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16<sup>th</sup> November 2010

The Office of Gas and Electricity Markets (Ofgem)  
9 Millbank,  
London.  
SW1P 3GE

Dear Sir

**SUBJECT: Project TransmiT – A Call for Evidence.**

*Introduction:*

Pelamis Wave Power (PWP) is a Scottish based world leading wave energy technology developer. Established in 1998 (formerly as Ocean Power Delivery Ltd) to develop and manufacture the Pelamis wave energy converter, PWP have achieved a number of world's first:

- First electricity export from an offshore wave energy converter to an onshore grid (0.75MW full-scale prototype Pelamis machine, European Marine Energy Centre, 2004).
- Construction and commissioning of the first array of marine energy converters (2.25MW; three full-scale Pelamis P1 machines under supply contract to Enersis and connected to the Portuguese grid, 2008).
- Acceptance of the UK's first commercial supply contracts for marine energy converters (order from E.ON UK and ScottishPower Renewables for Pelamis P2 machines, one each, to be installed and demonstrated at EMEC, with power being produced from the first unit; 2010, second to be delivered 2011)

The future success of PWP's business is highly reliant on its ability to connect Pelamis machines and projects to the UK electricity network; a failure to be able to do so would be a failure for the sector in the UK. As such PWP appreciates Ofgem's call for evidence on the topic of transmission charging as this issue presents a significant risk to the company being able to expand its business in the UK.

The delivery of a successful wave industry in the UK is recognised as being capable of providing a substantial contribution to the UK's efforts to decarbonise its electricity generation portfolio by harnessing a large scale, indigenous, renewable energy source, therefore PWP applauds the current initiative to review the charging and investment methodologies associated with the UK's electricity transmission system in order to ensure critical infrastructure can be delivered, fit for the purpose of delivering a low carbon step change to the UK's generation mix.

*Overview:*

Wave and tidal energy have been identified as being able to provide a significant contribution to the future UK's energy mix, capable of providing up to 25% of current UK electricity demand from a low carbon, indigenous renewable energy resource<sup>1</sup>. Delivering this opportunity would capture significant economic benefits to the UK and provide a net wealth generating industry through an export market which would stretch across a global resource. Both the UK and Scottish Government have recognised this potential and are putting in place enabling actions to attract private investment into the development of this sector, such as the Scottish Government's initiative of a banding the Renewable Obligation Scotland to present the worlds most attractive market mechanism through a five ROC multiple.

Unlike conventional, thermal generation, which has shaped the current transmission system and charging methodologies, renewable generation is fixed to generate at the location of the resource itself. In this sense the wave sector is exposed to the extreme challenges of the current transmission charging and investment regime by being located at the peripheries of the UK transmission network (or not on it at all). This is due to the very nature of the geographic distribution of the resource it seeks to harness. As such, and given that no level of locational signal would serve to direct the industry to build projects in regions other than these (unlike wind), the current methodologies for charging and investment act as a substantial additional barrier to commercial investment within a new sector which both the UK & Scottish Government have identified as offering substantial, long term social, economic and carbon saving opportunities.

Prohibitive connection charging and liability underwriting results in an absence of market opportunities for manufacturers such as PWP; a direct effect of this is to reduce the attractiveness of their businesses to private investors. **This lack of security on market access is the most significant risk to the nascent marine industry in transiting to commercial scale in the UK.**

*Transmission Network Use of Systems (TNUoS):*

PWP believes there urgently needs to be action to reduce the financial impact of what are projected, under current methodology, to be exceptionally high charges in the regions of the UK which are of priority interest to the wave sector. Specifically these are the regions of the Shetland Islands, Orkney Islands and the Western Isles, all of which require transmission upgrades (or new builds) in order to facilitate the connection of renewable projects of scale in these regions.

PWP believe there are a number of options which the Government and Ofgem could pursue to achieve this:

- Capping of Transmission Network Use of System (TNUoS) charges levied on use of island connections. PWP would recommend this avenue is worth exploring in further detail within this review. Current TNUoS levels for the northern region of the Scottish mainland have been proven not to adversely impact on renewable project investment decisions; therefore PWP would suggest this charging level be applied as a cap to charging associated with island connections.

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<sup>1</sup> The Carbon Trust – Marine Energy Challenge.

- Compensate annual transmission charging by an additional “island/transmission” ROC, or similar revenue support. It’s anticipated that this would require a separate multiple calculated on an interconnector-by-interconnector basis. This is likely to add complexity to project investments, and may have further reaching impacts on the RO market that would see considerable industry opposition.

In parallel with the first option PWP would also recommend that Ofgem and the UK Government look at developing bespoke codes and standards, or derivations from existing ones, in order to allow the renewables sector to more efficiently utilise island transmission connections, and in doing so; potentially reduce wider impact on users of socialised costs associated with a capped approach. For example this could include allowance for [non-firm] connected capacity on island connections to significantly exceed firm access/peak transmission capacity; there by allowing the constraining economics associated with exceedance of variable connected capacity at the end of a transmission connection to define its usage. Such an approach would most certainly result in a more efficient use of the transmission asset and therefore be in keeping with Ofgem objectives. In a similar fashion; more efficient use of transmission assets at the peripheries could be achieved by implementing a “postage stamp” approach to use of system charging, providing the unit charge was appropriately set. However the implications of employing a UK wide postage stamp approach on socialised costs for all users may well be prohibitive.

*User Commitment and Underwriting:*

In addition to the current charging methodology, PWP would also urge the process of user commitment and underwriting be reviewed with the objective to reduce this parallel barrier for project development and construction commitment associated with the current transmission system. Again; the upgrades to the peripheries demonstrate the inappropriateness of the current system such as:

- Timing for user commitment- substantial delays associated with waiting for multiple parties/projects to achieve required level of confidence (i.e. S36 and financial close) to commit to FSL/upgrade costs before transmission build programs can commence. Given that key projects, with regards to user commitment, are currently large wind projects, and planning consent can see long delays, the result is compounded delays on transmission upgrades. Alternatively; smaller projects wishing to secure firm capacity on upgrades which are being driven by (a) large project(s) but haven’t secured planning or project finance are being put in a position to underwrite huge liabilities (potentially £1m/MW) or risk not having a [firm] connection solely on the project schedule of the driving project.

PWP would suggest applying a lower threshold of committed capacity on transmission upgrades in order to approve transmission operators spend on strategic infrastructure upgrades in a more timely fashion.

- Scale of user commitment- at £1m/MW of liabilities; the financial commitment required to secure a grid connection for a 10.5MW wave or tidal project would represent the largest single private sector commitment within the wave and tidal sector globally to

date (either equity or project investment). For an emerging sector dealing with over coming substantial technology risk this level of additional commitment at this early stage will most likely be prohibitive and threatens the sectors ability to generate a market in the UK.

PWP would suggest, in the same vein of capping TNUoS; user commitments are also capped.

- Profile of user commitment- current underwriting profiles produce peak exposure for projects the day before connections are energised and export commences. In reality; the peak risk to Ofgem is far earlier within the transmission build programme and reduces as generation projects near completion of build, therefore Ofgem and Government should seek to review and revise underwriting profiles accordingly.

PWP would suggest a reduced user commitment requirement also has a different underwriting profile which more accurately reflects risk and assists in reducing unnecessary financial exposure for investors.

PWP acknowledges the risk of stranded transmission assets, however given both the quantity of low carbon generation required to meet the UK's obligations and the almost globally unrivalled concentration of renewable resources on the outer islands of Scotland; PWP believes the current assessment of risk associated with committed capacity to network upgrades, and the related scale of the upgrade, doesn't reflect the long term best interest to the UK consumer.

The emerging wave industry has the ability to provide high levels of capital recycle for UK consumers through a largely domestic supply chain for renewable projects delivering material reductions in the UK's carbon emissions. However PWP believes that failure to resolve the key issues raised within this response will undermine the sectors ability to generate domestic market opportunities and in doing so; force the sector to relocate to alternative, overseas markets in order to grow their businesses.

Yours sincerely;

A handwritten signature in black ink, appearing to read 'Andrew Scott', with a stylized flourish at the end.

Andrew Scott

**Project Development Manager.**

**Pelamis Wave Power Ltd.**