



NORTH WEST COAST CONNECTIONS PRELIMINARY ENVIRONMENTAL IMPACT HEADLINES REPORT

Prepared on behalf of the PPA Group Authorities

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Contents

- 1.0 Introduction3
- 2.0 Key Headline Issues5
- 3.0 Emerging Preliminary Environmental Impact Headlines 11
 - 3.1 Landscape and visual impact11
 - 3.2 Socio-economics, recreation and land use15
 - 3.3 Tunnel head impacts at Barrow and Heysham19
 - 3.4 Transport and connectivity21
 - 3.5 Terrestrial and avian ecology25
 - 3.6 Historic environment and cultural landscapes27
 - 3.7 Project wide comments28



1.0 Introduction

- 1.1.1 The PPA Group welcome National Grid's commitment to meaningful engagement on project design including technology choices and the significant mitigation that is required. The Group are pleased the informal engagement undertaken thus far has resulted in significant and much needed mitigation.
- 1.1.2 Based on the available information during the Route Corridors consultation (2014) the PPA Group provided positive feedback and support for the 'Onshore North' and 'Onshore South with Tunnel Option' including the Morecambe Bay tunnel.
- 1.1.3 The PPA Group have previously expressed support for the principle of rationalisation of existing overhead lines, therefore, the provision to take down lines is supported so long as the integrity of the electricity distribution network and connection opportunities is not be weakened as a result. Additionally, the Group consider that there are a number of locations where additional lines need to be removed to provide appropriate mitigation.
- 1.1.4 Furthermore, the principle to develop a new 400kV underground cable through the western section of the Lake District National Park is strongly supported, given the alternatives. However, the implications of undergrounding on other topic areas, such as ecology and historic environment must still be addressed. Furthermore, the decision to remove the existing Electricity North West (ENW) 132kV overhead line (OHL) is also strongly supported, given the benefit this will have on the landscape and views in the area.
- 1.1.5 The PPA Group welcomes continued engagement with National Grid and considers that adequately addressing the impacts raised in this paper will minimise the risks to the project through the DCO process, protect our communities and increase delivery certainty for National Grid. The Group wants to continue to engage in positive dialogue to enable delivery of the NWCC project in a way that meets both national and local needs, and is consistent with legislation and government policy.



1.2 Document purpose and structure

- 1.2.1 This report provides a summary of the PPA Group’s emerging consultation response and an outline of the headlines from the evaluation of the North West Coast Connections (NWCC) Preliminary Environmental Impact (PEI) Report issued for consultation by National Grid on 28 October 2016. The PEI Report provides a preliminary environmental assessment of the Project and proposed mitigation measures drawing on currently available information
- 1.2.2 This Headlines Report has been drafted in advance of the PPA Group Joint Specialist Response to provide the PPA Group members with an indication of the key emerging issues at an early stage. It is intended that this Report will assist in the development of a joint PPA Group position on issues and help meet challenging committee schedules required for formal Council approval.
- 1.2.3 The Report has been informed largely by the views of topic specialists from WYG supplemented by comments from the PPA Group Authorities where available. It is based on a broad assessment of the extensive documentation and therefore, is subject to change as specialist assessments are undertaken.
- 1.2.4 The remainder of this Report is structured as follows:
- Section 2 provides an over view of the key headline issues; and
 - Section 3 provides additional detail on the headline issues.



2.0 Key Headline Issues

Landscape and visual impact

Summary key points	
<p>Baseline</p> <ul style="list-style-type: none"> Baseline information is sufficient but further engagement is required as the project moves towards the development of the Environmental Statement and DCO submission to develop a more refined assessment that considers additional visual impacts especially from community user/receptor perspective. 	
<p>Methodology</p> <ul style="list-style-type: none"> The methodology for identifying areas where mitigation is required and options should be assessed is flawed; adopting 'particularly significant' as the bar for mitigation need is not consistent with the EIA Regulations There is a flawed interpretation of national policy and guidance that defines and protects the Lake District National Park and its setting. There has been a misrepresentation of the visual impact through use of photomontage tools. The recently updated Cumulative Impact of Vertical Infrastructure tool does not form part of the methodology for the assessment set out in the PEI Report. The PPA Group do not agree with that National Grid's rationalisation policy (one-up-one down) results in a benefit. 	
<p>Assessment</p> <ul style="list-style-type: none"> Cumulative and sequential impact is not adequately considered in the assessment along whole route. Specifically, the experience of visitors to the Lake District National Park protected landscape have not been adequately evidenced or addressed including the cumulative impacts of viewing this linear project. The application of the National Grid's methodology including the Options Appraisal of Alternative Technologies methodology has resulted in the establishment of inappropriate areas for mitigation of the NWCC project. This has led to a piecemeal approach to mitigation and the consideration of alternative technologies. 	
<p>Mitigation</p> <ul style="list-style-type: none"> Lack of appropriate mitigation of landscape and visual impacts arising from the use of over head lines; in particular within the landscape setting of the Lake District National Park, and related to cumulative impact to the east of Whitehaven, east of Workington following the existing 132kV line north and in the area of the Hadrian's Wall World Heritage Site. The PPA Group disagree with the assessment and rejection of alternative options for the Duddon Estuary, including a tunnel option, which are based on the flawed assessment of impacts within the landscape setting of the National Park. 	



Visitor economy

Summary key points	
	<p>Baseline</p> <ul style="list-style-type: none"> • The baseline data set out within the PEI Report in relation to socio-economics, recreation and land use is generally derived from the appropriate sources. However, there is an overreliance on evidence from past projects, particularly in relation to the effects on the visitor economy. • There is a failure to provide adequate information and evidence on the impact on the visitor economy of Cumbria, which is the largest sector in the County’s economy and growing. In particular, there is a lack of evidence to support National Grid’s position that Cumbria’s visitor image/brand will not be significantly damaged.
	<p>Methodology</p> <ul style="list-style-type: none"> • Although the overall approach to the identification and assessment of socio-economic effects is considered to be appropriate, at this stage, there is limited analysis of the Project’s alignment with key local and sub-regional policy, specifically in terms of the visitor economy; • Importantly, National Grid have failed to acknowledge the unique character of the Lake District National Park. • The methodology adopted to assess the deterrence effect on visitors draws upon the results of survey evidence from other previous projects which raises several important issues; the transferability to NWCC study area, robustness and validity of this original research is uncertain, and there is substantial methodological criticism of the focus on survey-based approaches to evaluating impacts.
	<p>Assessment</p> <ul style="list-style-type: none"> • Key risks and impacts to visitors’ enjoyment of Cumbria’s landscapes and environment through access and recreation have not been adequately assessed. • In particular, the issues associated with negative effects on visitor perceptions, as demonstrated by the recent floods, should be recognised. In addition, as previously noted, the PEI Report does not adequately assess the significance of impact at the local level. • The impact of disruption to public access and to road and rail transport networks has not been properly considered. • The emerging assessment underestimates the project’s impact on the visitor economy in Cumbria.
	<p>Mitigation</p> <ul style="list-style-type: none"> • There is a lack of appropriate mitigation of visitor economy impacts, including damage to Cumbria’s visitor image/brand. • There is a lack of appropriate mitigation for disruption to public access and to road and rail transport networks. • It is considered that appropriate mitigation, such as support for support small and medium sized businesses in the visitor economy and marketing and promotional activities are required to counter the disruption caused during the construction period and the negative perception driven by the adverse impact



of NWCC on the landscape which attracts visitors.	
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Tunnel head impacts at Barrow and Heysham

Summary key points	
<p>Baseline</p> <ul style="list-style-type: none"> • There is inadequate information provided on the storage, movement and final destination of tunnel spoil. • No clear information on the need, purpose or use of the temporary works at the tunnel-heads. • Noise, vibration, air quality, light, ecology and residential amenity impacts of development at the tunnel-head sites are not adequately stated. • Transport assessments have not been carried out. 	
<p>Methodology</p> <ul style="list-style-type: none"> • The PPA Group disagree with the determination of high sensitivity receptors assessment. • Standard noise criteria for assessment is inadequate for project of this scale and location. 	
<p>Assessment</p> <ul style="list-style-type: none"> • As the baseline data is largely absent the impacts have not been adequately measured and assessed. • National Grid have drawn conclusions on accommodation availability. However, there is a lack of clarity regarding the required collaboration with accommodation providers to overcome existing shortfalls and/or raise standards of suitable worker accommodation. 	
<p>Mitigation</p> <ul style="list-style-type: none"> • No meaningful mitigation is proposed to treat the noise, vibration, air quality, light, ecology or residential amenity impacts. • No mitigation is proposed to address the impacts caused by the storage, movement and final destination of tunnel spoil. • There is incomplete workforce planning and accommodation proposals at the tunnel-heads. 	

Transport and connectivity

Summary key points	
<p>Baseline</p> <ul style="list-style-type: none"> • The PPA group are significantly concerned that the baseline is insufficient to allow selection of road or multimodal strategy. • There is a lack of appropriate modelling of traffic flows to allow assessment and conclusions to be drawn. 	
<p>Methodology</p> <ul style="list-style-type: none"> • A method has not been proposed to enable the selection of the road or multimodal strategy. 	
<p>Assessment</p> <ul style="list-style-type: none"> • The key risks and impacts of traffic movements have not yet been addressed. 	



<ul style="list-style-type: none"> The PPA group strongly disagree with National Grid’s assessment that railway capacity issues should be a reason for not selecting the multi-modal option. The approach should be to mitigate the rail capacity issues, which would keep traffic off the highway and also provide a legacy benefit. Furthermore, the PPA Group disagree with the assessment of impacts relating to the ‘road based’ and ‘multi-modal’ options. The multi-modal option will reduce the scale of HGV movements in some areas, which could have safety and environmental benefits. Fundamentally, the cumulative impacts have not yet been assessed. Key risks and impacts on PRoW and cycle paths have not been adequately addressed. 	
<p>Mitigation</p> <ul style="list-style-type: none"> There is a lack of appropriate mitigation measures and improvements to address the traffic impacts on the highway network. These measures need to be informed by modelling of traffic flows both for the individual development and for the cumulative impact, and is dependent upon the completion of survey data. Mitigation should also address the following, for which no detail has yet been provided; the safe management of traffic on minor roads; the impact of worker accommodation locations – for example for the underground section within the National Park, and the implementation of Travel Plans. The PPA Group are concerned that the PRoW Management Plan has yet to be developed. Additionally, the economic impacts upon the visitor economy need to be assessed. Measures should seek to provide a high standard of mitigation to address direct and indirect effects. 	

Skills and supply chain

Summary key points	
<p>Baseline</p> <ul style="list-style-type: none"> The baseline data set out within the PEI Report in relation to skills and supply chain is derived from the appropriate sources, however, there is little detail available to assess the implications. 	
<p>Methodology</p> <ul style="list-style-type: none"> The methodology is as considered to be appropriate at this stage, and is consistent with that used for other major projects. 	
<p>Assessment</p> <ul style="list-style-type: none"> The PEI Report recognises that there are no published standards that define the sensitivity and magnitude of socio-economic effects. However, the overall conclusions are considered to be reasonable and consistent with that used for other major projects. 	
<p>Mitigation</p> <ul style="list-style-type: none"> Initial work towards an Employment and Skills Framework is welcomed, however, it is disappointing that the content of the consultation proposals on what measures will be put in place to achieve the targets and objectives is at this stage inadequate to provide support for the proposals. 	



<ul style="list-style-type: none"> • The PPA Group support the commitment to secure 20% as a minimum of the workforce from the local labour market – however, National Grid must provide commitment to providing support to target those that are currently economically inactive to help ensure they can secure work. • It is in the interests of National Grid and the local economy for the skills to be locally available and for the businesses to be equipped to become part of the supply chain. There will be a need for a financial commitment from National Grid to invest in local skills development and supply chain capability development. • There will need to be appropriate training facilities provided not only to support the existing population but also to help attract new workers and their families to come and work in Cumbria. 	
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Ecology

Summary key points	
<p>Baseline</p> <ul style="list-style-type: none"> • The baseline fails to provide adequate information and evidence to enable assessment of risks and impacts on key habitats and protected species. • There is an inadequate approach and failure to progress with the statutory Habitats Regulation Assessment (HRA) of the impacts of the project on internationally important wildlife. 	
<p>Methodology</p> <ul style="list-style-type: none"> • The potential risk to biodiversity from the spread of invasive species from the construction of the project has been inadequately addressed in the methodology. 	
<p>Assessment</p> <ul style="list-style-type: none"> • The assessment of impacts on habitats and species have been made in the absence of completed surveys. 	
<p>Mitigation</p> <ul style="list-style-type: none"> • Lack of appropriate mitigation and compensation for impacts on habitats and species The PPA Group would expect these to be measures such as avoiding key hotspots, inadequate construction methods and lack of information regarding compensation for loss and disturbance. • Significant risk of wildlife impacts from the spread of invasive species is not adequately assessed and mitigated; this is a major risk from such a large-scale linear project. 	

Historic environment and cultural landscapes

Summary key points	
<p>Baseline</p> <ul style="list-style-type: none"> • Inadequate evidence of impacts to the historic environment and archeology; in particular from underground construction methods including cabling in the LDNP and Roman Empire (Hadrian’s Wall) World Heritage site. • The baseline focuses on providing information and evidence relating to 	



<p>archaeology, and is inadequate for listed buildings and Conservation Areas.</p>	
<p>Methodology</p> <ul style="list-style-type: none"> • Key risks and impacts to World Heritage Sites are not adequately addressed. In particular, only one of the three key features of the English Lake District nominated World Heritage Site have been considered. • There is no evaluation of the setting of other elements of the historic environment for example listed buildings and Conservation Areas. 	
<p>Assessment</p> <ul style="list-style-type: none"> • Inadequate assessment of impacts to the historic environment and archeology. This includes; historic buildings and underground construction methods including cabling. • The PPA Group disagree with the conclusions of the assessment that there would be "a slight beneficial" significance of effect Roman Empire (Hadrian's Wall) World Heritage site and the candidate English Lake District. 	
<p>Mitigation</p> <ul style="list-style-type: none"> • Without an appropriate evidence base and assessment the PPA Group are unable to provide comment on mitigation measures. 	

3.0 Emerging Preliminary Environmental Impact Headlines

3.1 Landscape and visual impact

Mitigation Methodology

- 3.1.1 Fundamentally, National Grid's approach to landscape mitigation, including the Options Appraisal of Alternative Technologies methodology (OAAT) remains flawed. The PPA Group concerns appear not to have been addressed; therefore, the application has resulted in the establishment of inappropriate areas for mitigation of the NWCC project. This has led to a piecemeal approach to mitigation and the consideration of alternative technologies.

Undergrounding in the National Park

- 3.1.2 The principle to provide 23.4km (14.5 miles) of new 400kV underground cable through the western section of the Lake District National Park (LDNP) is welcomed. The decision to remove the existing Electricity North West 132kV overhead line is also welcomed, given the benefit this will have on the landscape.
- 3.1.3 However, the implications of undergrounding on other topic areas, such as ecology and historic environment must be addressed. Additionally, there is a need to consider the appropriate location for the Compound Sealing End (CSE) required as an interface between OHL and the section of underground cabling. The long-term reversible effects of the vegetation loss and disruption to landscape pattern and features due to the implementation of the undergrounding do not appear to have been fully considered. The undergrounding is a major engineering development, and needs to be addressed in far greater detail than is currently in order to understand the potential scale of the temporary disruption to the landscape.

Impacts of the Special Qualities and Setting of the National Park

- 3.1.4 The proposals for use of pylons and associated cabling within the setting of the Lake District National Park are a major concern. The LDNPA and the PPA Group has very clearly and over a long period of time raised strong concerns about impacts affecting landscape character and views in to and out of the National Park. The PPA Group disagree with the assessment of impacts on the landscape setting of the Lake District National Park; particularly the flawed assessment of national policy and guidance that defines and protects the setting. The Group are concerned that this has led to a inappropriate proposal and the a lack of the required mitigation.

3.1.5 The PEI makes little reference to the 'setting' of the LDNP. The PPA Group's position stated within the Stakeholder Feedback Questionnaire issued in September 2016 was clear that consideration of the wider landscape setting of the Lake District National Park is also of equal importance. Therefore, it is considered that the approach to mitigation currently proposed by National Grid is particularly deficient in its assessment of the effects on the 'setting' of the Lake District National Park.

3.1.6 Three issues on setting arise –

- Definition of setting in policy - this is a flawed definition that can be strongly challenged. It fails to consider the long established definition of setting for Protected Landscapes of assessing impacts from within AND outside of the designated area;
- Definition of setting for the NWCC project - the application of National Grid's flawed definition of the setting set out above leads to a flawed assessment in the PEI in section 6A.3. The impact on receptors is framed entirely by those receptors within the National Park only;
- Landscape character types - the failure of the PEI assessment of landscape and visual impacts to recognise the continuity of landscape types and topography across the National Park boundary is a significant flaw that can be challenged.

3.1.7 The route to the north of the LDNP is to be carried on lattice pylons whilst the section through the LDNP is proposed to be undergrounded from the location of the CSE compound located to the north of Drigg. The baseline description of the area provides a description of the existing landscape and visual context; however, the presence of the Low Level Waste Repository at Drigg is a large repository site within the Subsection and is not referenced. The presence of this site is of particular importance in the consideration of the setting of the LDNP and the proposed 400kV route.

- 3.1.8 It is noted that there is a short length of undergrounding extending south of the LDNP boundary to a CSE at Silecroft, which is welcomed. However, following a preliminary review of the part of the Subsection that runs from the head of Duddon Estuary over the mosses to Kirkby-in-Furness, we would question why this section of the route is above ground when it forms the setting of the LDNP. Although, the alignment of the route is outside the boundary line of the LDNP designation, the area of land is of similar/equal value and susceptibility as the LDNP in landscape terms in providing the setting to the LDNP. It is therefore considered that this section should be considered for undergrounding. This option would avoid the considerable problems raised by the proposed route across Foxfield Ridge and the Duddon Mosses SAC, as well as in the setting of the LDNP that have been identified in the Duddon Estuary. Whilst we acknowledge that designing a route crossing the Duddon Estuary is challenging, it is vital that the appropriate design and mitigation is provided.
- 3.1.9 National Policy EN-1, DCLG guidance, the Electricity Act 1995 as well as current planning practice make it clear that the 'setting' of National Parks should be considered in the same way as those areas within the National Park. However, the approach to mitigation currently proposed by National Grid is particularly deficient in its assessment of the effects on the 'setting' of the Lake District National Park. Consideration of the wider landscape setting of the Lake District National Park is also of equal importance along the whole route of the NWCC Project. Landscape planning guidance from DCLG, including that shown on its website, provides clarity that development by 'relevant authorities' impacting on the setting of National Parks should be considered in the same way as those within the National Park. There is a long-established recognition that the legislative and policy framework, including current planning guidance, provides protection of the setting of National Parks. Although these areas are not designated as National Park, developments within the setting can impact upon their statutory purposes and Special Qualities.

The Duddon Tunnel

- 3.1.10 The PPA Group had also recommended undergrounding beneath the Duddon Estuary to avoid major adverse impacts, particularly at the Foxfield Ridge and the Duddon Mosses SAC, plus the wider landscape setting of the LDNP (see points above about setting of the LDNP). This would also avoid significant visual, landscape and community impacts of the proposals in the vicinity of Kirkby in Furness and Beckside and further south.

3.1.11 However, this recommendation has not been taken forward as part of the consultation proposals. The PPA Group disagree with the assessment and the rejection of alternative options for the Duddon Estuary, including a tunnel option, which are based on the flawed assessment of impacts within the landscape setting of the National Park.

Cumulative Impact

3.1.12 The cumulative impact of the vertical infrastructure, particularly in Allerdale, and Carlisle and north Copeland, and in parts of the Furness peninsula is already a concern and larger pylons will further worsen the position. Rationalisation of the Electricity North West (ENW) line has afforded some reduction in OHL clutter in a number of locations in the North Section and notably in the LDNP; however, this does not go provide sufficient mitigation (see below). The PPA Group do not consider that the PEI provides sufficient details to understand the cumulative impact of the project and further assessment is required to assess the impact of the new OHL cumulatively with the existing lines.

Electricity North West Rationalisation

3.1.13 National Grid has adopted a one-up-one-down principle in relation to the ENW 132kV OHL, with a number of other areas where additional lines are removed or transferred underground. These are largely focused on the North Section of the route, with additional rationalisation; in the area around the Hadrian's Wall World Heritage Site (WHS), a section at Broughton Moor and in the area north of Westlakes Science Park. However, The PPA Group do not consider that the appropriate level of mitigation of landscape and visual impacts arising from the use of pylon and overhead cables has been proposed. In particular, to the north of the Moorside site, east of Whitehaven, east of Workington following the existing 132kV line north, and Hadrian's Wall World Heritage Sites.

3.1.14 Although the additional rationalisation is largely welcomed where the 132kV cable is undergrounded there are concerns regarding the appropriate positioning of Cable Sealing End Platform Pylons (CSEPP), particularly where these are close to the highway or existing properties. This infrastructure is also required where 132kV and below OHL is placed underground to facilitate the cross of the new 400kV OHL.

Electricity North West 132kV Trident over head line

- 3.1.15 A new 132kV trident route on timber poles extends from Millom and converges with the proposed 400kV route near The Green, extending north beyond the 400kV route round the head of the Duddon Estuary. This line has just been revealed and is required to provide a 132kV connection to the Millom area and specifically the Haverigg wind farm extension. The line connects to a 132kV substation (not proposed within NWCC) and is considered to provide an ungraded local electricity distribution network, as well as connection opportunities in the areas of Millom.
- 3.1.16 The principle of upgrading the network in the Millom area is welcomed, however, it is considered that this route, albeit on timber poles, will result in a notable increase in visual clutter within the bottom of the valley. There is also concern about the additional visual clutter from the 132KV trident line and associated sealing end pylons around the wider Duddon estuary including at Foxfield, Kirkby in Furness and south to Lindal in Furness.

Methodology

- 3.1.17 The PPA group are very concerned by the lack of wireframe diagrams to support the photomontages. These make assessment of the impacts, particularly on skylining of the pylons and other infrastructure, difficult to assess. These have been requested by the PPA Group over a long period. While National Grid has very recently agreed to provide some basic wireframes for some viewpoints, this does not fully address the lack of vital information as a key tool for Landscape and Visual Impact Assessment.
- 3.1.18 The selection of viewpoints for photomontages included in the PEI fails to address some of the concerns posed by the proposals. For example, the PEI viewpoints within the Whicham Valley fail to help assessment of the impact to receptors at lower elevation and from the coastal plain around Silecroft. These locations are within the setting of the National Park, and the PPA Group has been clear that this is a sensitive location. It is a flaw in the PEI to fail to adequately cover them in the viewpoint and photomontage assessments.

3.2 Socio-economics, recreation and land use

Visitor Economy

- 3.2.1 The NWCC project alone and in combination with other major projects has the potential to disrupt tourist trade through displacement and negative image. The PPA Group is concerned that National Grid underestimates the impact on the visitor economy across the area, by relying on limited local survey and other national tourism studies. Limited primary information regarding the visitor economy has been provided in the PEI, with full assessment of the impact on the visitor sector and visitor perceptions not available until the ES. The PPA Group consider that National Grid have failed to provide adequate information and the level of assessment required to understand the key risks and impacts on the visitor economy.
- 3.2.2 The impact of the project on Public Rights of Way (PRoWs), paths and cycleway could have significant implication for the visitor economy. This issue is set out below under paragraph 3.4.11 and 3.4.11.
- 3.2.3 The PPA Group consider that there is a lack of appropriate mitigation of visitor economy impacts, including damage to Cumbria's visitor image, and the disruption to public access, road and rail transport networks. Appropriate mitigation, such as support for small businesses and marketing and promotional activities are required to counter the disruption caused during the construction period and the negative perception driven by the adverse impact of NWCC. In addition to specific mitigation measures for key tourism and visitor economy assets affected.

Skills and Supply Chain

- 3.2.4 The PPA Group consider that there is inadequate detail in the PEI to understand the impacts and assess the extent to which these are addressed. Initial work on an Outline Employment and Skills Framework (ESF) is encouraging, however, it is disappointing that measures, targets and objectives are not available at this stage to support the proposals.
- 3.2.5 Review of the PEI reveals that National Grid is proposing that 20% of the project workforce and supply chain would be derived from the local area, however, detailed analysis of the PEI material must be undertaken to understand the justification and appropriateness of this figure. While the commitment to secure 20% as a minimum is welcomed, further investigation is required to understand how this level of involvement on NWCC will be secured; the Hinkley Point C Connections project secured a similar undertaking by a S.106 Agreement.

- 3.2.6 Furthermore, the PPA Group consider that it is in the interests of National Grid and the local economy for the skills to be locally available and for the businesses to be equipped to become part of the supply chain. However, this needs commitment from National Grid to invest in local skills development and supply chain capability development. Additionally, as part of the package of measures National Grid and their contractors should commit to target economically inactive people in the area and the recruitment of apprentices to support local skills training and development. These measures will help mitigate displacement impacts, however, they will require a funded programme of intervention and support and a commitment from Grid (and their contractors) to recruit from the pool of people that are supported.
- 3.2.7 The PPA Group are concerned that there is very limited detail on mitigation measures that will be required to address the impacts of the NWCC Project, and therefore, few details of how the mitigation will be secured and monitored. It is important that National Grid;
- makes clear and early commitments to providing funding to support the development of local business capability and capacity, working with the LEP and other local partners, through the development and implementation of a supply chain strategy..
 - progresses the development of a detailed skills action plan to ensure that there is investment in skills development in advance of construction in order to facilitate employment and training of local people.
 - makes early commitments to capital investment in training facilities.
 - provides a clear procurement strategy and to develop specific interventions with measurable and enforceable targets that capture the local benefit for Cumbrian businesses.
- 3.2.8 Additionally, the PEI suggests that the need for investment in education and training facilities will be explored further, and if there is a need, any proposed support and investment measures will be reported in the Employment and Skill Framework and submitted with the DCO. The PPA group consider that such investment is required for appropriate training facilities provided not only to support the existing population but also to help attract new workers and their families to come and work in Cumbria. However, an understanding of the delivery mechanism is required to evaluate the appropriateness of this undertaking. It is also suggested that

Employment sites and land allocations

- 3.2.9 The PPA Group previously suggested a number of sites that should be considered for investment and use within the NWCC Project. A number of these have been proposed for use as construction, rail and helicopter compounds, notably sites at; Port of Workington and Kingmoor Park Lillyhall, Wigton, Aspatria, Flimby, and Heysham. There are also potential effects on land allocations at Barrow Port and Marina, as well as employment and current planning applications proposed for Roosecote Power Station, and land at Heysham, Heysham Port and Heysham Moss. The PEI considers that the likely effects of the NWCC Project would not be significant during both the construction and operational phases. Permanent land take effects would occur in relation to the proposed Tunnel Head and substation areas at Roosecote and Middleton. As both of these areas of ground are currently vacant at present, the PEI states that their use is expected to lead to longer-term beneficial effects. Similarly, their use is considered in the PEI to be consistent with policy objectives as set out in the respective Development Plans.
- 3.2.10 The assessment for the North Route identifies a number of planning site allocations in Local Plans, where there could potentially be conflicts during the construction phase. These include: the Ehen/Keekle Valleys Tourism Opportunity Site and the Whitehaven Eastern Relief Road; a possible Opportunity Site at Hensingham Common comprising 16ha of employment land of which 1.8ha would be used as a site compound; Whitehaven Commercial Park, Lillyhall Industrial Estate and Derwent Forest Site; Kingmoor Park Industrial Estate, Kingmoor Park Rockcliffe, Kingmoor Park Heathlands Estate, and land at Station Road Wigton. In terms of the operational phase, only the Ehen/Keekle Valleys Tourism site would seem to have any long-term effects, as all the others would be used for temporary site compounds.
- 3.2.11 In terms of the South Route, further investigation is required to assess the impacts on allocations described above especially in Barrow and Heysham. In addition the above new permanent lattice trident terminal pylons (with laydown), are shown to be located within the site boundary of a housing site next to Burlington School in Kirkby-in-Furness, which is allocated in the SLDC Land Allocations DPD. This will cut across the allocated site and could have a negative effect on the allocation.
- 3.2.12 Further investigation will be undertaken within the detailed response to understand the detail of National Grid's proposals to ensure the impacts are considered and where possible legacy secured.

Ability to connect to the ENW network

- 3.2.13 The PPA Group has previously provided comment regarding maintaining the integrity of the ENW infrastructure in a number of areas across the route, while also ensuring the opportunity for new connections for both users and producers. National Grid's proposed route makes provision for a number of additional 400kV substations, the extension to a number of 132kV substation and substantial re-configuration of the ENW infrastructure. Initial review of the PEI suggests that reconfiguration of the infrastructure could be better designed to meet future needs of users and producer, for example ensuring connection opportunities at the Stainburn substation. Additionally, previously expressed concern regarding the resilience of the ENW infrastructure to flooding does not appear to be addressed, indeed the Carlisle 33kV substation is not included in the project.
- 3.2.14 Furthermore, initial review of the PEI suggests that the integrity of the ENW network in the Millom area appears to have been addressed by the addition of a 132kV trident line that connects from a 132kV substation (not part of this project) near Millom, round the Duddon Estuary to the network at Lindal. However, it is understood that the new substation is contingent on the development of the Haverigg Wind Farm. The impact of the trident line is considered above.

3.3 Tunnel head impacts at Barrow and Heysham

Lack of details

- 3.3.1 Significant issues have been raised regarding the impact of the tunnel construction on the local community, transportation links and social infrastructure in Roosecote and Heysham. Initial review of the PEI suggests that there is limited information regarding the tunnel heads and the impact on the surrounding community. For example, information on the construction processes (such as the slurry treatment plant) will not be available until the ES. Proposed construction working hours are included in the Code of Construction Practice that accompanies the PEI Report. In the absence of vital information, the PPA Group considers that the impacts related to noise, vibration, air quality, light, ecology and residential amenity at the tunnel-head sites are not adequately measured, addressed, or mitigated. This issue is a significant concern.

Impact of Tunnel Head construction

- 3.3.2 Following on from the section above the PPA Group has significant concerns about both proposed layouts given their proximity to existing and proposed residential and commercial development, and adverse impacts on PRow. Little information is available regarding the onsite processes, such as those relating to the 20m high slurry treatment plant or off site movements. Therefore, at this stage it is not clear whether the local areas will be subject to an unacceptable adverse impact on amenity and health for a prolonged period of construction.
- 3.3.3 As stated above, National Grid does not intend to provide more information on the project infrastructure, or an assessment of the impacts on the amenity of the local community until the Environmental Statement (ES) to be submitted alongside the DCO.
- 3.3.4 It should be noted that the indicative layout for the Roosecote tunnel head now reflects the submitted planning application by Centrica for a gas fired power station and energy storage plant. National Grid is confident that there remains sufficient space to accommodate the manufacture of all the concrete segments required for the tunnel. Additionally, after concerns were expressed regarding the location of the segment factory in Heysham, proposals do not include a factory on the Lancashire side.

Worker accommodation

- 3.3.5 During the construction of the project there is likely to be a concentration of over 380 workers at each of the tunnel heads at Barrow and Heysham. Given the number of directly employed workers required for the construction of the tunnel, and the other major projects in local areas, accommodation for workers is a key concern. The PEI concludes that there is limited effect in the Heysham area given access to transport links and the wider catchment of workers. However, the PPA Group consider that a workforce strategy is nevertheless required that will include commitments from Grid to support delivery of worker accommodation (including refurbishment of existing housing stock) so as to avoid adverse impacts on the existing housing market and visitor accommodation
- 3.3.6 The impact in the Barrow area is acknowledged and National Grid commit to working with stakeholders to produce an Accommodation Plan to be submitted with the ES. There are currently no details on the content of the Plan. This accommodation will also cover the area of undergrounding in the LDNP.



- 3.3.7 The PPA Group is concerned that currently there is incomplete workforce planning and accommodation proposals at the tunnel-heads. The PEI Report does not indicate any collaboration with accommodation providers to overcome existing shortfalls and/or raise standards of suitable worker accommodation.

Material, waste and tunnel spoil

- 3.3.8 The Key Issues Report suggested that the level of construction materials and tunnel spoil generated will place extensive pressure on the transport infrastructure if a road based strategy is followed. Currently National Grid is consulting on both a road based, and multimodal transport strategy (see transport section below). Until a decision has been made it is difficult to appreciate the implications for the materials and waste resulting from the tunnel construction. This is a significant issue that needs addressed before the impacts can be appreciated. National Grid state they are happy to continue to discuss opportunities for the positive use of the tunnel spoil with the PPA Group. However, plans do not appear to have been progressed. A proposed use at Cavendish Dock has been rejected, as the site is part of a SSSI, a SPA and Ramsar, primarily for its bird interest, and National Grid consider that initial investigations suggest there is no reason for its de-notification.
- 3.3.9 National Grid has proposed a materials movement corridor on the causeway forming the southern edge of Cavendish dock. Movement options being considered include conveyors, narrow gauge rail or use of HGVs with traffic control. This route allows direct access to the Port of Barrow as means of importing and exporting materials and waste. However, some of these options may result in closure to the causeway, including a PRoW for the period of use, in addition to possible noise and amenity issues. The PPA Group suggest that there is inadequate information on the storage, movement and final destination of tunnel spoil.

3.4 Transport and connectivity

Transport Strategy

- 3.4.1 National Grid have yet to select the Transport Strategy, however, review of the PEI suggests that the key risks and impacts of traffic movements have not yet been addressed.

- 3.4.2 The PPA Group are significantly concerned that National Grid are not consulting on a single and coherent transport strategy. This is a major issue that has widespread impact across other topic areas, such as visitor economy and waste and material. Additionally, the PPA Group and affected communities need to understand how the project will be delivered and what the mitigation and transport improvements are. This approach is inadequate and therefore the PPA Group cannot support National Grid's transport strategy at this point. Given these fundamental issues it is suggested that a subsequent consultation may be required when National Grid have sufficient information and a single strategy to appropriately address these issues.
- 3.4.3 National Grid conclude that there are no traffic reasons to favour the multi-modal option because of increased flows on more sensitive routes, the road option having a greater impact on the strategic routes which are generally less sensitive. The PPA Group do not accept this conclusion, as it is not clear that this is this appropriate and whether it should apply in all cases. For example, the multi modal strategy would reduce the number of traffic movements though Barrow.
- 3.4.4 Overall, the PPA Group strongly disagree with the assessment of impacts relating to the 'road based' and 'multi-modal' options. The multi-modal option will reduce the scale of HGV movements in some areas, while also having safety and environmental benefits. Additionally the Group are concerned that the cumulative impacts have not yet been assessed.
- 3.4.5 The multi-modal options will have a significant reduction in overall vehicle usage, especially for HGVs. This will reduce emissions and accidents, however, these benefits have not been considered.
- 3.4.6 Furthermore, the PPA Group do not accept National Grid's assertions that railway capacity issues should be a reason for not selecting the multi-modal option. The approach should be to mitigate the rail capacity issues, which would keep traffic off the highway and also provide a legacy benefit.
- 3.4.7 For the central strategic route area National Grid suggest an additional reason for not choosing the multi-modal option is given as the impacts on capacity of the Cumbrian Coast Line, Workington Port and Workington Port rail depot, although it is understood that there is sufficient capacity at Workington Port to accommodate the additional tonnage.

Transport improvements

- 3.4.8 The construction of the NWCC project will require extensive traffic related to the importing (and decommissioning) of material for access and haul roads, construction materials, cabling and waste. There is concern about the cumulative impact of these movements on the transport network especially if a single source is used and a road based approach is adopted. Additionally, a number of rail and road construction sites are proposed to store and deploy materials; these are all along the route and are more concentrated in the areas where underground technology will be used, such as Drigg, Silecroft and Foxfield. The transport infrastructure along the route and in these areas in particular is constrained, therefore, the impact of the movements is likely to require mitigation measures to address pinch points on the network and improve the local highway network, and minimise impact on nearby residents and businesses including at Foxfield Business Park.
- 3.4.9 Fundamentally, there is a lack of appropriate mitigation of traffic impacts on the highway network, which needs to be informed by modelling of traffic flows both for the individual development and for the cumulative impact, and is dependent upon the completion of survey data. It is suggested that mitigation should also address the following, for which no detail has yet been provided; the safe management of traffic on minor roads, the impact of worker accommodation locations – for example for the underground section within the National Park, implementation of Travel Plans
- 3.4.10 Lack of information on mitigation is a serious issue that needs to be addressed to enable a full assessment to be made.

Public Rights of Way (PRoW), cycle ways and paths

- 3.4.11 The NWCC project will have temporary (during construction) and permanent effect on the PRoW across Cumbria and those related to the tunnel head at Heysham. This will include closures, diversions and a reduction in the amenity and ability of users to enjoy the routes.

- 3.4.12 Review of the PEI reveals that the project will have an adverse impact on a number of PRoW, paths and cycleways. Key risks and impacts on PRoW and cycle paths have not been adequately addressed. More in depth assessment is required to understand the extent of these impacts across the area, however, at this stage National Grid are proposing a package of measures to mitigate the closures and disruption to the routes. These will be set out in a PRoW Management Plan (PMP) that will form part of the application for DCO. In addition, a number of specific mitigation measures are proposed in certain locations, these relate to proposed plans for the mitigation of key features such as a proposed Hadrian's Wall Mitigation Plan. These specific plans will also be secured in the DCO. The PPA Group are concerned that at this time there is a lack of clarity on appropriate mitigation measures that are required.
- 3.4.13 While the undergrounding through the Park be supported, in terms of setting, the A5092 transport corridor approach to the Western Lakes, along with the 'view out' of the National Park from Open Access and specific PRoW are undeniably affected by the proposed stretch of pylons that hug the National Park Boundary through Whicham and the Duddon.

Construction Access Points

- 3.4.14 WYG have been provided additional information outside the PEI showing the routes from the main roads, such as the A596, to construction access points. There are a significant number of access points to service the 1000 individual construction sites across the area. Some of the routes are on narrow lanes with tight bends, sharp crests, narrow bridges, NCN cycle routes or past schools, e.g. Beacon Hill School in Aspatria. Access to the Barrow tunnel head is off the A5087 which has residential frontage, on-street parking and a low bridge. No details of how these routes will be safely managed with the additional HGV flows have been provided. This should be part of the public consultation.

Highway Assessment

- 3.4.15 The impact of construction traffic has been assessed based on the average daily flow in the busiest peak four week period – based on engineering judgement. Whilst the principle that the impact should be reasonably prolonged (not just for a day or two) is accepted it is not clear why four weeks is appropriate.

3.5 Terrestrial and avian ecology

Habitats Regulation Assessment

- 3.5.1 The PPA Group are significantly concerned that there has been a failure to progress with the statutory Habitats Regulation Assessment (HRA) of the impacts of the project on internationally important wildlife. This has resulted in a failure to identify risks, such as those associated with the Ravenglass Estuary SAC of undergrounding/HDD operation, and of tunnel option on Morecambe Bay SAC/SPA. Furthermore, the PPA Group are concerned that a number of sites or sections which are hydrologically linked to European or International sites have been scoped out (e.g. South Solway Mosses SAC); Additionally, it is considered that the lack of any assessment of cumulative impacts on ecology, including EU protected sites and species, will affect the timescale for the HRA.
- 3.5.2 This could lead to significant delays to the acceptance of the DCO by PINS if not addressed.

Ecology Surveys

- 3.5.3 Many of the ecology -assessments have been based on incomplete survey data, which will need updating when surveys have been completed. This information will now only be available for incorporation into reports at the ES stage so we will not be able to comment on any of the final ecology evaluations and assessments.
- 3.5.4 Additionally, some assessments provide a conclusion of no significant effect despite the fact that surveys are still ongoing.

Topics Scoped out

- 3.5.5 It appears that the existing incomplete information has been used to scope in or out various designated sites, habitats and species. This approach will not provide a robust assessment until all the information has been considered, and scoping out features prior to obtaining all the data may result in these features being ignored prior to the final ES. Provision of habitat areas in table format should be sought for the development order limits sections.
- 3.5.6 Issues have then been scoped out (habitats and/or species) from certain sections prior to assessing completed survey material. The PPA Group suggest this results in unreliable conclusions on significance of potential impacts.

Non-designated priority habitats

- 3.5.7 The PPA Group are concerned that non-designated priority habitats are not effectively assessed and therefore are not appropriately protected. This is of particular significance in the southern section where undergrounding is proposed which has potential to result in more significant damage to habitats. Additionally, parts of the assessment rely on Aerial Photo Interpretation and therefore it has not been possible to possible to accurately assess the value of most habitats using this approach.

Invasive Non Native Species

- 3.5.8 Although invasive species have been recorded as present or absent within entire route sections there is no detail on location of Japanese knotweed where it may provide a constraint to the works. The PPA Group consider that in view of the large geographic extent of the linear project it is vital that non-native invasive species are dealt with extreme care due to the risk of spread over a wide area posing potential significant risks to biodiversity. In particular – Japanese knotweed can take many years to eradicate, therefore it will be important to deal with this problem well in advance of the proposed construction schedule.

Effective Mitigation

- 3.5.9 The PPA Group are concerned that the mitigation measures outlined are not considered adequate. There is a lack of appropriate mitigation and compensation for impacts on habitats and species; in particular not avoiding key hotspots, inadequate construction methods and compensation for loss and disturbance.
- 3.5.10 Design mitigation will be important to avoid impacts on several County Wildlife Sites and woodland areas. For example, the present route results in woodland areas, including parts of ancient woodland, being lost or the canopy removed. Compensation is proposed by National Grid to comprise planting of a similar area of woodland to that lost. However, loss of mature woodland and in particular ancient woodland cannot be mitigated or compensated for. The first consideration should be the avoidance of woodland through micro-siting but the information provided does not make it clear in most cases whether micro-siting has been considered and why this cannot be achieved.

3.5.11 The PPA Group consider that in all cases avoidance should be adopted, and if this is impossible then the reasons for this need to be highlighted and explained in detail. Additional compensation will be expected where loss of mature/ancient woodland is still being considered. It is also considered that a clear Code of Practice for any development work in the vicinity of ancient or mature woodland.

Protected Species Impacts

3.5.12 Clear rationale behind the selection of specific study areas for additional protected species survey and more detailed habitat/NVC survey is not provided other than an overview of methodology used. It is not always apparent how disturbance to protected species will be assessed and addressed during construction and maintenance phases.

3.6 Historic environment and cultural landscapes

World Heritage Sites

- 3.6.1 The PPA Group are concerned that the key risks and impacts to World Heritage Sites are not adequately addressed. In particular, only one of the three key features of the English Lake District nominated World Heritage Site have been considered. Although the assessment terminology used in the PEI is the same as in the ICOMOS HIA Guidance (2011), it exclusively focuses on the physical historic environment as an attribute of Outstanding Universal Value (OUV). There is a tendency within the suite of PEI documents to treat World Heritage as solely a historic environment issue. However, this approach covers only part of the first of the three themes of OUV which have been identified for the English Lake District. There is a need to ensure that the HIA takes into account the full range of OUV attributes from the three main themes. There is also a need to make sure that the wider EIA also takes into account the full range of National Park Special Qualities. Currently it is not clear that the PEI has done this.
- 3.6.2 Furthermore, the PPA Group consider that there is a failure to provide adequate information and evidence to enable assessment of impacts on the Frontiers of the Roman Empire (Hadrian's Wall) World Heritage site (FRE WHS).

- 3.6.3 The PEI concludes that for both the FRE WHS and the candidate English Lake District WHS, the net effect of NWCC would be "*a slight beneficial significance of effect on this asset as a whole*". This appears to be based primarily on the removal of ENW infrastructure and improvement of the ability to appreciate the physical historic landscape. In terms of the Lake District National Park, this relates only to part of the first theme of Outstanding Universal Value (OUV).
- 3.6.4 The HIA should also assess the potential impact on OUV of the surface treatment of the undergrounded section within the National Park.
- 3.6.5 Without a demonstrably comprehensive HIA it is difficult at this stage to accept the conclusion that NWCC would have "*slight beneficial significance*" for the OUV of the candidate English Lake District WHS.

Historic Environment and Archaeology

- 3.6.6 The PPA Group consider that there is inadequate evidence and assessment of impacts to the historic environment and archaeology across the route, and in particular from underground construction methods including cabling in the Lake District National Park. Undergrounding will have a major impact on any archaeological remains within the corridor and although mitigation can be provided, in terms of evaluation and recording, there is a risk that any archaeological remains could be destroyed on the route and they are a finite and unrenewable resource.
- 3.6.7 A major concern is, however, that the desk based assessment and walkover survey of the route corridor has not, as far as we are aware, been complete; and no viewpoint analysis is provided in connection with potential impacts on the setting of designated heritage assets. It is understood that the results from this piece of work and other projects that have been recently completed (i.e. aerial mapping project/Romans in Ravenglass), have not been used in the PEI. We therefore do not feel at this stage that we have all the information available to be able to ascertain the overall impact on the historic environment.

3.7 Project wide comments

Cumulative impact assessment



- 3.7.1 As stated in the PPA Group comments on the PEI Cumulative Effects Briefing Paper, the adopted four-stage approach which reflects the approach within the PINS Advice Note 17 is welcomed. It is understood that the PEI will only contain stages 1 and 2 as set out in the advice note, and that the EIA procedure will enable decision making as to the actual final cumulative impacts to be assessed, their extent and residual outcomes.
- 3.7.2 As this is such a critical element for decision makers, whilst paragraph 22.1.6 states that *“Consultee comments have been considered during the compilation of this chapter, with the ZoI and assessment methodology amended where appropriate”*, it would be more helpful and clearer to the Planning Inspectorate in the future for a table be provided in the ES setting out whether or not the changes sought by the PPA Group have been accepted, and if they have not then there should be clear justification for doing so.
- 3.7.3 There are a number of specific areas that require clarification, which relate to the assumptions for the distances used for the Zones of Influence identified for each of the topic areas covering: landscape (10km), Socio economics (20km), terrestrial and avian ecology (20km), historic environment (10km), and waste (10km).
- 3.7.4 With regard to marine matters, we note and welcome that Table 22.1 now confirms that the Islet associated with the Morecombe Bay tunnel, consultation with relevant bodies and Government levels and that works in the Duddon and Ravenglass estuaries are to be included.

PEI consultation

- 3.7.5 In a letter dated 21 October 2016, the PPA Group had expressed concern to National Grid that despite a 10-week consultation period running from 28 October 2016 to 6 January 2016, this was a compromise position and had been based on assurances by National Grid that technical information would be released to the Authorities well in advance of the formal consultation date. This length of time was needed to allow all the PEI material to be properly considered and for that consideration to inform the Local Authorities’ consultation response.



3.7.6 However, notwithstanding that assurance, several deadlines offered by National Grid were passed without the technical information being released on time. Consultation responses have to be approved by the various Local Authority Executives prior to issue to National Grid, and there is a significant lead-in time for all Committee reports to be prepared by the Local Authorities. The delay by National Grid in presenting material in the PEI has therefore meant that a full consideration of all the documentation is a significant challenge within the timescales. As a consequence the original request that the S.42 consultation be extended to the 3 February 2017 still stands to enable the PPA group to provide National Grid with a properly considered and approved consultation response, and enable National Grid to have full information on local sensitivities and impacts when it finalises the application ready for the DCO submission.

Lack of information

3.7.7 There has been a general lack of sufficient information presented within the PEI for a full assessment of the potential effects of the development to be carried out by the PPA Group and its specialists at this formal stage of consultation.

3.7.8 There are gaps as well as assumptions that have been made across almost all topic areas (including landscape, ecology, transport, historic environment, socio-economics, noise, hydrology etc). If this is carried through to the final Environmental Statement could lead to incorrect assessments and the wrong conclusions drawn on the likely effects. Additionally, the approach would be inadequate in terms of ongoing engagement with the PPA Group and other organisations. This is addressed in more detail in the topic-by-topic analysis and will be drawn out in the final PEI response.

3.7.9 The PPA Group are concerned that these matters need to be addressed and consulted on prior to the development of an Environmental Statement and the submission of the DCO.