



Understanding best practice regarding interruptible connections for wind generation: lessons from national and international experience

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In order to meet the 2020 renewable targets, the UK Government has proposed different supporting schemes (such as Feed-in Tariff and Renewable Obligations) that have allowed the acceleration of distribution generation. The challenge for the Distribution Network Operators (DNOs) is to find technical and commercial innovative ways to manage efficiently the output of renewable generation and to increase the connection of low carbon technologies in a cost effective way.

This paper is an interesting piece of work that explores and compares different methods for managing interruptible connections that have been recently implemented or proposed under diverse regulatory and market contexts. The study evaluates four experiences of interruptible connections with focus on wind generation but not limited to this technology. Two of them are domestic experiences from Great Britain (Orkney ANM Project, Connect and Manage) and the other two are international experiences, one from the United States of America – California (Renewable Auction Mechanism) and the other one from Ireland and Northern Ireland (Wind curtailment in tie-break situations). The selection criteria of these case studies are based on the level of maturity of the wind generation market (and the associated regulatory framework), the use of smart solutions and the practice of curtailment methods.

The study assesses the different Principle of Access – POA (or curtailment allocation methodology) that different DNOs and system operators are currently offering to DG customers, risk allocation (curtailment risks and investment risks) among the different parties and identifies key specific lessons for DNOs. In terms of POA, the paper has identified different practices of actual implementation such as Last-in First-out (LIFO), Pro Rata and Market Based. Pro and cons of each approach have been discussed including the social optimality of the different methodologies. From these, LIFO is one that exposes last generator to the system marginal curtailment costs while Pro Rata exposes generators to the average curtailment costs. Market-based approach appears to be the preferred option because it provides a better signal of the real curtailment costs. However, high transactions



costs and the possibility of gaming are among the main disadvantages of this approach. Regarding risk allocation, the study states that system operators transfer the risk of being curtailed to the customers (i.e. by the payment of balancing system charges). In relation to investment risks, the study shows that in general regulation allows the socialisation of transmission network upgrades but not the socialisation of distribution network upgrades. Among the main lessons to DNOs are those related to the determination of selecting the best investment option (reinforcement versus smart solutions), the option of reinforcement (as a way to reduce the payment of compensation due to curtailment), provision of relevant information regarding the status of the network (increases transparency and facilitates the evaluation process), good practices of stakeholder engagement (provides certainty and confidence to generators) and testing the option of auction mechanism for procuring small renewable generators (where price and connection costs are bid).

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