postponement of the publication of the final versions of EN-5 and the related sections of EN-1 until the reviews mentioned above are completed and consulted upon. It also suggests that early action should be taken to amend the 2008 Planning Act, as the Act itself provides. If, however, DECC proceeds to publication it must explain where it has not taken account of the recommendations above, to the extent that it has not.

74. **Recommendation 20: if EN-1 and EN-5 are published with the other NPSs, DECC should set out in detail where it has not accepted the recommendations above and why, assuming that it does so.**

Dr P R Gregory, on behalf of Mark Parish Council, Somerset

December 2010.

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