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Dear Tony

Western Power Distribution Embedded Generation Connections in the South West and South Wales

National Grid's role as System Operator is to ensure the safety and security of the transmission network, whilst working collaboratively with our customers and stakeholders to adapt to and positively support changes in the wider industry.

In the last year, levels of embedded generation connections across Southern and South West England and Wales have reached unprecedented levels, presenting challenges on both the physical capacities on the network and the operational requirements to manage this scale of embedded generation. Building on our existing relationship with Western Power Distribution (WPD), National Grid and WPD have effectively worked together to efficiently connect 2.6GW of distributed generation in the region, overcoming technical challenges and maximising the use of existing assets, with a further 3.4GW connecting (some following reinforcement works) over 2016/17.

Going forward, following extensive technical assessment, South Wales is an area of significant challenge. The South Wales region has seen unprecedented growth in levels of embedded generation of all types, and specifically plant that is to be used for supplying energy at peak demand times. Unlike other areas of the Transmission Network, which have recently seen significant closures large thermal generation, there have been none in South Wales. These factors, together with small reductions in levels of demand in the area, has in the short term, reduced the capacity available for some types of generation connections in the South Wales Group (Grid Supply Points).

The majority of generation in the group is controllable fossil fuel generation, required to run to meet peak demands when output from less controllable types of generation such as wind and solar are not available. However, at times of peak demand when all conventional generation will need to be generating to meet demand, fossil fuel generation may be constrained to manage system limits. At times when there is high output of renewable generation, transmission connected generation could also be constrained or not generating at all to manage system limits efficiently within the South Wales Group (Grid Supply Points).

Studies and technical data now confirm that the Transmission Network in South Wales has reached capacity under peak conditions, resulting in new connections being limited in the short term as a result. These limits will also apply to connecting further generation technologies relied upon to generate at peak demand periods such as market driven storage, as in the short term there will not be capacity available for storage providers to sell energy back to the network on peak. However, renewable types of generation such as solar and wind can continue to connect, utilising existing capacity.

Moving forward National Grid is reviewing the future strategy for creating additional transmission capacity in South Wales, with a range of options currently being developed, many utilising new technologies to maximise the efficiency of both the Transmission and Distribution Networks and exploring more innovative solutions that may bring further capacity on line in the short term.

Long term transmission reinforcement solutions still require National Grid to carry out significant levels of investment in South Wales, with works attracting long lead times for completion meaning that further capacity is not likely to be available on the Transmission System for the short term connection of additional small thermal generation.

The working relationship between National Grid and Western Power Distribution has allowed for significant development of technical and commercial solutions to increase the connection of generation to the distribution network and we are keen to continue to build on this relationship into the future, supporting the development of new technologies and focusing on a common goal of facilitating embedded generation connections.

Should you wish to discuss this matter further, please don't hesitate to contact me.

Yours Sincerely,

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

Julian Leslie
ELECTRICITY NETWORK DEVELOPMENT MANAGER

FOR AND ON BEHALF OF
NATIONAL GRID ELECTRICITY TRANSMISSION PLC