

# **Personal Response to the National Grid Final Consultation – North West Coast Connections Project**

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## **1.0 Introduction**

The intention of my response to the National Grid (NG) NWCC Final Consultation is not to concentrate on the quite obviously appalling environmental consequences of the NG preferred Onshore South Route. I am very sure that these aspects have been more than adequately covered in a very large proportion of the responses submitted. Please refer to those responses from Power without Pylons (PWP), the Kirkby Pressure Group (KPG), Friends of the Lake District (FOLD) and the various Parish Councils directly serving the Duddon Estuary / Valley communities for in-depth opinions on environmental issues concerning the Duddon Estuary and the Furness Peninsula. I see my response as being complementary to, and largely supportive of these groups and organisations.

My response concentrates on more technical issues. In particular, I wish to express my disappointment not only in the manner in which NG has initially presented such technical issues but also the manner in which NG has subsequently responded to attempted query and feedback related to these issues. I also wish to address the confusion experienced by the general public over aspects that NG seemingly dismissed too early or conversely introduced at too late a stage in the overall consultation period which commenced circa 2012.

The response commences with issues relating to those routing alternatives and technologies that myself and others have found particularly interesting, as they seem to offer best utility in a least harmful manner and at an acceptable cost. The other technical issue that follows relates to the introduction of the 132kv Trident line that I consider to be an incorrect and unwarranted addition to the NWCC project.

## **2.0 Formal and Informal Routing Alternatives.**

### **2.1 Offshore South HVDC Option**

The Offshore South HVDC option was very well received at the initial introductory offshore workshops with the great majority of independent participants welcoming and supporting its development. Although some stakeholders expressed support for the Onshore option, this was on condition that there would be mitigation introduced that would overcome the disbenefits of the onshore solution to the satisfaction of all.

However, the Offshore South HVDC option was very rapidly dismissed despite the overwhelming support displayed at the workshops. Some of the reasoning for this dismissal was readily understandable by all. For instance, increased distance and costs due to the avoidance of possible ordnance offshore from the MoD firing range at Eskmeals and potential damage and maintenance issues. However, general opinion concurred that these problems alone should not warrant instant

dismissal and this rapid rejection caused some confusion to most individuals as this Offshore option seemed to solve all of the perceived problems relating to environment issues.

It has been extremely difficult to adequately convey the more onerous perceived problems relating to possible system instability to the general public. From personal experience in presenting these issues at a number of public meetings organized by the various pressure groups (e.g. PWP, KPG etc) I have found that even those with an engineering background can struggle with the sparse explanation given in Document 842\_NG\_NWCC\_HVDC i.e.

3. The remaining HVDC links may need to quickly change their output level to allow the power station to keep exporting the power being generated.
4. While this happens almost simultaneously with an AC connection, with HVDC it takes longer.
5. The HVDC connection needs to swiftly change from following, to generating the system frequency to which the power station will need to synchronise.
6. If it doesn't happen quickly enough the power station may not remain stable and could stop supplying power to the network.

This has led to some considerable frustration as, inevitably, the great majority of people attending such events considered the full offshore HVDC option to be, by far, the most acceptable route. This frustration has been compounded by members of the public not being able to easily access this report from the NWCC website which has led to an overall general conclusion that these difficulties may have been significantly exaggerated to ensure that the option could not be progressed. Very significant feedback suggests that satisfactory explanation was also not available at the consultation events. I myself received a far from adequate explanation from NG staff at the Grizebeck information event in 2015.

Premature and unwarranted withdrawal would seem a reasonable conclusion given that the option was included in the 2014 consultation and it would seem highly unlikely that NG would include a non-feasible option. Despite NG's insistence that the above technical difficulty is a major reason for rejecting this option they have never stated that it cannot be overcome. This is encouraging as various communications with other parties with considerable proven expertise in HVDC technology have concurred that a solution to the possible instability problem can be found. These parties have included both designers and installers (Siemens) and research and development groups (Imperial College, London).

The Imperial group have modelled the system extensively and have shown that this problem can be solved through the development of an appropriate control strategy for redirection of power into the Offshore South route (HVDC links). With reasonable coordination between National Grid, NuGen and the HVDC vendor, the above development should not take long, as no new design or modification to the existing VSC hardware would be required. Subtle adjustments in the control of VSC to meet the stipulated transient performance requirement for different scenarios could be somewhat iterative but should not take more than a year.

The study was carried out by Dr Balarko Chaudhuri and Dr Inmaculada Martínez-Sanz, Imperial College London, October 2016.

The CEO of National Grid has stated that it will take four years to carry out the necessary development and design and to progress through the Office of Nuclear Regulation (ONR) validation process. Dr Chaudhuri's report considers a twelve month period to be adequate for the technical analysis and development which seemingly suggests that the associated ONR processes will take the remaining three years of NG's projected four year task. Surely this cannot be possible especially in the light of

responses from ONR to letters of enquiry from PWP. ONR do not appear unduly concerned by the novelty of the HVDC connection especially given the co-existence of the two northern HVAC lines. There is obviously a time penalty involved in proving satisfactory predicted performance via appropriate system modelling and analysis and subsequent preliminary definition of the required control system software to support stable operation but it seems essential that NG show some realistic justification of the 'four-year' statement or amend it accordingly. If this is not forthcoming it seems that it will be necessary for the various pressure groups and organisations to formally contest the four-year statement (which, allegedly, would take the project beyond the deadlines of the development programme) and to demand the reconsideration of the HVDC route as a primary option.

Formal letters have been sent by the Secretary of Power without Pylons to NG questioning this four-year statement but no satisfactory response has been forthcoming. The report from Dr Chaudhuri's group has also been sent to NG and was logged as a personal response which does not seem entirely satisfactory. No feed-back in any form re the report's content has been received. Given the time and effort expended by concerned individuals and parties and various costs involved, it would seem reasonable to expect a more attentive attitude and a reciprocal effort from NG to provide a more in-depth response.

Please note the following extract from a response received in the last few days from Nugen to a PWP email enquiry relating to NG's predicted four year period:

*'...With respect to program schedule impacts, I'm afraid we do not recognise the comments attributed to Tom Samson and I'm not aware of any basis to propose that the use of off-shore HVDC would delay the project by four years. This is not an assessment that has been made by NuGen...'*

Esa Heiskanen, Chief Project Officer

So where or what is the formal basis supporting Tom Samson's estimate?

Surprisingly, the HVDC Offshore option has recently been re-costed. This seems to be a strange move for an option that was formally dismissed in 2014 and suggests that NG still retain some interest in the route. However, this costing at £3.5 billion is more than twice the original cost. This appears to have been released at an opportune time given OFGEM's consultant statement in the TNEI report i.e.

*"Whilst we do not agree with the discounting of HVDC solutions on the basis of technical grounds alone, there is strong justification for discounting on the basis of cost. "*

Although it is excellent news that OFGEM's opinions of NG's technical arguments appear to be well aligned with those expressed by Siemens and the conclusions of Dr Chaudhuri's report, I have grave concerns over these very high recent NG costings of the overall Offshore HVDC option. I feel that these costings cannot be accurate. This is based upon a comparison to the projected costing of the Western HVDC Link, which comprises a single pair of converter stations in England and Scotland, linked by 385-kilometer 2.2 GW subsea cables operating at 660 kilovolts (kV). The project's total value amounts to €1.1 billion. Doubling the €3.5 million of this overall value that represents Siemens' costs for the required additional pair of converter stations for the NWCC and accepting the remaining cable laying costs (€6.6 million) given that the length of the undersea element alone is approximately three times the proposed length of the NG HVDC Offshore route still results in an overall cost of under £1.5 billion. We are entitled to some explanation for the obvious discrepancy between this figure and the £3.5 billion estimate from NG for their Offshore South HVDC option.

There is another factor that should be taken into consideration. The relevant documentation states that the HVDC cables will need to be laid a significant distance offshore to avoid the ordnance problem

associated with the Eskmeals firing range. It should therefore be possible to maintain a sufficient distance offshore to also avoid the multiple windfarm cable crossings before bringing the HVDC lines into Rossall in a similar manner planned for the Kirksanton-Rossall HVAC option (see section 2.2). Alternatively, the HVDC cables could come ashore at Heysham alongside the existing windfarm lines without crossing them. This could represent very significant relative savings in relation to the Kirksanton to Rossall Offshore HVAC Option costs including those of the planned, associated undergrounding through the LDNP.

## 2.2 Kirksanton to Rossall Offshore HVAC Option

Details of this offshore option did not really come to the notice of the general public until after the formal announcement of the intended undergrounding of the 400KV lines within the Lake District National Park (LDNP) during the NG Kendal stakeholder meeting called on 24/10/16 for the announcement of the dates of the final consultation period (FCP). This meeting was held just days before the FCP commenced on Friday 28<sup>th</sup> October. In reality even those close to ongoing developments were not fully aware of the details of this alternative offshore option until the first weeks of the FCP and many of the public were not fully aware of its detail throughout the FC process. Although not an NG preferred option, its late introduction begs questions relating to due process and the reasoning behind NG's steadfast refusal for any extension to the final consultation period. Expecting people to assimilate relatively complex technical information whilst grasping and fully understanding local environmental implications in such a short period of time and especially over a busy holiday period involving a major religious festival can in no way be considered good practice. National Grid should be widely condemned for the manner in which people's priorities and well-being have been compromised for no apparent reason other than statutory requirements having been satisfied. This is disgraceful and totally unacceptable behaviour.

This is all the more important given the significance of this option. In a similar manner to the HVDC offshore alternative this HVAC option overcomes all of the problems relating to remaining areas along the preferred route being blighted by 50m pylons *i.e.* throughout the Duddon Valley in the setting of the LDNP and across the Furness / Lakeland Peninsula.

Ofgem have recently stated that:

*'We have concerns that NGET's subsea cable cost estimate is too high. We consider that the cost difference between NGET's favoured option involving the tunnel and the subsea cable alternative appears relatively finely balanced and sensitive to individual cost assumptions. There is also a risk that the cost of the tunnel could escalate significantly.....'*

North West Coast Connections – Consultation on the project's Initial Needs Case and suitability for tendering; 14/12/16

This suggests a real possibility that the Kirksanton to Rossall offshore HVAC option could prove to be a less costly option than the NG preferred route involving the unacceptable spoiling of the Duddon Valley plus the Morecambe Bay tunnel. This brings into question NG's rapid discounting of the offshore route that followed its equally rapid and very untimely introduction so close to the commencement of the FCP. A reasonable conclusion would be that this sequence of events invalidates the FCP to an unacceptable extent and a further consultation period is required within which the status of the Kirksanton to Rossall offshore HVAC option is recognised very much as a valid and wholly acceptable alternative and is suitably presented as such to the general public.

### 2.3 Alternative Offshore route

The concept of a relatively short undersea AC connection running outside of the Duddon estuary from, say, Silecroft to Walney was first formally raised as an option at a National Grid Workshop held in June 2015. Those attending the NWCC Duddon Estuary topic workshop established and discussed a range of possible Duddon crossing alternatives which included taking the 400kV lines, via AC cabling, outside the estuary / offshore beyond the impact of the river channel.

The announcement in October 2016 of the planned undergrounding of the NWCC cables through the Lake District National Park (LDNP) down to Silecroft again focused attention upon the possibility of such an AC offshore connection to Walney South and onwards to the proposed Morecambe Bay tunnel at Roose. This led to the development of an outline proposal by Graham Pitts of Power Without Pylons presented to NG in early November for an AC connection to run offshore between anywhere south of the Eskmeals gunnery range exclusion zone and a point west of Haverigg. This proposal calls for the consideration of undersea AC cables running relatively close inshore at sufficient depth until landfall can be made near Roosecote power station. The conclusion was that this alternative would be significantly cheaper than the planned NWCC underground / overhead proposals for the west coast, Duddon Valley and Furness Peninsula whilst also removing many disadvantages relating to environmental aspects and community, transport, farming and local economic disruption.

Several other individuals and groups have further investigated this option. Although initially discussed at an NG workshop, it has not been formally investigated or costed by NG and has not been identified as a potential alternative. However, this alternative does have a great deal of potential that warrants further investigation. It has all the advantages of the other formally investigated offshore alternatives in terms of removing all the problems associated with the preferred overland route.

Given that NG established a formal Workshop with significant public involvement to investigate such alternatives, it seems very short-sighted to have not provided sufficient follow-up to progress and develop ideas and concepts such as the examples above that could certainly be considered to possess relevant potential. This renders the Workshop inconsequential in terms of public involvement and it should not be regarded as being evidence of successful co-operation.

### 3.0 Duddon Tunnels

The proposed Duddon tunnels represent a partial solution to mitigation within the Duddon valley / estuary. They quite obviously eliminate the requirement for 400kV overhead lines with associated 50m pylons down each flank of the estuary upstream of Millom then across the Duddon at the head of the estuary and on to the planned tunnel heads north of Askam. However, to eliminate a requirement for sealing end compounds and pylons completely will require further undergrounding from either of the proposed tunnel heads north of Askam to Ireleth. The planned additional spend on tunnel construction and undergrounding area will ensure that the setting of the LDNP is not blighted by both pylons and sealing end compounds. In particular, views into the National Park to the Scafell range from Paradise and the area along the A595 to Askam are cherished by local residents and visitors to the region and should not be seriously compromised by 50m pylons and associated cabling. Failure to underground in these areas could also seriously affect the relationships between Duddon communities, with Askam suffering major visual intrusion whilst others will not be so affected.

A Duddon tunnel with appropriate undergrounding at either end would mean no overground works in the setting of the LDNP and could also accommodate cabling for any future reinforcement of supply north of the Duddon. This would mean that the current 132kV pylons through the Whicham Valley,

around the Duddon and through Kirkby-in-Furness would be completely removed. Such a solution would adequately justify increase in cost.

The problem here is again with the costing at £250 million net whereas the cost of a similar length tunnel under the Menai Straights to serve the planned Wylfa development is quite clearly stated on the web at £100 million. I am not sure whether this is net or gross i.e. whether the full cost has been discounted to take into account the saving on pylon spend. Comparison to other recent or current tunnel costings in the UK or overseas also show the Duddon tunnel costings to be extremely high.

This costing issue is evident across all the elements of each option. It is extremely difficult to generate any form of comparative cost analysis and, when questioned, NG flatly refuse to discuss their costings. It is very interesting to note that OFGEM are also concerned with the Kirksanton to Rossall Offshore HVAC costing in comparison the Morecambe Bay Tunnel estimates. The lack of transparency here is considered by many to be unacceptable.

#### **4.0 Trident 132kv line**

A major surprise announcement at the NG Stakeholder meeting called on 24/10/16 in Kendal was the intention to maintain the existing 132kv line in order to manage additional output from the planned extension to the Haverigg wind farm. This was certainly a major shock to the people of Kirkby Parish who were already facing a higher density of new pylons passing right through Kirkby-in-Furness and Becksidside than any other community on the southern route. This was especially so given that assurances had previously been made during the NG 2015 information days that the 132kv line would be removed. The fact that the existing steel pylons would be replaced by wooden Trident poles was not generally considered by Kirkby Parish residents to be any compensation for the intrusion of not one but two pylon lines plus sealing end compounds at crossing points with the additional disturbance of undergrounding the 132kv cables. To announce this four days before the commencement of the final consultation period cannot be considered acceptable. Expecting people to thoroughly digest and assimilate this additional layer of information before the imminent commencement of the consultation events has to be considered extremely bad practice.

I do not accept the validity of this inclusion of a local ENW planning issue in a NSIP especially at this stage in the consultation process. This has been a major distraction to all during a period where major concentration has been required to assimilate the massive amount of information relating to the major issue i.e. the impact of the proposed 400kv line and associated pylons. It is my opinion that confusion caused by the unnecessary inclusion of this local planning issue in a NSIP submission invalidates the aims and objectives of the final consultation i.e. to present the complex issues of the NWCC project to all those affected by the development in a clear and readily understandable manner. The Trident line and the Haverigg wind farm are not part of the NWCC project and it is very difficult not to view their addition as anything less than a possible attempt to divert people's attention and concentration away from those issues that are very much part of the NWCC project. With this in mind, I will be making every effort to bring this issue to the attention of the Planning Inspectorate and all other relevant parties over the coming months.

The inclusion of the Trident line is bad enough in itself but over recent weeks it has become apparent that this inclusion was totally unnecessary. Although planning permission for the Haverigg wind farm expansion had been granted, it appears that planning permission for the required substation had not been applied for. Enquiries from concerned residents and local Parish Councillors as to the status of the proposed wind farm expansion have revealed that the project in its entirety has been on hold for a significant period of time. This is entirely due to Government withdrawal of subsidies for onshore

wind farm development. Hence the lack of a planning application to Copeland Council for the required substation. Surely NG were aware of the inherent uncertainty relating to this situation at the time of their announcement that the 132kv Trident line was specifically required to provide capability for the Haverigg wind farm expansion at the stakeholders meeting, 24/10/16?

The natural progression from this uncertain state was confirmed on 20/12/16 in a communication from Craig Mullen, Communications Manager of the Partnerships for Renewables Development Company Ltd, advising ENWL to withdraw their connection offer for Haverigg wind farm. This, of course, removes the stated requirement for the 132kv Trident line. Unfortunately, the opportunities to pass this information out to all those interested parties and individuals before the 6<sup>th</sup> January deadline, given the Christmas and New Year holidays, has been seriously limited. Surely NG were aware of this company's concerns re the financial feasibility of their expansion, given the withdrawal of Government subsidies, or should it be the responsibility of concerned residents and councillors to identify anomalies in planning application processes and follow this through to determine the status of such a significant addition to NG's preferred plans? Is this not direct evidence of individuals being seriously distracted from the core issues of the NWCC project? Not to mention the many individuals and groups that will have expended effort questioning the practical and environmental aspects of the Trident line and, indeed, the overall validity of its inclusion in the NWCC consultations.

What of the validity of the final consultation itself? Having already questioned the inclusion of the Trident line, what are the implications of its removal? It is included in all the final consultation documents and the route is defined in all the relevant maps. Plans include details of the necessary undergrounding at crossover points and the siting of sealing end compounds. No doubt people attending the consultation meetings will have presented many questions and will have received responses from NG advisors relating to this transmission line that is now no longer necessary. National Grid will no doubt have to change their plans and also withdraw / modify their advice.

It therefore seems that the all-important 'final' consultation is seriously faulted, as are most of the associated documents. This needs to be very seriously addressed by the Planning Inspectorate and a further consultation should be considered.

Any attempt to now validate the Trident line on the grounds of reinforcing the Millom supply should be strongly resisted. This would be akin to an admission that the general public have previously been provided with incorrect / false information. This is in addition to that fact that the Millom supply is not part of the NWCC project and is a separate local planning issue involving ENW.

## **5.0 Further Information and Issues**

I have been involved with Power Without Pylons for some 18 months, initially offering help at the NG 2015 information days at Grizebeck and Askam plus providing assistance in terms of technical advice in some areas. My involvement greatly increased when I established the Kirkby Pressure Group in August 2016 in close association with Kirkby Parish Council. At this point I also joined the Power without Pylons Committee. This has led to a great deal of involvement across most elements of the NWCC project and a great deal of close contact with Kirkby Parish residents. Talking and listening to people entering and leaving the Grizebeck and Kirkby School final consultation meetings throughout their respective days left me with the overwhelming impression that they were very dissatisfied with the ability of the NG staff to satisfactorily answer their queries. They were leaving with many questions unanswered. The other main complaint was the virtual reality representation of the pylon positioning was not considered to represent what local residents could see from various viewpoints. It seems that,

without exception, the VR was not considered to be a successful tool for the illustration of the proposed developments.

I hope that my response along with the many others that you will no doubt receive will result in the investment of the relatively small extra costs to achieve 100% mitigation by either taking the connection offshore either partially or totally or by introducing the Duddon Tunnel with appropriate additional undergrounding.

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