Although NGET appear to make positive statements regarding improving the visual amenity of their assets, the proposed actions in the business plan fail to seize the opportunity to make a step change to existing assets or do anything differently to avoid the associated costs in future.

Feedback on NGET RIIO-ET2 business plan

Prepared for Ofgem

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Anglesey Says No to Pylons
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Summary

National Grid Electricity Transmission make positive statements regarding improving the visual amenity of their assets, which is good news for the public, but the proposed actions in the business plan fail to seize the opportunity to make a step change to existing assets or do anything differently to avoid the associated costs in future.

Two issues need addressing to enable such a holistic view of transmission assets - NGET's methodologies and Government Policy:

- the cost/value of "natural capital" and socio-economic impact on impacted communities, needs embedding in NGETs methodologies; and
- NPS EN-5 needs revision to remove the presumption in favour of overhead transmission.

Adapting the methodology (and it is a minor adaption, not a wholesale re-write) would be a simple matter with direction from Ofgem. Bringing down the cost of undergrounding with excellent innovation also helps.

Revision of EN-5 is a political matter but needs buy-in from Ofgem and NGET. However, it is one that NGET seem reluctant to tackle, even though the Willingness to Pay survey suggests the public want it. Direction from the Department of Business, Energy and Industrial Strategy will be required.

NGET need to work hard on improving their consultation and engagement approach. Merely "going through the motions" to meet the legislative minimum is not enough, and if the legislative process needs changing, they should engage with communities to attempt that.

The direct feedback on the business plan is contained in Chapter 1 while Chapters 2-6 provide supporting evidence.

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Anglesey Says No to Pylons

February 9th, 2020

1 National Grid Electricity Transmission's business plan 2021–26

1. This chapter raises points identified in the December 2019 version of NGET's business plan[1]. Many of the observations and conclusions have been identified while actively opposing NGETs plans to build a new overhead line across Anglesey (the North Wales Connection) and specific references to this project are made.

1.1 Main findings

2. The public consider overhead lines to be ugly and detrimental to the landscape. This is backed up by the findings of the transmission owner's willingness to pay (WtP) survey[2] and other studies into the impact on landscape and recreation. The public think that NGET should act to remedy this and are prepared to pay up to £400 million each year, via their electricity bills, to have overhead lines removed from both designated, and non-designated landscapes. This is a fantastic opportunity to put right the wrongs of the past, and NGET should seize this opportunity "while the door is open".

3. It is extremely disappointing that NGET do not take the initiative to lay out a wave of improvement projects. While it is recognised that an independent body manage the VIP selection process, NGET do not seem to take any ownership for getting the work done. They almost seem reluctant. The fact that not a single VIP project from the T1 period has yet been completed supports the view that NGET do not see this as a priority. There may only be a limited window while the consumer is willing to pay, and NGET should seize the opportunity now.

4. The 2019 WtP survey found similar conclusions to that in 2012[3] suggesting there is ongoing dissatisfaction with the depletion of visual amenity caused by overhead lines, yet there are no actions in the business plan to prevent this ongoing issue occurring. There are landscapes where new connections are being planned where a portion of the VIP funds could be used to install underground connections from the outset, rather than overhead lines to be removed in the future.

5. Two issues need to be overcome to enable such a holistic view of transmission assets - NGET's methodologies and Government Policy:

    - the cost/value of "natural capital" and socio-economic impact on impacted communities, needs embedding in NGETs methodologies for selecting transmission technology and routeing by use of the Treasury Green Book. This would not necessarily be a blanket presumption in favour of undergrounding, as there are many landscapes of lesser value where overhead lines are entirely

[1] Delivering your future electricity transmission system, National Grid Electricity Transmission's business plan 2021–26, December 2019

[2] Estimating Electricity and Gas Transmission Consumers' Willingness to Pay for Changes in Service during RIIO2, Prepared for National Grid Gas Transmission, National Grid Electricity Transmission, SP Transmission and Scottish Hydro Electricity Transmission, 19 June 2019

[3] Consumer Willingness to Pay research, National Grid Electricity Transmission, June 2012

appropriate (but in the case of Anglesey would, most likely, lead to underground cables).

- Revise EN-5 to remove the presumption in favour of overhead transmission. This may be via an amendment to the current policy or ensuring that the Green Book is used in deciding whether overhead lines are the most appropriate technology. (In the case of Anglesey, this has not been applied, and it is likely that the "destruction" of visual amenity and recreational use by overhead lines, and the associated socio-economic impacts, would render either underground or subsea the better option).

6. Adapting the methodology (and it is a minor adaption, not a wholesale re-write) would be a simple matter with direction from Ofgem. Revision of EN-5 is a political matter, and one that NGET seem reluctant to tackle, even though the WtP survey suggests the public want it. At the 2019 National Grid plc AGM in Birmingham, when specifically asked if the company would support the local community on Anglesey with this, the Chairman, Sir Peter Gershon gave a resounding "No, I will not!". It seems ironic that NGET claim to want to work with local communities, except on the very things that local communities want. It also suggests that NGET's issues with undergrounding come from the very top.

7. Chapters 2 and 3 (below) presents details on how NGET selectively choose from National Policy Statements and bend their own rules to avoid undergrounding.

8. Chapter 4 and 5 (below) presents details on the impact on the tourism economy and the socio-economic impact of a typical connection project. This type of consideration needs to be included in NGETs methodologies.

1.2 Other observations

9. **Transmission Line Losses** – NGET identify that the largest source of carbon emissions is from transmission line losses (~1.5% of total electricity transmitted and 1,295,484 tCO2e in 2018/19) but concludes "A transmission owner can influence only a small portion of losses through the assets they select for the system infrastructure".

10. For the T2 period, they propose to "improve how we report what we have done about transmission losses each year … and to review our Transmission Loss Strategy".

11. Transmission losses cause not only carbon emissions from lost power but also the embedded carbon in additional generation infrastructure. Decarbonising generation should not be an excuse to not act on transmission losses.

12. Buried cables lose less power than overhead lines and this needs greater emphasis in their evaluation methodologies.

13. **Natural Capital** - NGET have selected a voluntary target to "Improve natural capital on 30 sites and achieve net gain on all major build projects by 2020". Under the VIP programme NGET "anticipate making further funding submissions for major undergrounding projects".

14. It is difficult to imagine that more overhead lines would enhance natural capital, and for new connections to achieve a net gain would require some seriously creative accounting.

15. The approach is to be applauded but should be scrutinised with some rigour.

16. **Innovation** – NGET cite several excellent examples:

    - a version of gas-insulated line which uses a gas mix with a lower GWP than SF6 – the benefit being whole-life cost reduction and reduced environmental impact;

    - 'liquid soil' - new backfill material that can conduct heat away from a cable better than standard backfill – resulting in the use of higher cable ratings, rather than installing larger more expensive cable;

    - placing the cable in a duct rather than directly burying it - the benefit is faster reinstatement of land with less disruptive maintenance and eventual replacement;

    - cables must be joined together on site, normally under a tent system. Using a new container system to house the jointing and welding equipment results in higher quality and productivity;

    - reduced joint bays - cable manufacturers have designed new transport, meaning longer lengths of cable can be added to a single drum, reducing vehicle movement and fewer joints.

17. These are all excellent and should reduce the cost of installing underground cables leading to more km undergrounded for a given cost.

18. It is disappointing to not see heat recovery from buried cables given any mention. On Anglesey it is estimated that up to 40 MW of heat could be recovered for use in offices, hospitals and swimming pools.

19. **Willingness to pay** - The WtP survey is a valuable piece of work and the implications of the findings are extremely encouraging. Table 6.4 on page 33 implies that the UK domestic consumer is willing to pay £400 million every year to remove overhead transmission lines from both designated and non-designated landscapes (split roughly 55%/45%).

20. NGET state "We have received feedback from consumers in several large studies (willingness to pay/acceptability testing) demonstrating that people support the undergrounding of existing pylons to improve landscapes. This is especially important in National Parks and Areas of Outstanding Natural Beauty, where our pylons can be considered to have a negative visual impact."

21. The WtP survey found that the public support removal of pylons from non-designated landscapes almost as highly as designated landscapes. NGET seem unable to recognise this.

22. **Consultation and engagement** – NGET have many fine words on this topic:

- "we engage local communities around our major construction projects to understand how we can minimise the impact on their lives and look for opportunities to leave a positive legacy"
- "We should engage deeply with local communities affected by our construction projects. We should do more to help such local communities and consumers are willing to pay a material amount for us to carry out more community activities…"
- "Most engagement supports doing more for local communities, and that minimising the impact on local communities is a priority …"

23. Chapter 6 (below) presents first-hand experience of being on the receiving end of NGETs consultation and engagement process during which NGET:

- made statements that were not true and have misled the public;
- made the Statement of Community Consultation difficult to get hold of;
- withheld the results of the statutory consultation;
- refused to establish a Stakeholder Reference Group as a means of engaging with the public;
- exploited the demographics of Anglesey to their advantage;
- always presented a preconceived solution;
- demonstrated institutional bias;
- failed to re-baseline the consultation after major changes in project scope;
- demonstrated unacceptable behaviour both during and after the consultation; and
- failed to adequately collaborate with Horizon (the generator).

24. NGET need to work hard on improving their consultation and engagement approach. Merely "going through the motions" to meet the legislative minimum is not enough, and if the legislative process needs changing, they should engage with communities to attempt that.

2 Selectively applying NPS EN-1 & EN-5

This chapter was originally written for submission to the Planning Inspectorate for the examination of the North Wales Connection project.

> *The North Wales Connection project would have built approx. 100 new pylons over 30 km of Anglesey countryside, tunnelled under the Menai Strait for 4 km before five more pylons to link Wylfa substation to Pentir substation. The new line would have been roughly parallel to the existing line built in the mid 1960's.*
>
> *A total of 821 people/organisations registered with the Planning Inspectorate as Interested Parties. This included 790 members of the public, of whom 2 argued in favour of pylons, 9 were neither for or against while 779 were against. Less than 80 objected to the nuclear power station. This statistic alone speaks volumes.*

It provides details of how NGET "cherry pick" aspects of Government Policy to get an outcome they are comfortable with.

2.1 Summary

25. This chapter has been written as a review of National Grid's plans for the North Wales Connection against the relevant Government policies that the Planning Inspectorate will use.

26. There are numerous specific points where the applicant has not followed the relevant policy details.

2.2 National Policy Statement EN-1

27. Section 4.1 considers general points and section 4.1.2 states "the IPC should start with a presumption in favour of granting consent to applications for energy NSIPs."

28. There is no objection to the connection existing. The objection is to the selected technical approach (overhead lines).

29. Section 4.1.5 states Local Development Plans (LDP) are one of the matters which the decision-maker may consider to be important and relevant.

30. The joint Anglesey and Gwynedd LDP recognises that both Horizon and NGET NSIPs be happening and is filled with statements about protecting the environment and visual amenity.

31. Section 4.4 considers alternatives and section 4.4.2 states "should include an indication of the main reasons for the applicant's choice, taking into account the environmental, social and economic effects and including, where relevant, technical and commercial feasibility".

32. The applicant has not used a quantitative selection method to select between alternatives and draws on flawed financial analysis. As such, the selected alternative has not been shown to take due account of the relevant factors.

33. Section 4.4.3 states “the IPC should be guided in considering alternative proposals by whether there is a realistic prospect of the alternative delivering the same infrastructure capacity (including energy security and climate change benefits) in the same timescale as the proposed development”.

34. The rejected alternatives can all deliver the same capacity in a similar timescale, and some have more favourable climate change benefits.

35. Section 4.5 considers criteria for “good design” for energy infrastructure and section 4.5.1 states “Applying “good design” to energy projects should produce sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy used in their construction and operation, matched by an appearance that demonstrates good aesthetic as far as possible”.

36. The applicant’s proposal is to use overhead lines on steel lattice pylons. These are not sensitive to place, do not demonstrate good aesthetic and are not the most energy efficient in operation.

37. Section 4.5.3 states “the IPC needs to be satisfied that … the applicant has taken into account both functionality … and aesthetics (including its contribution to the quality of the area in which it would be located) as far as possible.

38. The proposed development would be highly detrimental to the quality of the area.

39. In addition, “there may be opportunities for the applicant to demonstrate good design in terms of siting relative to existing landscape character, landform and vegetation”.

40. Any such opportunities have been discounted or not considered.

41. Section 4.5.5 states “Applicants and the IPC should consider taking independent professional advice on the design aspects of a proposal. In particular, Design Council CABE can be asked to provide design review for nationally significant infrastructure projects and applicants are encouraged to use this service”.

42. It is understood that this service has not been used.

43. Section 4.6 considers combined heat and power (CHP).

44. While the proposed development does not present the conventional opportunity for CHP, there is a possibility that there are heat recovery opportunities that the applicant has not considered.

45. Section 4.8 considers climate change adaption.

46. The selected technology is the least resilient to increased adverse weather conditions.

47. Section 4.9 considers the grid connection and section 4.9.2 states “The Government therefore envisages that wherever possible, applications for new generating stations and related infrastructure should be contained in a single application to the IPC or in

separate applications submitted in tandem which have been prepared in an integrated way".

48. The proposed development is not included in the application for a new generating station and there is no evidence that the two applications have been prepared in an integrated way.

49. Section 4.10 considers pollution control and other environmental regulatory regimes and section 4.10.3 states "In considering an application for development consent, the IPC should focus on whether the development itself is an acceptable use of the land, and on the impacts of that use".

50. The proposed development will put certain sections (pylon bases) of agricultural land out of production and limit operations under over-sails. Underground cables would not impose these limitations.

51. Section 5.9 considers landscape and visual and section 5.9.8 states "Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant constraints the aim should be to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate."

52. The impact on the landscape will be huge during construction and operation, while rejected alternatives, which would also have great impacts during construction, would have minimal impact during operation.

53. Section 5.9.9 concerns National Parks, the Broads and AONBs and states "The conservation of the natural beauty of the landscape and countryside should be given substantial weight by the IPC in deciding on applications for development consent in these areas."

54. Section 5.9.12 states "The duty to have regard to the purposes of nationally designated areas also applies when considering applications for projects outside the boundaries of these areas which may have impacts within them. The aim should be to avoid compromising the purposes of designation and such projects should be designed sensitively given the various siting, operational, and other relevant constraints."

55. Section 5.9.13 states "The fact that a proposed project will be visible from within a designated area should not in itself be a reason for refusing consent."

56. While the developer has managed to avoid placing assets within the AONB, the development will be significantly detrimental to views from within the AONB and views (from without) of the AONB.

57. Section 5.9.15 states "… such projects … will often be visible within many miles of the site of the proposed infrastructure. The IPC should judge whether any adverse impact on the landscape would be so damaging that it is not offset by the benefits (including need) of the project."

58. Section 5.9.17 states “The IPC should consider whether the project has been designed carefully … to minimise harm to the landscape” .

59. It is accepted a connection is required although this will not bring any benefits to Anglesey or indeed North Wales. Given that alternatives exist that will have significantly less impact on the Anglesey landscape, a national resource recognised by UNESCO, such alternatives should be consented.

60. Section 5.9.18 states “The IPC will have to judge whether the visual effects on sensitive receptors, such as local residents, and other receptors, such as visitors to the local area, outweigh the benefits of the project. Coastal areas are particularly vulnerable to visual intrusion …”.

61. The proposed development will be in an area considered by the Office of National Statistics as a “holiday hotspot” due to high dependency of the local economy on tourism. A recent survey (Horizon) of why tourists come to the area found almost 80% being due to the unspoilt scenery.

62. Section 5.9.19 states “It may be helpful for applicants to draw attention … to any examples of existing permitted infrastructure they are aware of with a similar magnitude of impact on sensitive receptors.”

63. The proposed development will be largely parallel to an exist overhead line – a line that was locally resisted in the early 1960’s prior to being imposed by the Secretary of State. Opportunities to rationalise any part of this line have not been taken, although part of the proposed development will use some of the existing pylon towers. The existence of one line should not justify the development of further lines.

64. Section 5.9.21 states “Reducing the scale of a project can help to mitigate the visual and landscape effects of a proposed project. However, reducing the scale or otherwise amending the design of a proposed energy infrastructure project may result in a significant operational constraint and reduction in function”.

65. The applicant states [in email communication] that the proposed development is not required to provide capacity during normal operation, but is essentially “backup” capacity during planned and unplanned outages. As such, the new capacity may be infrequently used. The applicant has not proposed any policy or regulatory constraints which may be amended and/or relaxed to avoid construction of the proposed development.

66. Section 5.9.22 states “Within a defined site, adverse landscape and visual effects may be minimised through appropriate siting of infrastructure within that site, design including colours and materials, and landscaping schemes, depending on the size and type of the proposed project”.

67. Section 5.9.23 states “Depending on the topography of the surrounding terrain and areas of population it may be appropriate to undertake landscaping off site”.

68. Given the topography of the Anglesey terrain, which is glacial in origin, the proposed development is entirely inappropriate.

69. Section 5.10 considers land use including open space, green infrastructure & Green Belt and section 5.10.3 states “Although the re-use of previously developed land for new development can make a major contribution to sustainable development by reducing the amount of countryside and undeveloped greenfield land that needs to be used, it may not be possible for many forms of energy infrastructure.”

70. Subsea or subsurface technology would both significantly reduce the amount of countryside and undeveloped greenfield land required.

71. Section 5.10.24 states “Rights of way, National Trails and other rights of access to land are important recreational facilities for example for walkers, cyclists and horse riders. The IPC should expect applicants to take appropriate mitigation measures to address adverse effects on coastal access, National Trails and other rights of way.”

72. The proposed development will cross, and impact landscape views from, numerous such access ways. The developer has proposed minimal mitigation measures.

73. Section 5.12 considers socio-economic aspects and section 5.12.3 states “This assessment should consider all relevant socio-economic impacts, which may include: the creation of jobs … the provision of additional local services … effects on tourism ... the impact of a changing influx of workers during the different construction, operation and decommissioning phases … cumulative effects …”.

74. Section 5.12.5 states “Socio-economic impacts may be linked to other impacts, for example the visual impact of a development … but may also have an impact on tourism and local businesses.”

75. The applicant has considered many of these factors qualitatively but has not considered any of them quantitatively or included them in the financial analysis underpinning the selection between alternatives.

76. Section 5.12.6 states “The IPC should have regard to the potential socio-economic impacts of new energy infrastructure identified by the applicant and from any other sources that the IPC considers to be both relevant and important to its decision.”

77. Section 5.12.9 states “The IPC should consider whether mitigation measures are necessary to mitigate any adverse socio-economic impacts of the development. For example, high quality design can improve the visual and environmental experience for visitors and the local community alike.”

78. An estimate, which by its very nature cannot be precise, of the socio-economic impacts of the proposed development is £500 million additional community costs (over 40 years at a discount rate of 3.5%). These costs could be entirely mitigated using a subsurface alternative which the applicant has ruled out on grounds of cost (an additional £400 million lifetime cost).

2.3 National Policy Statement EN-5

79. Section 2.2 addresses factors influencing site selection by applicants and section 2.2.2 states "The general location of electricity network projects is often determined by the location, or anticipated location, of a particular generating station and the existing network infrastructure taking electricity to centres of energy use."

80. It is accepted that the location of Wylfa Newydd is outside the control, but not influence, of the applicant. It is relevant that the selection of Wylfa as a site for new nuclear in EN-6 did not consider the availability of a grid connection. Section 3.14.1 of EN-6 states "Issues surrounding electricity transmission were not considered in the SSA [strategic site assessment] because not enough information was available to make an assessment at the strategic level and different applicants may come forward with different proposals without affecting the strategic suitability of the site for the purposes of the SSA". Other potential locations are available on Anglesey for the power station that would result in less intrusive grid connections.

81. Wylfa is perhaps unique in being a proposed location for new nuclear that is a considerable distance from any significant electricity demand.

82. Section 2.2.6 makes reference to Schedule 9 to the Electricity Act 1989, which places a duty on all transmission and distribution licence holders to "have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and ... do what [they] reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects."

83. The applicant has evaluated alternatives that are superior in this regard but has rejected them on grounds of cost.

84. Section 2.3 considers general assessment principles for electricity networks and section 2.3.1 states "… the Planning Act aims to create a holistic planning regime so that the cumulative effects of different elements of the same project can be considered together. Therefore, the Government envisages that, wherever reasonably possible, applications for new generating stations and related infrastructure should be contained in a single application to the IPC.

85. The applicant has not followed this advice to collaborate with Horizon and prepare a single application. The different legal entities and legislative frameworks would not exclude such collaboration, which could have resulted in an application of reduced cumulative impact.

86. Section 2.3.5 states "… National Grid … are required under section 9 of the Electricity Act 1989 to bring forward efficient and economical proposals in terms of network design".

87. An efficient network in terms of the electricity transmission would be one with minimal transmission losses. The applicant has not selected such an alternative. Efficient in terms of construction, would be a well-managed construction project, and the evidence for this has not been presented.

88. To determine if a network is economical requires selecting a viewpoint from which to examine the proposal. The applicant has chosen to view only the impact on electricity costs to consumers and not value added/destroyed to the local community or indeed all UK stakeholders. Using the applicants view, a buried solution would add only 11p/year to domestic electricity bills. It would also mitigate £500 million value destruction in the immediate community and have lower greenhouse gas emissions.

89. Section 2.4 considers climate change adaptation and section 2.4.1 states "applicants should in particular set out to what extent the proposed development is expected to be vulnerable, and, as appropriate, how it would be resilient to … effects of wind and storms on overhead lines …"

90. The applicant has selected an overhead line solution, which is the most vulnerable of all the alternatives to wind and storms.

91. Section 2.5 considers good design and section 2.5.2 states "Proposals for electricity networks infrastructure should demonstrate good design in their approach to mitigating the potential adverse impacts which can be associated with overhead lines".

92. Minimal, in any, considerations have been given to mitigation of the adverse landscape impacts.

93. Section 2.8 considers landscape and visual and 2.8.2 states "Government does not believe that development of overhead lines is generally incompatible in principle with developers' statutory duty under section 9 of the Electricity Act to have regard to amenity and to mitigate impacts"

94. This point is accepted as it is entirely feasible to develop overhead lines in areas already significantly blighted by other developments, but in Anglesey the focus should be on removal of existing overhead lines rather development of new ones.

95. Section 2.8.2 also states "new above ground electricity lines, whether supported by lattice steel towers/pylons or wooden poles, can give rise to adverse landscape and visual impacts, dependent upon their scale, siting, degree of screening and the nature of the landscape and local environment through which they are routed … at particularly sensitive locations the potential adverse landscape and visual impacts of an overhead line proposal may make it unacceptable in planning terms, taking account of the specific local environment and context".

96. These points are entirely agreed with.

97. Section 2.8.3 states “Sometimes positive landscape and visual benefits can arise through the reconfiguration or rationalisation of existing electricity network infrastructure.”

98. The applicant has not taken any advantage of this to rationalise the existing network, even where this passes through, or is significantly detrimental to the visual amenity of, the AONB. The applicant has, however, used sections of the existing network to carry the new overhead line.

99. Section 2.8.4 states “Where possible, applicants should follow the principles below in designing the route of their overhead line proposals and it will be for applicants to offer constructive proposals for additional mitigation of the proposed overhead line. While proposed underground lines do not require development consent under the Planning Act 2008, wherever the nature or proposed route of an overhead line proposal makes it likely that its visual impact will be particularly significant, the applicant should have given appropriate consideration to the potential costs and benefits of other feasible means of connection or reinforcement, including underground and sub-sea cables where appropriate”.

100. The applicant has considered both subsea and subsurface connections, but rejected both on grounds of cost to consumer, not cost to community, even though the visual impact of overhead lines will be particularly significant.

101. Section 2.8.6 presents the Holford Rules.

102. “avoid altogether, if possible, the major areas of highest amenity value, by so planning the general route of the line in the first place”

103. The first route was not selected by the applicant, but by the CEGB, the successor organisation, in 1963. There is documented evidence in the Anglesey archives to the opposition to the location of pylon towers from 1962 and 1963, but ultimately the Secretary of State over-ruled all objection. The result being a line passing through, and significantly impacting the visual amenity of, the AONB. Mistakes of the past should not be used to justify future decisions.

104. “avoid smaller areas of high amenity value or scientific interest by deviation”

105. The applicant has avoided SSSIs, and similar designated areas, but the entire Anglesey landscape is an area of high amenity value.

106. “choose the most direct line, with no sharp changes of direction”.

107. This is largely outside the control of the applicant by following the existing line, although the route is mainly direct.

108. “choose tree and hill backgrounds in preference to sky backgrounds wherever possible. When a line has to cross a ridge, secure this opaque background as long as possible, cross obliquely when a dip in the ridge provides an opportunity. Where it does not, cross directly, preferably between belts of trees”.

109. This is extremely difficult to follow on Anglesey which is a low undulating plateau with very sparse, small, trees due to the weather conditions.

110. “prefer moderately open valleys with woods where the apparent height of towers will be reduced, and views of the line will be broken by trees”.

111. The main valley systems on Anglesey, largely formed by glacial meltwater, run NE-SW while the proposed development runs NW-SE-ie perpendicular to the valleys.

112. “where country is flat and sparsely planted, keep the high voltage lines as far as possible independent of smaller lines, converging routes, distribution poles and other masts, wires and cables, so as to avoid a concentration of lines or “wirescape””.

113. Anglesey already has a high voltage overhead line, low voltage overhead lines, overhead telecoms lines and wind turbines. An additional overhead line will only add to the “wirescape”.

114. “approach urban areas through industrial zones, where they exist; and when pleasant residential and recreational land intervenes between the approach line and the substation, carefully assess the comparative costs of undergrounding.”

115. The entirety of Anglesey is “pleasant residential and recreational land” due to the highly dispersed settlement, a feature of the rural Welsh countryside for historical and cultural reasons, and is extensively used for recreation by residents and tourists. As such, an underground solution is entirely appropriate.

116. Section 2.8.8. state “Government expects that … while the development of overhead lines will often be appropriate, it recognises that there will be cases where this is not so. Where there are serious concerns about the potential adverse landscape and visual effects of a proposed overhead line, the IPC will have to balance these against other relevant factors, including the need for the proposed infrastructure, the availability and cost of alternative sites and routes and methods of installation (including undergrounding)”.

117. A subsea or subsurface solution is entirely feasible. Subsurface will cost approximately £400 million more than overhead lines but will mitigate approximately £500 million in community costs. It would add 11 p/year to domestic electricity bills (0.02%) which is considered affordable.

118. Section 2.8.9 states “each project should be assessed individually on the basis of its specific circumstances and taking account of the fact that Government has not laid down any general rule about when an overhead line should be considered unacceptable. The IPC should, however only refuse consent for overhead line proposals in favour of an underground or sub-sea line if it is satisfied that the benefits from the non-overhead line alternative will clearly outweigh any extra economic, social and environmental impacts and the technical difficulties are surmountable”.

119. The applicant has used publicly available engineering norms to estimate costs of subsurface and subsea solutions, but has not presented location specific estimates.

120. The case for a subsurface solution are clear on economic, social and environmental grounds (lower cost to the consumer community, affordable).

121. Section 2.8.9 refers to “the landscape in which the proposed line will be set, (in particular, the impact on residential areas, and those of natural beauty or historic importance such as National Parks, AONBs and the Broads)”.

122. The landscape, while largely agricultural, is also widely residential (for historical and cultural reasons). The proposed development will significantly impact visual amenity in locally designated areas as well as within and without the AONB.

123. Section 2.8.9 also refers to “additional cost of any undergrounding or sub-sea cabling (which experience shows is generally significantly more expensive than overhead lines …)”.

124. This point is accepted although the additional cost is comparable to the additional community costs which will be borne only by the residents of Anglesey, while the extra cost of undergrounding will be shared by England and Wales.

125. The potential additional cost of surface laying cables underneath cloddiau is not known and the applicant has not explored this option. Cloddiau are a feature of the Anglesey, North Wales and Cornwall landscape and consist of banks of earth faced with dry stone walling, often with shrubs/hedging on top, most often traditionally used for field boundaries, but also used along the A55 on Anglesey. Use of cloddiau to “surface bury” cables would be particularly sensitive to, and in keeping with, the Anglesey countryside.

126. Section 2.8.10 states “… the main opportunities for mitigating potential adverse landscape and visual impacts of electricity networks infrastructure are: consideration of network reinforcement options … and selection of the most suitable type and design of support structure …”

127. Network reinforcement may be useful, but will not remove the applicants stated need for a “standby” connection, and an alternative design of pylon would introduce a mix of pylon styles into the environment unless the existing line were to be entirely replaced, which the applicant is not proposing.

128. Section 2.8.11 states “There are some more specific measures that might be taken … Landscape schemes, comprising off-site tree and hedgerow planting, [and] Screening … localised planting in the immediate vicinity of residential properties and principal viewpoints”.

129. No such measures have been proposed by the applicant, although it is doubtful that these would be particularly effective, as, from many of the vantage points the proposed line is visible for many miles as it passes over exposed ridges, beyond which are extensive views of the Snowdonia National Park.

130. Section 2.10 addresses electric and magnetic fields (EMFs) and sections 2.10.6 – 2.10.8 state “The balance of scientific evidence over several decades of research has not

proven a causal link between EMFs and cancer or any other disease … The Department of Health's Medicines and Healthcare Products Regulatory Agency (MHRA) does not consider that transmission line EMFs constitute a significant hazard to the operation of pacemakers … There is little evidence that exposure of crops, farm animals or natural ecosystems to transmission line EMFs has any agriculturally significant consequences."

131. This is clearly a very emotive topic, but Anglesey does have some relatively unique circumstances, namely parallel overhead lines with houses between in an area with high background radon levels. Whether the recommended exposure levels account for such conditions is not known.

132. Section 2.10.11 states "Industry currently applies optimal phasing to 275kV and 400kV overhead lines voluntarily wherever operationally possible, which helps to minimise the effects of EMF. The Government has developed with industry a voluntary Code of Practice … that defines the circumstances where industry can and will optimally phase lines with a voltage of 132kV and above. Where the applicant cannot demonstrate that the line will be compliant with the Electricity Safety, Quality and Continuity Regulations 2002, with the exposure guidelines as specified in the Code of Practice on compliance, and with the policy on phasing as specified in the Code of Practice on optimal phasing then the IPC should not grant consent."

133. Voluntary compliance with a voluntary code of practice does not feel like a robust compliance mechanism, particularly when section 2.10.15 only states "optimal phasing of high voltage overhead power lines is introduced wherever possible and practicable".

3 Bending the Holford Rules

This chapter was originally written for submission to the Planning Inspectorate for the examination of the North Wales Connection project.

> *The North Wales Connection project would have built approx. 100 new pylons over 30 km of Anglesey countryside, tunnelled under the Menai Strait for 4 km before five more pylons to link Wylfa substation to Pentir substation. The new line would have been roughly parallel to the existing line built in the mid 1960's.*
>
> *A total of 821 people/organisations registered with the Planning Inspectorate as Interested Parties. This included 790 members of the public, of whom 2 argued in favour of pylons, 9 were neither for or against while 779 were against. Less than 80 objected to the nuclear power station. This statistic alone speaks volumes.*

It provides details of how NGET selectively apply their own rules to arrive at a safe, deliverable outcome for their business and not the outcome desired by the public and local community.

3.1 Summary

134. This chapter has been written to review National Grid's plans for the North Wales Connection against the Holford Rules.

135. The Holford Rules provide guidance for the routeing of overhead transmission lines.

136. Of the seven rules, NGET have followed one. The other six lead to the conclusion that the North Wales Connection (NWC) should be underground and the existing line removed.

137. The Holford Rules simply do not work with the Anglesey geology/geomorphology, the rural north Wales settlement pattern and the fact that Anglesey is a low, flat, undulating island.

3.2 Background

138. For simplicity:

> NGET = National Grid Electricity Transmission plc (the applicant)
>
> SPN = Scottish Power Networks
>
> NWC = North Wales Connection project
>
> EN-5 = National Policy Statement for Electricity Networks Infrastructure

139. Lord Holford, advisor to the Central Electricity Generating Board (CEGB), a predecessor organisation to National Grid, developed a series of planning guidelines in 1959, which have subsequently become known as the "Holford Rules". National Grid revised these rules in the 1990's, and they are incorporated in National Policy Statement EN-5 at section 2.8.6.

140. The Holford Rules form the basis upon which the decision making process of siting overhead transmission (OHT) lines, and minimising the potential landscape impact of such infrastructure.

141. The Rules are used by National Grid in England and Wales, and Scottish Power Networks and Scottish Hydro in Scotland.

142. The rules are designed to be used as a hierarchy, but it should be noted that they are designed for the routeing of overhead lines once the decision to use overhead lines has been taken, they do not justify the use of overhead lines.

3.3 Review of NGET's proposal against the Holford Rules

143. Rule 1 - Avoid altogether, if possible, the major areas of highest amenity value, by so planning the general route of the first line in the first place, even if the total mileage is somewhat increased in consequence.

144. NGET provide the following supplementary notes for England and Wales:

145. "Investigate the possibility of alternative routes, avoiding if possible the areas of the highest amenity value. The consideration of alternative routes must be an integral feature of environmental statements. Areas of highest amenity value are:

- Areas of Outstanding Natural Beauty
- National Parks
- Heritage Coasts
- World Heritage Sites"

146. However in Scotland this same rule is interpreted more stringently with SPN providing the following notes:

147. "This is the basic guidance that multiple routes should be considered as an integral part of environmental statements. Rule 1 also implies an obligation to protect areas designated for, or otherwise recognised as being of the highest amenity value. This rule also obliges consideration of alternative routes that avoid such protected sites, even if the proposal is direct replacement of existing structures and transmission lines that presently run through protected areas. Areas to be avoided include:

- Schedule of Ancient Monuments
- Protected Coastal Zone Designations
- Special Area of Conservation
- Special Protection Area
- Ramsar Site

- National Scenic Areas
- National Parks
- National Nature Reserves
- Sites of Special Scientific Interest (SSSI)
- Listed Buildings
- Conservation Areas World Heritage Sites (non-statutory designation)
- Historic Gardens and Designed Landscapes (non-stat designation)"

148. It is interesting that the NGET list is definitive whereas the SPN list is suggestive, both interpreting the same "rule".

149. NGET's plan for the NWC is to mainly "parallel" the existing line. This first route was not selected by NGET, but by the CEGB, the successor organisation, in 1963. There is documented evidence in the Anglesey Archives (available if required) to the opposition to the location of pylon towers from 1962 and 1963, but ultimately the Secretary of State in Westminster over-ruled all objection. The result being a line passing through, and significantly impacting the visual amenity of, the AONB.

150. The Anglesey AONB was designated in 1966 and confirmed in 1967. It was designated to protect the aesthetic appeal and variety of the island's coastal landscape and habitats from inappropriate development. It covers most of Anglesey's 201 kilometre coastline and also includes Holyhead Mountain and Mynydd Bodafon.

151. The AONB was designated after the existing line had been approved and constructed. Had the designation been in place earlier, it is highly unlikely that the existing line would have been approved, as it significantly impacts on views of the AONB (eg Mynydd Bodafon from Capel Coch), views of the Snowdonia National Park and Llyn AONB, views from the AONB (e.g. from Mynydd Bodafon over Cors Erddreiniog) and cuts through the AONB at Llanfairpwll and runs alongside the Grade II listed Britannia Bridge.

152. It is useful to note that NGET have used Rule 1 to justify buried cables under the Glaslyn estuary near Porthmadog due to the visual impact from within the Snowdonia National Park and impact on the setting of a listed building. The cable route is not in the National Park or an AONB and only passes through a SSSI at the river itself.

153. The existing line should not be permitted to be "repurposed" for Wylfa Newydd export, the existing pylon towers should not be permitted to carry any of the new connection and the line should not be considered "background" to help justify the proposed new line.

154. Rule 2 - Avoid smaller areas of high amenity value, or scientific interests by deviation; provided that this can be done without using too many angle towers, ie the more massive structures which are used when lines change direction.

155. Again NGET provide notes: "Some areas (e.g. Site of Special Scientific Interest) may require special consideration for potential effects on ecology (e.g. to their flora and fauna). Where possible choose routes which minimise the effects on the setting of areas of architectural, historic and archaeological interest including Conservation Areas, Listed Buildings, Listed Parks and Gardens and Ancient Monuments".

156. And again, the guidance in Scotland is more stringent: "Whilst smaller areas of amenity value may not be encompassed in designated sites as listed above, they should also be avoided where possible. Effects on the settings of historic buildings and other cultural heritage features should be minimised".

157. The applicant has avoided SSSIs, and similar designated areas, for the new pylons, but the entire Anglesey landscape is an area of high amenity value, which has contributed to the whole landscape being recognised by UNESCO as a GeoPark. There are no proposals to remove pylons from within SSSI's.

158. Rule 3 - Other things being equal, choose the most direct line, with no sharp changes of direction and thus with fewer angle towers.

159. NGET's notes on this rule states the obvious: "Where possible choose inconspicuous locations for angle towers, terminal towers and sealing end compounds".

160. However SPN's notes, interpreting the same rule, go further: "The fewer more massive structures used to support the transmission lines, the less impact upon the amenity of the area. However, it is also suggested that in flat or open landscapes, support poles or towers should not be erected in a straight line, as this increases the visual intrusion due to an artificially linear feature being introduced into the landscape".

161. The existing line consists of three long stretches of "an artificially linear feature", and this would only be emphasised should a second, parallel line be constructed.

162. As an aside, it is common to use existing linear features such as roads and railways, or a transport corridor, as a transmission corridor, but this was not followed by the CEGB and is not being proposed by NGET.

163. Rule 4 - Choose tree and hill backgrounds in preference to sky backgrounds wherever possible; and when the line has to cross a ridge, secure this opaque background as long as possible and cross obliquely when a dip in the ridge provides an opportunity. Where it does not, cross directly, preferably between belts of trees.

164. Rule 5 - Prefer moderately open valleys with woods where the apparent height of towers will be reduced, and views of the line will be broken by trees.

165. Both NGET and SPN give similar notes on these two rules.

166. NGET "Utilise background and foreground features to reduce the apparent height and domination of towers from pan viewpoints. Minimise the exposure of numbers of towers on prominent ridges and skylines. Where possible avoiding cutting extensive swathes through woodland blocks and consider opportunities for skirting edges of copses and woods. Protecting existing vegetation, including woodland and hedgerows, and safeguard visual and ecological links with the surrounding landscape".

167. SPN "Rules 4 and 5 suggest that both background and foreground features be utilised to mask or minimise the appearance and impact of the infrastructure, where the existing ground features afford opportunity. The exposure of lines and pylons on ridges should be minimised. Where possible, follow areas of open space, running alongside (but not though) existing wooded areas, including skirting edges of copses and small plantations. Where there is no reasonable alternative, to cutting through woodland, the Forestry Authority Guidelines should be followed".

168. Following these rules is extremely difficult to do on Anglesey as it is a low undulating plateau with very sparse, small, trees due to the weather conditions. There are some small forests, but these are nowhere near the existing and proposed lines.

169. The British Geological Survey[4] describes the importance of the whole of the Anglesey landscape, which led, in part, to the UNESCO recognition:

- " … Anglesey represents one of the key areas in the UK for understanding the large-scale tectonic processes that eventually led to the formation of southern Britain, and as such**, is widely considered to be a 'classic' area of British geology. Its classic status also extends to the glacial landforms** …"

- "During the last ice age … Britain and Ireland were plunged into 'deep freeze' with a large part of the land and surrounding seas being covered in a thick layer of ice and snow known as the British and Irish ice sheet."

- "Anglesey occupied a unique position beneath this ice sheet, occurring close to the eastern margin of a fast flowing corridor of ice …"

- "This ice stream … transported ice from its source in south-west Scotland, through the Irish Sea and across Anglesey, to as far south as the Isles of Scilly."

- "The low lying, gently rolling hills of Anglesey preserve the unique 'footprint' left on the landscape by the ice stream. The landforms, such as egg-shaped drumlins, and glacial sediments left as the ice retreated provide a record of the processes occurring beneath the Irish Sea ice stream."

[4] https://www.bgs.ac.uk/research/ukgeology/Wales/angleseyNorthWales.html

170. The main valley systems on Anglesey, such as e.g. Traeth Coch – Ceint - Malltraeth, were largely formed by glacial meltwater running NE-SW as the ice sheets retreated at the end of the last ice age. The current small rivers and streams that now flow through these valley systems being too small to create valleys of this scale.

171. The NGET proposal completely disregards Rule 5 with the proposed development running NW-SE, that is, perpendicular to the valley systems, with extensive views of "arrow straight" pylons visible for miles as the line crosses ridges and over drumlins.

172. Rule 6 - In country which is flat and sparsely planted, keep the high voltage lines as far as possible independent of smaller lines, converging routes, distribution poles and other masts, wires and cables, so as to avoid a concentration or 'wirescape'.

173. Both NGET and SPN provide similar notes to this rule, which is the main rule NGET use to justify a second parallel line.

174. NGET: "In all locations minimise confusing appearance. Arrange wherever practicable that parallel or closely related routes are planned with tower types, spans and conductors forming a coherent appearance; where routes need to diverge, allow where practicable sufficient separation to limit the effects on properties and features between the lines".

175. SPN: "In all locations, minimise confusion by mixing cable and support types. Avoid concentrations where possible, in order to avoid the cable runs dominating the landscape character. Wherever possible and practicable, parallel or closely related routes should be arranged to provide a coherent appearance. Where diverging routes allow, sufficient separation should be planned to limit the effects on properties and features within the cable lines".

176. Complete disregard for Rules 1 – 5 leaves NGET little room to manoeuvre. Anglesey already has a high voltage overhead line, low voltage overhead lines, overhead telecoms lines and wind turbines. An additional overhead line will only add to the "wirescape". Some re-routeing of lower voltage lines is planned, but these are small scale works in the immediate vicinity of the proposed line.

177. Rule 7 - Approach urban area through industrial zones, where they exist; and when pleasant residential and recreational land intervenes between the approach line and the substation, go carefully into the comparative costs of the undergrounding, for lines other than those of the highest voltage.

178. NGET and SPN provide similar notes, although yet again, Scotland appears to be more stringent with regard to preserving the visual environment.

179. NGET "When a line needs to pass through a development area, route it so as to minimise as far as possible the effect on development. Alignments should be chosen after consideration of effects on the amenity of existing development and on proposals for new development. When siting substations take account of the effects of the terminal towers and line connections that will need to be made and take advantage of screening features such as ground form and vegetation".

180. SPN "Should lines be required to pass through development areas, the course should be carefully selected to minimise the effects on the development as far as is practicably possible. Undergrounding should be considered as a realistic alternative in order to minimise impact where there is little alternative. Alignments should be chosen after consideration of the effects of the infrastructure on proposals for new development. When siting sub-stations, the effects of terminal towers should be considered in order to take advantage of screening opportunities such as ground form and vegetation".

181. Anglesey has highly dispersed settlement. A common feature being one or two farms (typically Fawr/Fach or Uchaf/Isaf) being the only record of a once medieval township, quite unlike the English countryside with nucleated villages dating from Domesday. This is most likely due to the inheritance laws of Hywel Dda, which led to the sharing of estates:

> *"On the death of a landowner (priodawr) his immovable estate (land) passed in joint tenancy (cytir) to his sons. Then the youngest son partitioned (cyfran) the land equally, and each brother took his share. Illegitimate sons were entitled to shares equal to those of legitimate sons, provided they had been acknowledged by the father"*[5]

182. Although Welsh law (the laws of Hywel Dda) were replaced with English law following the conquest, culture, custom and practice maintained this tradition into the late medieval period and resulted in the now highly dispersed settlement pattern. This is also the reason why many Anglesey parish churches often have no settlement nearby.

183. Currently 15% of the Welsh population live in the sparsest rural areas compared with only 1.5% in England.

184. The entirety of Anglesey is "pleasant residential and recreational land" and is extensively used for recreation by both residents and tourists. As such, an underground solution is entirely appropriate. To despoil this with the existing pylon line, and compound that with a new line, cuts through the historic and cultural fabric that makes Anglesey the place that it is.

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[5] "Some Medieval Rural Settlements in North Wales", G. R. J. Jones, Transactions and Papers (Institute of British Geographers) No. 19 (1953), pp. 51-72 and "Medieval Anglesey", A. D. Carr, Anglesey Antiquarian Society, 1982 provide useful background reading

4 Unacceptable impact on local economy

This chapter was originally written for submission to the Planning Inspectorate for the examination of the North Wales Connection project.

> *The North Wales Connection project would have built approx. 100 new pylons over 30 km of Anglesey countryside, tunnelled under the Menai Strait for 4 km before five more pylons to link Wylfa substation to Pentir substation. The new line would have been roughly parallel to the existing line built in the mid 1960's.*
>
> *A total of 821 people/organisations registered with the Planning Inspectorate as Interested Parties. This included 790 members of the public, of whom 2 argued in favour of pylons, 9 were neither for or against while 779 were against. Less than 80 objected to the nuclear power station. This statistic alone speaks volumes.*

It provides further details of how unacceptable NGETs overhead line assets are to the general public and the consequent impact on the local economy.

4.1 Summary

185. NGET conducted a survey of visitors (tourists) in 2016 and include the results in Chapter 17 of the DCO. The aim being to determine the attitude of visitors to the second proposed line of pylons in order to evaluate the socio-economic impact.

186. The results indicate that the proposed line poses a significant risk to the tourism industry on Anglesey. NGET go to some lengths to dismiss these findings and eventually conclude that the impact will be minimal. However, the evidence they use to do this contains significant flaws and differences to the Anglesey situation.

187. Intuitively, a second line of pylons cannot have a positive impact on tourism, and at best will have no impact. A better way to consider the socio-economic impact would be to estimate the magnitude of the potential financial risk and the probability of that risk occurring.

188. A conservative estimate puts the net present value of lost tourism at £300 million.

4.2 DCO document 5.17 - Environmental Statement Chapter 17 Socio-economics

189. Chapter 17 addresses tourism in sections 7.4.22 – 7.4.46, 9.4.1 – 9.4.5, 9.5.3 – 9.5.7, 9.8.1 – 9.8.19, 9.9.1 – 9.9.12, 10.2.3 – 10.2.6, 10.3.18 – 10.3.43 and section 11 tables 17.28 and 17.30.

190. Section 7.4.22-7.4.46 presents the results of the visitor survey conducted in 2016. Highlights of the survey are:

- the most commonly cited reason for visiting Anglesey was the 'Beautiful scenery/views/natural landscape', followed by 'Relaxing /peaceful /tranquil /quiet';
- other common responses were 'Been here before/come here often' and 'Meeting/visiting with friends/family';

- the majority of respondents (77%) said that the construction process for additional pylons would make no difference to the likelihood of them revisiting. A similar proportion (78%) reported that the construction process would make no difference to the type of activities undertaken in the area;

- for those that would be less likely to visit during construction, the main concerns were: i) that construction traffic would hinder access to and around the island; and ii) construction would be a blot on the landscape (and/or noisy);

- the majority of respondents (84%) said that the presence of additional pylons/OHLs (during operation) would make no difference to the likelihood of them revisiting. The main reasons cited for it making no difference were that i) it wouldn't stop them coming because they like the place or are visiting family, and ii) it doesn't bother them or they take no notice;

- for those that would be less likely to visit due to the presence of additional pylons/OHL, the main concern was that the infrastructure would be a blot on the landscape (and/or noisy);

- the majority of respondents (84%) also reported that additional pylons/OHLs (during operation) would make no difference to the type of activities undertaken in the area. The number of those who responded that additional pylons would influence activities 'a little' or 'a lot' was relatively small [10% of respondents in total, some giving more than one reason]. The main concerns raised were: i) blot on the landscape; and ii) will visit other areas to avoid the pylons.

191. From this survey it can be concluded that potentially 23% (during six years of construction) to 16% (during 60 years of operation) of tourists would be inhibited from visiting Anglesey by the presence of more pylons, as these would be 'a blot on the landscape'.

192. The very terms used in the NGET visitor questionnaire (Beautiful scenery/views/natural landscape) are all broad, expansive, 'wide screen' terms, implying that what visitors appreciate and value about Anglesey is not point destinations and attractions, but the totality of the countryside and the "Anglesey offer".

193. Section 9.4 (9.4.1-9.4.5) considers amenity effects on tourist attractions and recreational resources and concludes that Plas Newydd and Veynol Park are the only "high value" tourist attractions and will not be impacted.

194. The approach used gives no recognition to the "beautiful scenery, views, natural landscape" that are "relaxing, peaceful, tranquil, quiet" identified as the main reasons for visiting Anglesey.

195. Sections 9.5.3 – 9.5.7 consider amenity effects on tourism accommodation and section 9.5.5. states "Thirteen tourism accommodation businesses may experience a major or moderate adverse secondary effect during operation of the Proposed Development.

The nature of these businesses is such that views are likely to be an important factor in the attractiveness of their 'offer'. As such, it is considered likely that they could be affected by adverse secondary effects (loss of trade)."

196. Section 9.5.6 states "Given that there are several hundred tourism accommodation facilities … the relatively small number of facilities affected means that the overall effect on the tourism accommodation sector in Anglesey and Gwynedd is assessed as not significant."

197. While it is encouraging the survey does recognise that the presence of more pylons would lead to significant "loss of trade", again the approach taken totally ignores the key findings ('Beautiful scenery/views/natural landscape') and assumes that only "receptors" in the immediate vicinity of the pylons will be impacted.

198. Sections 9.8.1 – 9.8.19 consider the impact during construction on the availability of tourist accommodation. It is noted that camping and caravans will play a significant role in housing the temporary workforce. A considerable effect in this sector will be the cumulative effect of the NGET and Horizon workforce, and it is not clear from the analysis if the following points have been considered:

- most, if not all, caravan sites on Anglesey have restricted, seasonal access and are not available for 12 months of the year;
- the majority of caravan sites are "statics" not "tourers", with the caravans "owner occupied", that is, the caravan is owned by the visitors who pay an annual site fee to the caravan site owner;
- most, if not all, "static sites" have clauses in the site contracts prohibiting sub-letting, and in some cases use of the caravan other than by immediate family of the owner.

199. Sections 9.9 addresses the impacts on visitor numbers based on the visitor survey conducted in 2016. Section 9.9.2 states "the majority of respondents (84%) said that the presence of additional pylons/OHLs (i.e. during operation) would make no difference to the likelihood of them revisiting", which implies that for a significant number (16%) the presence of more pylons would make a difference.

200. Section 9.9.5 states "When asked about the construction process … 18% … reported that the additional pylons and power lines would make them less likely to visit … again [due to] disruption to access caused by increased traffic." Section 9.9.6 poorly attempts to dismiss these concerns and was clearly written by someone not familiar with Anglesey traffic on small lanes in summer.

201. Section 9.9.7 states "… visitors who said they would be less likely to return during operation, the most common reason was that the pylons would be "a blot on the landscape"" and then attempts to dismiss these concerns. It does not seem to be appreciated that the majority of people inherently dislike pylons, don't want to see them, and don't want them to exist where they take their vacations.

202. Section 9.9.8 discusses the locations used for the survey and states "Visitors to these locations are already influenced by the existing OHL and therefore the Proposed Development would not be a new element within views". This implies that visitors are quite happy to have the existing pylons in their holiday destination, and would be similarly happy to have more, which the key findings of the survey (beautiful scenery, views, natural landscape) clearly dispute.

203. Section 9.9.8 goes on to state, quite randomly "The Proposed Development would not be visible from Holyhead or Anglesey Airport, and would only be minimally visible from the railway (… the train is … passing at high speed)". Er … !

204. Section 10.2.3 – 10.2.6 pulls together the various parameters considered and section 10.2.5 states "no significant effects are anticipated for any of the tourism parameters considered in the assessment. In conclusion, no significant cumulative intra-project effects on the tourism sector in Anglesey and Gwynedd are expected.". Again, the key finding of the survey, "The most commonly cited reason for visiting Anglesey was the 'Beautiful scenery/ views/ natural landscape', followed by 'Relaxing/ peaceful/ tranquil/ quiet' have been ignored.

205. Sections 10.3.18 – 10.3.43 looks at the cumulative impact of the Proposed Development and a number of other proposed projects. It is no surprise that the Horizon proposals dominate these. However, while the Horizon development will have a lengthy construction phase, it will result in a "point asset" (which may be well screened) the NGET development will result in an extensive "linear asset" which will not be screened at all. Impact on the "most commonly cited reason for visiting Anglesey" namely "beautiful scenery/ views/ natural landscape" will be dominated by the proposed second, parallel, line of pylons, not by the power station.

4.3 Dismissal of the visitor survey findings

206. NGET go to some lengths to dismiss the negative findings of the visitor survey stating at section 9.9.9 "Both ex-ante (before) and ex-post (after) evidence for effects of OHLs on tourism is relatively limited. However, the literature identified … covers numerous projects across the country in varying geographies and environments and over an extensive period … the evidence indicates that there is a tendency for ex-ante appraisal to overestimate the likely negative impacts on tourism, with the ex-post evidence indicating that the extent of negative effects upon visitor numbers and their behaviour is typically less than anticipated".

207. The literature they cite are:

- "Effect of major infrastructure projects on socioeconomic factors (2014)", produced by ERM & Ipsos MORI for NGET;
- "Scotland/Northern Ireland interconnector ex-post tourism impact assessment (2006)", produced by Tym & Partners for Scottish & Southern Electricity;
- "Second Yorkshire line – ex-post tourism assessment (2011)", produced by Tym & Partners for NGET.

208. None of these are independent, peer reviewed, literature publications.

4.3.1 Effect of major infrastructure projects on socioeconomic factors (2014)

209. NGET have a report available on their project website that looks at the socio-economic impacts of their projects: “A study into the effect of National Grid major infrastructure projects on socioeconomic factors (2014)”. The report was researched and written by ERM and Ipsos MORI, leading consultancies in their respective fields.

210. To quote NGET’s Q&A factsheet, the report found “… that 93 percent of people felt there had been no negative impact on their business as a result of new infrastructure, and 83 percent of people felt there had been no impact on the local area as a result of new infrastructure.”

211. But is this study representative of the type of impact that the North Wales Connection project could have on the economics of Anglesey?

212. The following table presents a summary of the infrastructure projects the study considered, which included:

- five electricity (pylon) and two gas transmission projects;
- five completed, two proposed and two “control” (pretend) projects.

213. Also presented are whether:

- the projects resulted in above ground assets – only completed electricity (pylon) projects can do this;
- the project were conducted in what the Office for National Statistics (ONS) describes as a “holiday hotspot”

Project	Type	Stage	Resulted in above ground assets?	Conducted in "holiday hotspot"?	Comparable to Anglesey?	When was the project?
South Humber Bank	Electricity	Completed	Yes	No	No	1992
Norton to Spennymoor	Electricity	Completed	Yes	No	No	2011-2012
Hinkley to Melksham	Electricity	Completed	Yes	Yes	Yes	1960's
Felindre to Tirley	Gas	Completed	No	Yes	No	2007-2008
Wormington to Sapperton	Gas	Completed	No	Yes	No	2010
Hinkley C Connection	Electricity	Proposed	No	Yes	No	N/A
Bramford to Twinstead Tee	Electricity	Proposed	No	Yes	No	N/A
Chilterns Area	N/A	Control	No	No	No	N/A
Yorkshire Dales Area	N/A	Control	No	Yes	No	N/A

214. Only one project can be seen to be comparable to Anglesey, the Hinkley to Melksham pylon line, and that project had been completed at least 40 years earlier and only

involved a single line. The results were gathered from 188 people and 33 businesses (of which only seven existed when the project took place.

215. This study, therefore, contains very little (if any) data of direct relevance to Anglesey and the NWC, and should not be used to predict future socio-economic impacts.

4.3.2 Holiday Hotspots

216. The Office of National Statistics (ONS)[6] found that a "holiday hotspot" has the following characteristics, compared to England and Wales averages:

- higher proportions of jobs in accommodation for visitors;
- higher percentages of main jobs in tourism and tourism enterprises;
- higher percentages of inbound trips for a holiday purpose.

217. For example:

- Gwynedd has the highest percentage of main jobs in tourism (14.9%) followed by Anglesey (14.0%);
- Cornwall has the highest percentage of visits for a holiday (61.4%) followed by Pembrokeshire (57.9%) and Anglesey (53.3%);
- Cardiff has the highest spend per day (£50.08), followed by Anglesey (£48.92), far higher than Greater London (£38.04).

218. The term "holiday hotspot" is describing the socio-economic importance of tourism to that area. It describes what is currently being achieved.

4.3.3 Scotland/Northern Ireland interconnector ex-post tourism impact assessment (2006)

219. This was produced by Tym & Partners for Scottish & Southern Electricity, the transmission operator in that part of Scotland.

220. The interconnector links Northern Ireland's electricity generation systems to Scotland and the national grid.

221. The development process went through the following stages, during which it became known to the general public and wider tourism market:

- October 1994-March 1995: Public Local Inquires in Scotland and Northern Ireland;

[6] Sub-National Tourism: A spatial classification of areas in England and Wales to show the importance of tourism, at county and unitary authority level, 2011 to 2013 (2015)

- April 1996: Public Local Enquiry report submitted to Secretary of State;
- October 1997: consent to build the Interconnector granted by the Scottish Office;
- 2000-2002: construction phase;
- April 2002: Interconnector entered full commercial operation;
- Post April 2002: ongoing commercial operation.

222. The report studied businesses in the tourism sector and concluded:

- Tourism businesses are greatly affected by the weather, macro-economic cycles, world events (e.g. terrorism, war), national events (e.g. sports) etc;
- "… the overhead transmission line has exerted only a marginal negative impact on local tourism related businesses, with only 2% of respondents reporting a minor or medium negative impact … the possible effects from the line … are more likely as a result of other contributory factors … largely the weather;
- " the overhead transmission line interconnector has had an inconsequential impact on the tourism industry in Ayrshire and Arran".

223. However, the report has some limitations, and differences from the visitor survey conducted by NGET and presented in the DCO:

- it did not involve speaking to, surveying or contacting any tourists (only businesses that may be used by tourists) the key consumers of the "Anglesey offer". As such, the report did not gather or analyse any "leading indicators" of performance, only "lagging indicators" (see below);
- the business impact analysis included businesses that were not in operation at key stages of the project, and businesses some distance (10 km) from the development;
- no attempt was made to quantify the financial impact of the development, e.g. the regional revenue generated through tourism compared to projections of revenue had the development not taken place;
- part of the survey was conducted "on the mainland" rather than a contained vacation environment (such as Anglesey);
- no analysis was performed on businesses that had ceased trading to examine if the pylons had contributed to this.

224. Note – "leading" and "lagging" performance indicators stem from the work of Kaplan & Norton (1996)[7]. The hypothesis, now widely accepted and used in business, being that only by using both leading and lagging indicators can a true assessment of performance be attained.

225. This report, while seemingly to present a "positive" outcome ("… only a marginal negative impact …") fails to determine what the socio-economic impact of the pylon line actually was.

4.3.4 Second Yorkshire line – ex-post tourism assessment (2011)

226. Another report produced by Tym & Partners, this time for NGET, the transmission operator in England and Wales.

227. The Second Yorkshire Line (400kV OHL and associated works) is 80.3 km long running from east of Middlesbrough through North Yorkshire to north of York. It includes a 5.3 km underground section and pylons. It was granted consent in 1998 following two Public Inquires.

228. Again, only businesses that may be used by tourists (not actual tourists) were surveyed, looking at the following phases:

- Pre construction: 1999-2000;
- Construction period: 2001-2002; and
- Post construction: 2003 – 2007.

229. The report concludes:

- as in the Scottish report, tourism businesses are greatly affected by the weather, macro-economic cycles, world events (e.g. terrorism, war), national events (e.g. sports) etc;
- "… between 1% and 3% of businesses in operation … experienced a negative impact … the impact of the line on tourism is considered to be minor".

230. The report has the same limitations, and differences from the visitor survey conducted by NGET and presented in the DCO, except the data analysis correctly excludes businesses that were not in operation.

231. The report makes the following statement but does not provide any evidence to back up the claim " the business survey focuses on 7.5km route corridor either side of the line … where any adverse business effects are most likely to occur".

[7] "The Balanced Scorecard: Translating Strategy into Action", Harvard Business School Press

232. This report presents a more negative view, but again fails to determine what the socio-economic impact of the pylon line actually was.

4.3.5 Study into the Potential Economic Impact of Wind Farms and Associated Grid Infrastructure on the Welsh Tourism Sector (2014)

233. This report was prepared by Regeneris Consulting and The Tourism Company for the Welsh Government and is not cited by NGET in the DCO. It primarily addresses wind farms but does consider the associated grid infrastructure. It does not reference either of the above reports, even though it was written after these, but does reference peer reviewed, journal articles.

234. The report states

- "… The evidence base for tourism impacts of associated infrastructure is far less developed than that for wind farms. The few studies which have addressed the subject have focused on visitors' opinions of pylons, which consistently find that reactions are far more negative than toward wind turbines. This strong feeling toward grid infrastructure presents an increased risk for those areas where new pylons are proposed alongside considerable wind farm development";

- "… there is no evidence that the existing National Grid infrastructure which is concentrated in North and South Wales, often in popular scenic areas, discourages visitors";

- "Nevertheless, the lack of robust evidence means the assessment of the potential impact of the proposed supporting grid infrastructure is particularly challenging. The proposals by National Grid will now see a significant proportion of the connection to the grid buried undergrown … this would reduce the visual impact … and mitigate potential impacts.

235. The key message here being that grid infrastructure (pylons) presents a risk to tourism, even though the (limited) available evidence may not prove this. For an industry where it can be shown there is great volatility due to uncontrollable external factors (weather, economic cycle, world and national events and promotion), this seems to a considered and prudent approach. It may be significant that the authors have chosen not to refer to the two industry sponsored reports referenced by NGET in the DCO.

4.4 Conclusions

236. Based on the information presented by NGET in the DCO it can be concluded that:

- the presence of a second pylon line, and the associated construction (as well as the construction of Wylfa Newydd) should be a considerable "red flag" to the Anglesey tourism sector;

- leading indicators (verbatim transcripts from actual tourists) suggest the impact could be considerable;

- lagging indicators suggest that the actual impact may not be as severe as initially perceived;

- NGET cite limited evidence to claim the impact will be inconsequential, but there are several issues with the rational that leads to this conclusion;

- NGET do not estimate the actual socio-economic impact of their proposals (future performance relative to the "do nothing/no project" scenario).

237. The approach suggested by the Welsh Government report is probably the most considered and prudent, that is, adopt a risk based approach and evaluate the magnitude and probability of the socio-economic impact, and base mitigation strategies on the "most likely" impact.

238. A failure by the Anglesey tourism sector, to achieve its' potential, of just 5%, would help justify the additional cost of undergrounding the connection (see Chapter 6). It is important to consider not just a fall in tourism revenue, but also a failure to increase in line with trends, as socio-economic impacts.

5 Disregarded socio-economic costs

This chapter was originally written for submission to the Planning Inspectorate for the examination of the North Wales Connection project.

> *The North Wales Connection project would have built approx. 100 new pylons over 30 km of Anglesey countryside, tunnelled under the Menai Strait for 4 km before five more pylons to link Wylfa substation to Pentir substation. The new line would have been roughly parallel to the existing line built in the mid 1960's.*
>
> *A total of 821 people/organisations registered with the Planning Inspectorate as Interested Parties. This included 790 members of the public, of whom 2 argued in favour of pylons, 9 were neither for or against while 779 were against. Less than 80 objected to the nuclear power station. This statistic alone speaks volumes.*

It provides details of the socio-economic cost borne by local communities that are excluded from NGETs methodologies which would be included if the Treasury Green Book were followed.

5.1 Summary

239. This chapter has been written to estimate the socio-economic lifetime community costs to the residents of Anglesey. These are estimated at approx. £500 million, a cost that could be entirely mitigated by an incremental expenditure of approx. £400 million to provide an underground solution to the North Wales Connection.

5.2 Socio-economic costs

5.2.1 The value of tourism revenue at risk

240. Anglesey currently receives about £280 million a year in revenue due to tourism.

241. Every visitor will have their own reasons for visiting, be it beaches, walking, fishing etc etc. Part of the attraction is the unspoilt beauty of the open countryside. They come to Anglesey to get away from their day to day urban lives.

242. Adding more pylons cannot improve tourism for Anglesey. At absolute best they will have only a small impact.[8]

243. If the value of tourism fell by 1%, or failed to rise by 1% in line with expectations, over the (NGET assumed) 40 year life of the pylons, £60 million would be lost (assuming current value of tourism revenue, no inflation, 3.5% discount rate). This would obviously be higher over the 60 years Wylfa Newydd plans to generate.

[8] "Study into the Potential Economic Impact of Wind Farms and Associated Grid Infrastructure on the Welsh Tourism Sector" – Feb 2014, Regeneris Consulting Ltd and "A Study into the Effect of National Grid Major Infrastructure Projects on Socio-economic Factors" – Feb 2014, National Grid

244. This does not include the value of “sunk costs” - costs already spent by the IoACC, the Welsh Government, holiday home owners, caravan sites etc in promoting Anglesey and getting tourism to the level it is today.

5.2.2 House value at risk

245. Anglesey has ca 34,000 homes worth on average £128,000 each[9].

246. Reports locally, and in the press, suggest that some homes may be "un-mortgageable" or suffer devaluation of up to 40%.

247. Online valuation sites such as Zoopla use complex algorithms to estimate house values, with an input to these calculations being current market sales value, and average regional value. So if a few houses are highly devalued, on average, all will be devalued.

248. A 1% decrease in value (£1,280 for every home) would reduce the value of the Anglesey housing stock by £43 million.

249. Some houses will be hit very badly, and the owners will probably suffer negative equity. Compensation will not be paid unless the pylon is actually on, or over the property.

5.2.3 Agriculture

250. The impact of pylons on agriculture is real, but difficult to quantify. The primary impacts are:

- land loss at the pylon bases and the restricted zone immediately around the bases;
- restriction of activities that can be conducted immediately below the over-sail lines resulting in increased time to perform certain tasks;
- impacts on animal health and reproduction due to exposure to electric and magnetic fields (EMFs).

251. An estimate of the value of these impacts has not been made.

5.2.4 The socio-economic risk

252. The cost impacts for tourism revenue and house value estimated above are given for a 1% reduction. The probability of this occurring is high, but depending on visitor and vendor behaviour could be as high as 10%. A “most likely”/conservative estimate would be 5%.

253. The “most likely” total socio-economic costs, over the 40 year project lifetime is thus approx. £500 million. Obviously this would be greater over the 60 year generation

[9] “Economic Overview of Anglesey”, 2013, Local Government Data Unit – Wales

lifetime of Wylfa Newydd. A period of 40 years (and 3.5% discount rate) has been used to match that in NGET's financial analysis.

254. NGET have estimated this likely risk could be mitigated for an incremental £420 million.

255. Neither of these socio-economic costs have been included in NGET's financial justification for a pylon solution.

5.3 The "fairness" of the socio-economic costs

256. Anglesey has a population of about 65,000 while the UK as a whole has a population of about 65,000,000.

257. Assuming average, uniform consumption from a "pooled" grid, Anglesey will consume about 0.01% of the output of Wylfa Newydd.

258. National Grid are planning on putting 100 new pylons on Anglesey, and five in Gwynedd, so while using 0.01% of the power transmitted, Anglesey receives 96% of the pylons and £500 million social costs.

259. In practice, Anglesey is currently a net exporter of power, due to wind turbines and solar parks, so on average will consume none of the power from Wylfa Newydd.

5.4 Mitigating the socio-economic risk

260. NGET's Strategic Options Report (2015) estimated the cost of pylons as being £519 million while putting the cables underground would be £940 million. An incremental increase of £421 million. Ofgem stated in a private email "at least £400 million extra". These figures do not include the Menai tunnel, which is assumed to be required in both cases.

261. The connection is assumed to have a life of 40 years (although the connection will also use the existing pylons, now some 55 years old, and Wylfa Newydd is planned to generate for 60 years). The "40 year" is used throughout NGET's financial analysis and is taken to represent an average asset life.

262. Wylfa Newydd will produce 2.9 GW exported to the national grid. Of all the power generated in the UK 30% is used by domestic consumers (27.5 million households).[10]

263. Over 40 years, the incremental cost of a buried connection is about 11p/year for each UK household – an increase of 0.02% on an average electricity bill of £554/year.

[10] Energy Consumption in the UK 2015, Department of Business, Energy and Industrial Strategy and Digest of UK Energy Statistics (DUKES) 2017

264. In comparison, Hinkley Point C, and possibly Wylfa Newydd, will add about £10 - £15/year per household.

5.5 Flaws in the financial analysis and option selection methodology

5.5.1 Financial analysis

265. In the Strategic Options report, NGET presented figures for the Net Present Value (NPV) of the different options they have looked at.

266. For each option, the one-time capital costs, and the lifetime operational and maintenance costs (including transmission losses) are estimated, and the Net Present Value (NPV) of these costs over a 40 year life calculated.

267. However, there are the following issues:

- the effect of differing income/revenue to NGET from the different technologies (ie a cost-benefit analysis rather than a NPV analysis);
- years 21-40 are assumed to be identical to year 20, while in practice this will not be the case (re-conductoring etc);
- the assumption that assets are worthless by year 41, when in practice pylon towers will only be, say, halfway through their life and will sit on the balance sheet with a residual asset value generating income;
- if the asset were worthless/useless by year 41, there would then be a decommissioning/removal cost, and a replacement cost;
- no account is made for socio-economic costs - property devaluation or impact on local businesses (these are addressed qualitatively but not financially);
- there is no estimate of the "do nothing" scenario - ie the best estimate of future costs over the project lifetime if the project does not go ahead. In this case it would mean no power station and most likely the removal of the redundant transmission line. The project scenario should then be the difference between the project costs and the "do nothing" costs.

268. If NGET were to follow the Treasury Green Book or the EC Guide on Cost-Benefit Analysis for Infrastructure Projects, then a correct "do nothing" scenario would have to be constructed, socio-economic costs included and a full cost-benefit analysis performed.

269. When challenged, NGET fall back on “our approach is approved by Ofgem”, however when seeking clarification, Ofgem say ”we do not mandate any form of cost-benefit analysis”, so it would appear to be in NGET’s gift to select the approach.

270. It would appear that NGET have designed a methodology to get the answer they want (most comfortable delivering and aligned to their core business), rather than an answer that is optimal for UK consumer stakeholders.

5.5.2 Option selection methodology

271. NGET have to consider: lifetime costs, environmental impacts, socio-economic impacts and technology issues.

272. However, the only thing used to make the decision about an option is lifetime cost - all the other factors are considered qualitatively (over thousands of pages) by “experts”.

273. It has been proposed to the NWC team that a far more structured and transparent approach would be to use a weighted matrix, with the various parameters "scored" (eg subsea would score higher than pylons on socio-economic impact but lower on cost impact).

274. This is exactly the type of selection methodology used by NGET’s procurement function for selecting suppliers (conversation with John Pettigrew (CEO) at the 2018 AGM).

6 Consultation and engagement

This chapter was originally written for submission to the Planning Inspectorate for the examination of the North Wales Connection project.

> *The North Wales Connection project would have built approx. 100 new pylons over 30 km of Anglesey countryside, tunnelled under the Menai Strait for 4 km before five more pylons to link Wylfa substation to Pentir substation. The new line would have been roughly parallel to the existing line built in the mid 1960's.*
>
> *A total of 821 people/organisations registered with the Planning Inspectorate as Interested Parties. This included 790 members of the public, of whom 2 argued in favour of pylons, 9 were neither for or against while 779 were against. Less than 80 objected to the nuclear power station. This statistic alone speaks volumes.*

It provides details of NGETs consultation activities as perceived by a rural Welsh community and presents quite a different picture to the glossy success story presented in the business plan.

6.1 Summary

275. This chapter has been written to document a number of areas in which National Grid Electricity Transmission's consultation (2012, 2015 and the statutory consultation in 2016) and engagement with the public since the consultation, have been inadequate.

276. NGET have:

- made statements that are not true and have misled the public;
- made the Statement of Community Consultation difficult to get hold of;
- withheld the results of the statutory consultation (2016);
- refused to establish a Stakeholder Reference Group as a means of engaging with the public;
- exploited the demographics of Anglesey to their advantage;
- always presented a preconceived solution;
- demonstrated institutional bias;
- failed to re-baseline the consultation after major changes in project scope
- demonstrated unacceptable behaviour both during and after the consultation
- failed to adequately collaborate with Horizon

6.2 Misleading Statements

6.2.1 Calling the project a NSIP

277. NGET first mentioned that the project was a Nationally Significant Infrastructure Project (NSIP) in a community newsletter in 2015.

278. It was most recently stated in DCO document 6.3 page 1013 where it says “National Grid has always been clear that the Project, as a question of fact, is an NSIP”.

279. However, the Community Relations Team, in an email to JFD on 22/09/17 stated, “While our project may not be defined, technically, as an NSIP until we submit our application …”

280. In addition, the Project Manager, Gareth Williams, stated in a letter to JFD on 14/08/18 “ … while technically correct that a project only becomes an NSIP when granted consent …”

281. It has never been questioned that the project would become a NSIP at some point, or that NGET should follow the NSIP process as defined by PA2008, the challenge was that it was not a NSIP at the time it was stated.

282. Clarification has been sought by JFD from PINS who stated on 06/09/18 “NSIPs are defined in ss14 through s30A of the Planning Act 2008 (as amended). It will be for National Grid to show in their application for a Development Consent Order that the development falls under s14(1)(b) and s16”.

283. This implies that until the DCO is submitted, and accepted for examination by PINS, the project is not a NSIP.

284. Calling the project a NSIP before and during the consultation gives the perception that the project is already certain. It will never be known how this may have influenced the nature and quality of feedback provided.

6.2.2 Description of the need

285. NGET has made numerous statements, countless times, to the effect:

- the project is needed to bring power to the millions of homes and businesses in Wales that need it; and

- the project is critical to enabling investment in Wylfa Newydd.

286. Both these statements are misleading!

- data provided by NGET in the Need Case report shows that, according to Scottish Power Networks (the DNO) data, Anglesey is currently self-sufficient in power. Data in NGET’s ETYS 2017 shows that Wales is self-sufficient in power. Anglesey and Wales do not need another pylon line, the south east of England needs Anglesey to have another connection;

- Wylfa Newydd needs a connection to the national grid. The type of technology used is irrelevant, and "any" form of connection would suffice. Far, far greater enablers of Wylfa Newydd are investors and an attractive strike price.

287. By making such misleading statements, NGET are effectively "threatening" the Anglesey public "… agree to pylons or your kids will not get jobs".

6.2.3 "consultation is not just about choosing the most popular option"

288. On 24/03/18 NGET wrote to JFD saying "We realise that many people do not want pylons and have said this in their feedback. But consultation is not just about choosing the most popular option." However NGET have done exactly that where it suits them:

- selected a tunnel for crossing the Menai, as not having pylons there was, they said in numerous newsletters, the most popular option (even though Nichola Shaw (UK Executive Director) said at the 2017 AGM that although Holford Rule 1 says to avoid AONB's, technically they could);

- selected to have the proposed second line roughly parallel to the first, as this is the most popular option;

- selected a new buried double circuit at Porthmadog, even though the Holford Rules suggest they could have used pylons as a lower cost option.

6.2.4 First of a kind

289. One of the arguments put forward against using a HVDC connection is that this technology has never been used to connect a nuclear power station to the grid before. There are two issues here:

- at around the same time this argument was being used on Anglesey, it was also being used in Cumbria – it cannot be first in two places!;

- NGET have argued that the Wylfa substation to Pentir substation connection is not a generator connection (the connection between a generator and the main grid), but a "grid to grid" connection. This is exactly the same as the Western Link that links Hunterston substation to Deeside substation via a subsea and subsurface HVDC connection.

6.2.5 Incorrect costs in publicity

290. On page 15 of the 2016 Overview document, a document designed for wide public consumption, NGET state "Putting the whole connection underground between Wylfa and Pentir would cost over one billion pounds."

291. When challenged about this by JFD on 24/03/18, NGET changed the story in their reply of 25/05/18 to "In this instance, the cost stated was for the full project which includes undergrounding between Wylfa and Pentir."

292. This correction was never made public.

6.3 Availability of the Statement of Community Consultation

293. Advice from PINS to JFD on 26/09/17 stated "In accordance with s47(6)(za) of the Planning Act 2008 the SoCC should be made available for inspection by the public in a way that is reasonably convenient for people living in the vicinity of the land."

294. A search on the project website using the term "statement of community consultation" yielded the response "Sorry, no results were found. Please try searching again using different keywords".

295. While the document was on the site, unless you were certain it was already there (and assuming you knew what it was), it was extremely difficult to find.

6.4 Availability of consultation report

296. The pre-application consultation closed on December 16th 2016. The content of the consultation report was not made available until the DCO was published on September 7th 2018 almost two years later.

297. The Department for Communities and Local Government (DCLG) publishes a guide called "Planning Act 2008: Guidance on the pre-application process". Paragraph 81 states " It is good practice that those who have contributed to the consultation are informed of the results of the consultation exercise; how the information received by applicants has been used to shape and influence the project; and how any outstanding issues will be addressed before an application is submitted to the Inspectorate."

298. NGET did not follow this good practice advice, despite the report being requested by JFD on 13/04/18.

299. PINS advised JFD on 13/04/18 to request a draft copy of the DCO from NGET. They refused on 14/05/18.

300. Edit note: The final consultation report, submitted as part of the DCO submission, totals some 2,600 pages, and remains only partly read due to the sheer bulk of it and unwieldy nature.

6.5 Lack of a Stakeholder Reference Group

301. The North West Coast Connection (NWCC) project is a similar project to the North Wales Connection project, in that its aim is to connect new nuclear capacity to the national grid.

302. The NWCC used a model of community engagement first established by Britain's Energy Coast West Cumbria, which involved Community Councils and pressure groups (Power Without Pylons).

303. The pressure group Anglesey Says No to Pylons requested a similar Stakeholder Reference Group for Anglesey but this was refused by NGET. In an email to JFD on

12/09/17 they stated “On Anglesey we participate in the Energy Island Programme, an initiative developed by Isle of Anglesey County Council. This still continues and shares many of the same aims as the work in Cumbria to encourage discussion and co-operation between many varied stakeholder groups working in North Wales.”

304. The Energy Island Programme does not involve community stakeholders, and requests to join have been ignored.

305. The lack of a Stakeholder Reference Group on the Cumbria model, and the refusal to consider one, leads to a perception that NGET do not value engagement and involvement with the local community.

6.6 Exploiting demographics

306. The Horizon DCO document “Wylfa Newydd Project 6.3.8 ES Volume C - Project-wide effects App C1-1 - Socio-economics Baseline Report” contains a wealth of interesting facts and figures about the current state of workforce education, the economy and the population of Anglesey.

307. The NGET SoCC defines the “consultation zone” for the 2016 statutory consultation. The population of the whole island is ca 70,000, while the consultation zone is estimated to be about 25,000. Approx. 60% of the population is of working age, with approx. 25% of them having no formal qualifications and an above average number of self-employed. Approx. 40% of adults have never accessed the internet.

308. The number of individuals in the consultation zone with any knowledge or experience of a project like the NWC project is correspondingly extremely small.

309. NGET have exploited these demographics, dazzling people with photo montages, fly-throughs and glossy brochures, in an attempt to give the impression of a fair and just consultation.

6.7 Preconceived solution

310. A common perception amongst the local community, is that NGET had already decided on the “answer” before starting to communicate and consult with the community. This perception can be shown to be fact.

311. The Electricity Networks Strategy Group (ENSG) is co-chaired by Ofgem and BEIS and includes the transmission companies, including NGET, and other industry stakeholders.

312. In March 2009 ENSG published “Our Electricity Transmission Network: A Vision For 2020”. This report included a second 400 kV line between Wylfa and Pentir, and an estimate of the capital cost.

313. The report was updated in February 2012, some months before the first 2012 consultation. A second 400 kV line was again included and the capital costs updated.

314. One month after the first consultation, in November 2012, NGET published the “Electricity Ten Year Statement 2012”, which also included the second 400 kV line.

315. The publication of these three reports, none of which were made available, or had attention drawn to them, during the consultation, all including for a second 400 kV line between Wylfa and Pentir, does not rule out the connection being underground, but does rule out:

- HVDC to either Deeside or Pembroke; and
- any option involving subsea, such as the hybrid option or those around the coast of Anglesey

316. The perception of a preconceived solution can be seen to be fact. NGET did not consult openly, honestly or in good faith. The motives for doing this likely being "face saving", having declared the capital cost for the connection in 2009 to Ofgem and having "exhausted their quota" of novel technology on the Western Link (which was never subjected to public scrutiny).

317. An interesting viewpoint was revealed in an email exchange with JFD regarding the use of buried cables at Porthmadog. This section of the grid passes through the Glaslyn estuary, an area which is not in the Snowdonia National Park, is not an AONB and apart from the river itself is not a SSSI. Currently there is a single buried circuit to Trawsfynydd from CEGB days, which is proposed to be upgraded to a double buried circuit. Following the Holford Rules, in such a landscape it would normally be appropriate to use pylons. However, NGET said, on 01/05/18, "when an approach has been consented, we maintain this approach when upgrading assets". It is exactly this mindset that proposes a second pylon line on Anglesey.

6.8 Institutional/company cultural bias

318. In June 2018 JFD attended a NGET "environmental workshop" along with other stakeholders from the industry. The aim of the workshop was to gather stakeholder feedback on future business priorities in advance of the RIIO T2 negotiations.

319. In a section of the workshop dealing with visual impact, the handout booklet of presented slides contained the phrase "Our current approach is to seek overhead connections wherever possible". It was pointed out that the presented slide had just been updated as this was no longer policy.

320. A handout from the workshop was provided titled "Undergrounding policy: Approach to new connections". This included the statement "National Grid's approach is to seek overhead connections wherever possible".

321. The NWC Community Relations Team were challenged on both these documents who responded on 29/08/18 with " … information on how we consider undergrounding can be found in our approach to the design and routeing of new electricity transmission lines. This was introduced in 2012 and the process has been followed by all of our major projects since then".

322. There is no reason not to believe that a new approach was published by NGET in 2012 in readiness for the first NWC consultation. However, the fact that workshop

handouts were six years out of date would suggest that the message was not effectively communicated within NGET, and that behaviours within the organisation had not changed. As an organisation, NGET are inherently biased towards overhead lines.

6.9 Changes to the Scope of the Project

323. In 2012 there was an identified need for NGET to transmit 5.6 GW of electricity from Wylfa substation across Anglesey to Pentir substation (3.6 GW generated by the proposed new nuclear power station plus 2 GW generated by the proposed Celtic Array off-shore wind farm).

324. NGET were proposing to build a second run of pylons across Anglesey to carry 2 x 400 kV overhead lines. The new row of pylons, in combination with the existing row of pylons (which also carry 2 x 400 kV overhead lines) would have a total export capacity of 8.88GW.

325. By 2015 the amount of electricity which needed to be transported across Anglesey had reduced from 5.6 GW to 3.1 GW. This reduction was due to the cancellation of the Celtic Array wind farm and a reduction in the proposed output of the new nuclear power station at Wylfa.

326. When the 2016 statutory consultation was conducted, NGET's design was substantially unchanged from 2012, despite the fact that the amount of electricity which needed to be transmitted had reduced by 45%.

327. The project should have been re-baselined, and the consultation re-started, when there was such a significant change in scope.

6.10 Attitude and behaviour during the consultation

328. The Planning Act 2008 'Guidance on Pre-application Consultation' states: "if it is to be seen as positive, the consultation process must be seen as legitimate. Community involvement is a key part in achieving this".

329. An inclusive approach is recommended which demonstrates an understanding of the local community, takes into consideration local knowledge and local perspectives and makes people feel they can influence proposals. The Guidance strongly recommends working closely with local authorities in the development of a SoCC.

330. When questioned about their "close working" with IoACC, NGET responded to JFD on 12/09/17 "when developing our consultation plans, we worked closely with both the Isle of Anglesey County Council and Gwynedd Council to develop our Statement of Community Consultation".

331. When pressed for more detail, NGET responded to JFD on 07/02/18 "we have worked with Isle of Anglesey County Council and Gwynedd Council when developing our plans for consultation and sought their guidance on how best to engage with communities".

332. When pushed for further detail NGET responded to JFD on 02/03/18 "we provided a draft to both councils, who provided useful feedback".

333. Providing a draft, and receiving feedback, could never be described as “working closely”.

6.11 Attitude and behaviour since the statutory consultation (2016)

334. The group “Anglesey Says No to Pylons” has surveyed landowners/farmers who will be directly impacted by the proposals:

- none want more pylons on their land – their preference would be for underground or subsea;
- some consider that they have been bullied/intimidated to sign the “Heads of Terms”.

6.12 Statement of Community Consultation (SoCC)

335. Appendix 1 (hard-to-reach groups) and Appendix 2 (special interest groups) of the SoCC list organisations with whom NGET planned to consult. On first appearance these lists look extensive - 42 hard-to-reach groups (22 in Anglesey, 20 in Gwynedd) and 167 special interest groups, however, on closer inspection there are anomalies:

- many of the organisations listed are Departments of Anglesey and Gwynedd Councils and as such they could not respond to the consultation with specific Departmental comments. The inclusion of Government Departments, Council Departments and organisations funded by local Councils served only to fill the pages of the SoCC and certainly did not contribute in a meaningful way to the consultation.
- statutory consultees were listed as ‘special interest groups’ eg Welsh Ambulance Service NHS Trust, as were organisations who refuse to comment on what they regard as a “political issues”.
- some other voluntary organisations and interest groups listed by NGET deny ever being consulted eg The Royal Welsh Yacht Club “Sorry for the delay in getting back to you. I have to report that National Grid never contacted this Club”.

336. NGET listed tourists in the “hard to reach” group. Anglesey typically receives a visitor population some 20 times the resident population, mainly in the summer months. Conducting the statutory consultation in December 2016 is unlikely to reach many visitors.

6.13 Failure to collaborate with Horizon

337. Section 2.3.1 of the Planning Act 2008 states “… the Planning Act aims to create a holistic planning regime so that the cumulative effects of different elements of the same project can be considered together. Therefore the Government envisages that, wherever reasonably possible, applications for new generating stations and related infrastructure should be contained in a single application to the IPC.”

338. This approach has not been followed by Horizon and NGET, and there has not been any “cumulative consultation” for the two individual projects together ie as a single programme.

339. Horizon have used an iterative approach over three stages, all three being considered statutory.

340. NGET have also followed an iterative approach, but as explained in an email to JFD on 29/08/18 “Our statutory consultation was held in 2016.”

341. If the two organisations had genuinely worked closely, one would have expected their interaction with the local community to be more similar.

342. For the Horizon DCO examination, NGET have registered as an Interested Party, and in their Relevant Representation point out that both companies have made alternative plans for the same area of land. Had they been working closely, this would not have happened.