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Dear Lewis

Natural Power Consultants Ltd. Response to Transmission Investment for Renewable Generation

Natural Power Consultants (NPC) are expert consultants to the wind energy industry - both onshore and offshore. We continue to be involved in the development and operation of some of Scotland's most successful wind farm projects. We are currently working on Scottish projects at all stages of design. Our most recent success is Crystal Rigg a 50MW wind farm located in the Lamamuir hills which Natural Power has developed in association with Fred Olsen Renewables. This wind farm has recently started generating and is currently the largest on shore wind farm in the UK. We have also acted as developers engineers on Rothes, a 50MW wind farm currently under construction in Morayshire which is due to be operational by spring 2005 and Ballindalloch a 55MW wind farm also in Morayshire. Off shore we are engineers for Robin Rigg a 150 MW wind farm planned for the Solway firth. This project has been granted planning permission and should begin construction during 2005. Natural Power has a series of other projects in advanced stages of the planning process, all with a good prospects of success.

As NPC are acting for clients with projects at every stage of development which will be expecting connection during the in the BETTA go live and grid upgrade timescale we are interested in the systems put in place by OFGEM to regulate the transmission companies and the effects of these systems on renewable energy development within Scotland

General Comment

Within Scotland there are currently a greater number of applications for connection than connecting space on the transmission grid. Under RETS 1 work has been identified which will provide more grid access through upgrades to the Scottish transmission system. However, due to the nature of renewable energy and the current Scottish grid condition, connection is likely to be the significant constraining factor in the development of renewable projects and therefore in achievement of UK and Scottish Executive targets.

The current situation in Scotland is that there are approximately 1500 MW of generation projects already in possession of firm grid offers from SSE for connection within Scotland. NGC have recently completed consultation on the options for allocating GB transmission rights under BETTA. Therefore these existing offers from SSE are yet to be confirmed by NGC and the terms may alter. This 1500 MW forms part of a total 10GW of projects currently at some stage of development within Scotland. Not all of these projects will clear the planning process and therefore only part of this capacity will require connection to the Scottish system. The RETS 1 upgrade will provide Scotland with approx. 2.5 GW of additional capacity but this will not be available until around 2010. It is therefore vital that any changes brought about by OFGEM do not delay in the implementation of the RETS1 through re-appraisal and cost benefit analysis.

Reply to views invited 7.7

- 7.7.1 Revenue deriving from the adjustment mechanism should generally be based on the funding costs for investment from 2004 to 2007. OFGEM may also want to consider ways of encouraging the network companies to find ways of accepting new generation prior to investment, thus generating some revenue to assist in additional investment due to renewable generation.
- 7.7.2 Outputs should be identified to assist in establishing whether licensees have delivered investment that is fit for purpose. We would suggest that any new investment should be able to demonstrate an immediate use of 20% from commissioning. Even with a potentially high attrition rate after planning permission there are still enough Scottish projects available for connection over RETS1 period which could be allowed onto the system in advance of investment. Sensible investment in the grid should therefore be able to demonstrate an immediate utilisation. In advance of an investment a utilisation program should be developed between transmission companies, distribution companies and existing / potential system users. The planning process should continue after infrastructure completion to bring the system up to full capacity.
- 7.7.3 Where constraints on the system will be high, planning consents should be put in place before offering any new connection in advance of investment, otherwise the connection rights would not be bankable.
- 7.7.4 We are of the opinion that the cost of capital should be consistent with that used in setting the main price controls
- 7.7.5 We are of the opinion that it would be appropriate to identify revenue drivers to determine the level of revenue that a licensee would be entitled to each year.

Reply to views invited 7.8

- 7.8.1 No Comment.
- 7.8.2 No Comment.
- 7.8.3 Assessments on the economic benefit of transmission upgrades, as viewed against the annual cost of financing and maintaining the transmission system upgrades, should be carried out based on: the current requirements for transmission system for upgrade, the tangible future requirements (perhaps based on connection offers) and the longer term requirements as determined through consultation with industry. In addition the benefits of the investment to the transmission licensee such as increased security of supply and reduced maintenance cost and be considered. Further, much of the existing transmission systems within Scotland will need replacement in the medium term even if no new generation was planned. All of these issues must be considered when deciding on the economics of replacement against the cost of constraint.

- 7.8.4 No Comment.
- 7.8.5 Where constraints are high transmission companies may want to consider a system of 1st class and 2nd class grid connection rights. Where access has been granted under 2nd class status commercial arrangements would be put in place which differ from normal 1st class arrangements. These would be put in place for a set period of time giving the transmission company the opportunity to upgrade the grid connection. 1st class rights would then be granted.
- 7.8.6 Long Term Access Agreements: A typical wind farm project is for 20 – 25 years. It is highly unlikely that such a project will be abandoned once operational. It is far more likely that the project will be upgraded to larger turbines.
- 7.8.7 Access Rights: It is important that charging mechanisms are put in place which accommodate a large amount of generation embedded within the transmission and distribution networks. Current arrangements are designed to accommodate new GW generating stations where transmission grid investment takes place as part of the project. When a grid upgrade is required due to a large number of smaller generators connecting all generators are charged equally for access to the upgraded system, not just the new generation projects which cause a system upgrade requirement.
- 7.8.8 Tradable transmission rights: We believe that the competition encouraged by a tradable access rights system would increase wind farm development costs and increase the risk that access rights will be granted but not utilised for significant periods of time. A tradable system could further encourage speculative requests for access from large developers with projects that, because of planning issues, are never delivered.
- 7.8.9 Distribution connected generators exporting energy and / or increasing flows on transmission networks: If OFGEM are to seek such generators making an appropriate contribution toward the cost of transmission networks we should consider the following:

A good transmission system should operate to the following principles

(1) The monopoly held by the transmission companies must be effectively regulated. This aspect is managed effectively by OFGEM at the moment.

(2) The pricing structure controlled by the regulator must give long term signals which can be used by those planning a generation development to manage project risk. This is not the case at the moment with charging reviews on transmission at 1 year intervals, while distribution charges are reviewed every 5 years. There should be some harmonisation to give long term confidence.

(3) Pricing should be stable. This is not the case at the moment due to the high charges for connection in the north and incentives for location in the south. This creates a differential in charges of to £30 per kW installed. Furthermore developers are unable to plan ahead, as charges in the north or payments in the south will change significantly once their development, or the developments of others, start generating. In effect the incentive payments are a mirage, but the penalties are very real. If you connect the same MW to the distribution network, a completely different set of lesser charges apply, so developers have an incentive to connect at 33kV even if the project costs are higher.

Renewable energy is most abundant in remote areas in the north of the UK and most demand is located in the south. We must not penalise renewable generation north

of the midlands so heavily that it is not economical to invest in, because good sites near to demand in the south east are almost impossible to locate and even harder develop. The result of this charging policy could be a lack of investment in renewable energy anywhere in the UK and abject failure to meet government targets.

(4) Generate low prices. OFGEM have been successful in generating low process for the consumer to date, however if the pricing structure is not changed the consumer will end up paying for the failure to set up a sensible pricing system which reflects the reality of new generation projects at this time, which are all renewable energy based.

In Conclusion

It is our view that it is perfectly feasible, manageable and within the requirements of the Scottish transmission licensees to allow 500MW of generation per year to be connected in Scotland bridging the gap to RETS1 completion. Some of this energy will flow from distribution systems (particularly in Scotland with the lower transmission / distribution voltage threshold) onto the transmission system. We believe that the transmission system would, through more innovative management, cope with the additional generation. Such an approach would meet the short term requirements of the transmission licensees and the renewables industry, allowing continued growth within the renewables sector, in parallel with grid developments. This parallel approach is crucial to sustaining renewable energy developments in the coming years. It would also remove some of the uncertainty in predicting requirements ensuring better utilisation of new grid capacity once this capacity has been constructed.

Connection restraint is becoming the major constraining factor on renewable energy developments within Scotland. Failure to accommodate a reasonable amount of new generation in the next five years could seriously damage the industry. Failure to address connection charging issues will also discourage investment.

If you have any thoughts please feel free to contact us at any time.

On behalf of Natural Power Consultants Ltd.

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