UISENIS POWER LIMITED

33 King Street
London SW1Y 6RJ

Tel: 020 7600 7900
Fax: 020 7811 4466

Catherine Williams
Head of Commercial Regulation – Electricity Transmission
Ofgem
107 West Regent Street
Glasgow
G2 2QZ

Project.transmit@ofgem.gov.uk 27 May 2014

Dear Catherine

Uisenis Power Limited – Response to Project TransmiT: Further Consultation

Our response to the specific consultation questions is attached to this letter. In summary:

1. We would strongly agree that WACM 2 presents a significant improvement over the current charging methodology in respect of sharing. We believe that robust modelling assessments have been undertaken which underline the qualitative analysis that WACM 2 will achieve a good balance between the objectives of the CUSC and the aims of Project TransmiT.

2. For HVDC we believe the charging approach should be consistent with current onshore charging for the AC transmission network. Whilst WACM 2 will incorporate HVDC into the charging methodology it will create a disparity between charging for HVDC and AC technologies. Evidence was put forward for equivalent treatment of charging for HVDC through the CMP213 modification. However, the size and scale of the sharing aspects of the modification has perhaps lead to the detail of HVDC being somewhat of a secondary issue. We believe further work is necessary to ensure the technology is fully understood and a charging methodology is applied that is consistent with current AC network charging – anything else would be discriminatory. We would like to see onshore charging for HVDC considered in its own right through a specific CUSC modification in the near future.

At this stage, considering the time to get to this point, we fully support the implementation of WACM 2 as soon as practicable, and prior to April 2016 if at all possible.

Yours sincerely

Nick Kay
On behalf of Uisenis Power Limited

Question 1: Do you agree with our interpretation of benefits to consumers of implementing WACM 2, including revised impact assessment modelling?

Whilst it is difficult to model a energy markets as complex and dynamic as exist in the UK, the developments undertaken to the previous impact assessment modelling, including incorporating the effects of the capacity market, have helped improve the accuracy of the results. We believe that the interpretation of the modelling results, when combined with the qualitative analysis, shows that WACM 2 can be implemented with a high level of confidence that it will achieve the desired outcome.

We would strongly agree that WACM 2 presents a significant improvement over the current charging methodology, and will achieve a good balance between the objectives of the CUSC and the aims of Project TransmiT.

Question 2: Do you agree that the revised impact assessment modelling captures concerns raised during August 2013 consultation about the NGET modelling?

Yes, in the main, although we would question the point on the level of cost reflectivity of WACM 2 when the marginal investment is an HVDC line. The view presented in the consultation is that *"the cost of HVDC is significantly higher than the cost used to calculate the tariffs using the existing charging principles."* We would question this statement for the following reasons:

- Whilst the cost of an HVDC converter station would be more expensive than a single AC substation of equivalent rating, the transmission capability of DC is significantly better than traditional AC. AC will require compensation equipment at regular intervals along the route of a line of any significant length, increasing the overall complexity and cost of the equivalent AC solution.

- A relevant example is the Western HVDC Link or 'Bootstrap' where we understand that the equivalent AC reinforcements developed and considered would have required major work at some ten substations along the 600km+ route of the AC lines, the majority of which would be socialised under the current onshore charging methodology. No intermediate compensation would be required along the 420km+ length of the HVDC line that is currently being implemented.

- The Western 'Bootstrap' provides an interesting comparison of the two technologies. Evidence from Ofgem/DECC, Scottish Power/National Grid and The Western Link project company would suggest that the cost of the HVDC solution is similar, if not less than AC solutions considered:

    1. Joint SPTL/NGET Planning Statement Western Link (July 2012) paragraph 2.5.2:

"Analysis of the existing onshore system showed that the volume of additional capacity required could only be provided through the construction of new transmissions circuits and upgrading of certain existing circuits. Due to the number and scale of these works it was concluded, in this particular case, that the cost of onshore reinforcement would be similar to that of an offshore HVDC."

2. Joint DECC/Ofgem ENSG report 'Our Electricity Transmission Network: A Vision For 2020' (February 2012) [page 70]:

   A number of alternative onshore solutions were considered to increase the boundary capability of the B6, B7 and B7a boundaries:
   A number of projects have already been planned to ensure that the maximum capability (4.4GW) of the existing circuits can be realised. Further reinforcement would be required in the form of either two new 400kV transmission circuits: one from the West of Scotland to Lancashire and one from the East of Scotland to North East England or reconductoring existing 400KV double circuit between Harker and Strathaven and additional series compensation in these circuits to provide the necessary boundary capacity. These options were discounted for three main reasons:

   (a) They did not represent the most economic solution. The total length of the new circuits would be in excess of 600km; this resulted in a total project cost that was higher than the undersea HVDC option.

   (b) The construction of new onshore overhead line routes would have a greater disruption to land and higher visual impact.

   (c) The timescales required to progress a project through the planning and consents process as prescribed in Appendix F would result in higher constraint costs.

   For these reasons it was decided not to progress with onshore AC reinforcements."

3. Extract from the Western HVDC Link Website http://www.westernhvdclink.co.uk/qanda.aspx:

   "We selected a subsea cable from a number of options that we considered, including overhead lines and underground cables across mainland Britain. Taking into account the overall costs, potential impacts on local communities and potential environmental effects, we believe a subsea cable is the most appropriate solution."

- The Western 'Bootstrap' is not the only example of this. AC solutions were also considered for the Western Isles HVDC Link to connect generation on the Outer Hebrides to the mainland. According to the TNEI needs case assessment for the Western Isles Link commissioned by Ofgem in 2010: *"Alternative AC options [to the*

preferred HVDC solution] of equivalent rating were considered in the 2009 submission and were found to be considerably more expensive both in terms of capital and whole-life costs."

- Other important benefits of HVDC, as outlined in the stakeholder statements above, are reduced visual and environmental impact, and therefore reduced consenting risk with reduced implementation timing and reduced disruption. Recent experience suggests that building an equivalent onshore transmission link could take more than 10 years from concept to commissioning. This is likely to be halved for an equivalent HVDC transmission link, therefore leading to a significant period of time where the HVDC link would provide relief from constraint costs, which would not be possible from the equivalent AC onshore link. This benefit could be reflected in a discount on the HVDC TNUoS charge to account for the constraint costs saved.

Question 3: Do you agree with our minded-to position in light of new evidence discussed below and the responses to the consultation set out in Appendix 2?

Yes, we agree with your minded to position on sharing based on the evidence currently available.

However, we remain concerned that the charging methodology proposed for HVDC would be inconsistent with current AC onshore transmission infrastructure. We welcome that the consultation document acknowledges that it may be appropriate to socialise some of the costs of HVDC converter stations if this would be consistent with the treatment of AC substations on the wider network.

Clearly additional work needs to be undertaken on HVDC, but we would make the following comments on specific paragraphs in the consultation document:

- Para 1.66. HVDC and AC cost comparisons - we would accept that the cost of and individual HVDC converter station is higher than an equivalently rated AC substation. From the evidence submitted to the Workgroup it is apparent that approximately half of the cost of a HVDC converter station comprises AC equipment. However the full extent of equivalent HVDC and AC solutions should be compared, including all distance and non-distance plant items on the complete circuit solutions. As shown on the Western 'Bootstrap', two converter stations will be required for the HVDC solution compared to major work at ten major substations for the equivalent AC solutions.

- Para 1.67. HVDC converter benefits - VSC converter stations, as proposed for the island links, will provide benefits to networks wherever they are situated, not just at the remote ends. On the Western Isles Link the reactive capability of the converter at Beauly (the mainland end) will be very helpful in managing voltage and system

stability in that area of the network. Evidence for this was provided, and confirmed by SHE-Transmission, through CMP213 Workgroup, and we understand a reactive power study has been commissioned by National Grid which will consider the reactive capability of HVDC converters. Once fully understood, the sophisticated capability of VSC converters should be planned into the network design, deferring the need for traditional AC compensation equipment, or avoiding the need altogether.

- Para 1.68. AC lines may require multiple substations - evidence on this point can be provided through the comparison of HVDC and AC solutions considered for the Western 'Bootstrap' and Western Isles HVDC links.

HVDC and its capability and characteristics must be properly understood before final decisions are made on charging methodology. We believe further work is necessary to achieve this, further evidence is coming forward all the time through the likes of technical bodies such as CIGRE; practical experience from the development and operation of HVDC installations by the Transmission Owners; and the experience of leading technology suppliers who have test facilities available to demonstrate how the technology performs and the benefits it can provide. We would like to see this additional work undertaken through a specific HVDC CUSC modification in the near future.

Question 4: Do you agree with our minded-to position to implement in April 2016?

No. Project TransmiT was launched back in September 2010 with an original timetable having an implementation date of April 2012. Given that this would be four years later than originally envisaged, and the extent and detail of the discussion and analysis undertaken to date, we believe that implementation should be as quick as possible, preferably before April 2016. If April 2015 is not possible then consideration should be given to a mid-year 2015/16 tariff change, as contemplated by the CMP213 Workgroup.