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Electricity Industry Colleagues and Interested Parties

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Development of 'Power Available' concept

Dear Industry Colleague,

The high wind conditions that took place across Scotland in 2011 resulted in a number of balancing actions being taken by National Grid on wind farms to reduce their output to alleviate constraints on the electricity transmission system. These events were highlighted in a consultation issued by National Grid in September 2011[1] which set out the issues of managing intermittent generation and invited views on the matter. Following the closure of the consultation, we discussed the industry responses within the established industry forum Commercial Balancing Services Group (CBSG).[2] At the time, we believed this was the most appropriate forum to discuss such issues as it allowed for the consideration of cross code impacts and developments. The aim of the discussions was to develop potential solutions to operationally manage the increasing amount of renewable and inflexible generation connecting to the electricity transmission system in the future. In addition to this, we have continued to engage with the wider industry to communicate the importance of participation in the Balancing Mechanism (BM).

Following the discussions within the CBSG, the group have initiated proposals to develop the concept of "Power Available" for wind farms. This concept proposes to use data such as wind speed to calculate the potential power that would have been produced by a wind farm if they did not have their output curtailed in the BM. This value could then be used to assist with the integration of intermittent generation into current balancing arrangements for example as a reference point for settlement of bid/offer acceptances rather than the current method of using the generator's Final Physical Notification (FPN). This approach would however, retain the obligation to submit accurate FPNs.

In National Grid's opinion, the CBSG has taken this proposal as far as it can. We therefore intend to progress this work under the guidance of the Grid Code Review Panel and will bring forward proposals for the Panel's consideration to the next meeting on July 18th 2012. This purpose of this letter is to ensure that the broadest range of stakeholders are aware of this work and can participate either through their Panel representative or more directly if they feel this is appropriate.

[1] http://www.nationalgrid.com/uk/Electricity/Balancing/consultations/
[2] http://www.nationalgrid.com/uk/Electricity/Balancing/CommercialBalancingServicesGroup/

The aim of the work will be to develop the concept of Power Available such that it may be used to support the operation and settlement of the system against a backdrop of increasing intermittent generation. This may then lead to relevant industry code modifications, e.g. to the Grid Code and the Balancing and Settlement Code (BSC). The group will initially be set up as a Grid Code Work Group and formally report to the Grid Code Review Panel to ensure that the collective work on intermittent generation is captured under the same governance arrangements. We envisage that this group will take around 6 months to fully develop the concept, but we anticipate that the group will agree an implementation plan in line with its assessment of the generation which may benefit from Power Available.

We are aware of other work streams being carried out on intermittent generation in the Grid Code such as C/11[3] and more recently; high wind speed shutdown. Whilst these topics are concerned with separate issues and are at different levels of progression, there is a need to ensure coordination and sharing of information between topics where relevant. Accordingly, they will be continuing as separate Work Groups but report to the Grid Code Review Panel. The Panel may initiate further informal workshops in this area, from time to time, as issues necessitate this.

A draft Terms of Reference can be found attached to this letter which contains the proposed scope for the group to develop this work.

If you wish to discuss the content of this letter or have any further queries please contact Steve Lam on 01926 653534 in the first instance.

Yours sincerely

Ian Pashley
Electricity Codes Manager

[3]BM Unit Data from Intermittent Generation
http://www.nationalgrid.com/uk/Electricity/Codes/gridcode/consultationpapers/

Power Available Workgroup
[Draft] Terms of Reference

Governance

1. The Power Available Workgroup will be established under the Grid Code Review Panel (GCRP).

2. The Workgroup shall formally report to the GCRP.

Membership

3. The Workgroup shall comprise a suitable and appropriate cross-section of experience and expertise from across the industry, which shall include:

    - National Grid
    - Transmission Users
    - Wind Turbine Manufacturers
    - Wind Industry Experts

Meeting Administration

4. Workgroup meetings shall be defined as necessary by the Workgroup chair to meet the scope and objectives of the work being undertaken at that time.

5. National Grid will provide technical secretary resource to the Workgroup and handle administrative arrangements such as venue, agenda and minutes.

    The Workgroup will have a dedicated section under the Grid Code part of National Grid's website. This will enable information such as minutes and presentations to be available to a wider audience. The link to the Grid Code Workgroups page is http://www.nationalgrid.com/uk/Electricity/Codes/gridcode/workinggroups/

Scope

6. The Workgroup will:

- Identify how the concept of Power Available can be implemented by:
    - Creating a technical standard to calculate Power Available across different turbine manufacturers
    - Identify the method by which data will be collected
    - Identify the obligations on wind farms to collate data
    - Identify how data will be aggregated and converted into a Power Available signal
    - Assess the accuracy (based on time intervals) required for the provision of such data
    - Identify the technical equipment required

- Examine any required information systems changes

- Quantify the benefits to wind farms that can be gained from Power Available by:
    - Examining the potential volumes of generation that can utilise such a signal for settlement purposes, within both current and future connections

- Review the information that is currently available to wind farm operators and assess the value of this to National Grid as National Electricity Transmission System Operator (NETSO).
    - Take into account any analysis carried out by the high wind speed shutdown Workgroup

- Identify additional items of information which could be of benefit and assess the value of providing these to National Grid as NETSO
    - Take into account any analysis carried out by the high wind speed shutdown Workgroup

- Assess the investment required to implement a minimal Power Available signal versus a highly accurate signal aggregated on a per turbine basis

- Examine how Power Available will operate under different scenarios such as:
    - high wind speed shutdown
    - turbine faults

7. The Workgroup will also:

    - Take account of and feed into the "high wind speed shutdown" work being carried out under a Grid Code Workgroup

    - Take account of the work in C/11 – BM Unit data from Intermittent Generation. This proposed a concept of calculating a generator's Maximum Export Limit (MEL) based on predicted/actual wind speed

    - Take account of relevant international practice and the approach taken in European Code development.

Deliverables

8. The Group will provide updates and a Workgroup report to the GCRP and relevant industry Panels which will:

    - Detail the findings of the Group;

    - Highlight any consequential changes which are or may be required.

    - Provide a recommendation on how to progress the solution(s)

Timescales

9. It is anticipated that this Workgroup will develop an implementation plan in line with its assessment of generation that can benefit from Power Available and its development and connection timescales.