

# Wind Dispatch Down Reports

## TSO Response to Comments on Proposed Methodology for Calculating Curtailment and Constraint

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31 May 2016



## 1. PURPOSE OF DOCUMENT

The purpose of this document is to outline the Transmission System Operators (TSOs) response to comments received from Industry on the proposed new and more accurate methodology for calculating<sup>1</sup> the volume of curtailment and constraint applied to windfarms controlled by TSOs in Ireland and Northern Ireland. Comments were received from two respondents to the proposed methodology and a summary of these are outlined in this document.

## 2. BACKGROUND

The EU Renewable Energy Directive (2009/28/EC) requires TSOs to prioritise renewable energy generation. Sometimes measures are taken to turn-off or dispatch-down renewable energy for system security reasons. In these circumstances TSOs must report this to the regulatory authorities.

In 2011 the TSOs began publishing an annual renewable dispatch down report to satisfy the requirements set out in the EU Renewable Energy Directive. This report used data available from the Single Electricity Market (SEM) for a certain type<sup>2</sup> of controllable windfarm in Ireland and Northern Ireland. The data in SEM did not define whether dispatch down was due to curtailment or constraint, therefore this was estimated by the TSOs based on an agreed set of assumptions with industry, as outlined in the annual reports.

Since 2013 the TSOs have issued quarterly reports to a certain type of controllable windfarm in Ireland and Northern Ireland. The reports and the assumptions were developed in conjunction with industry through the DS3 Advisory Council in order to aid transparency on the level of curtailment and constraint applied to windfarms. Similar to the annual reports, the differentiation of the level of curtailment and constraint is estimated based on available data. These reports were issued one quarter in arrears as the full data set was not available until then.

In mid-2015 the TSOs developed, with the Distribution System Operators in Ireland and Northern Ireland, a report template that each controllable windfarm would receive each quarter on the level of curtailment and constraint applied to them. In February 2016 the

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<sup>1</sup> Proposed Methodology for Calculating Curtailment and Constraint; 22/02/2016

<sup>2</sup> The data obtained was for windfarms which were registered in the SEM as Variable Price Taking Generators (VPTGs). The level of constraint and curtailment for Autonomous Price Taking Generators (APTGs) was estimated based on the level of constraint and curtailment applied to VPTGs.

TSOs sought feedback from Industry on the proposed calculation methodology to be used in determining the volume of curtailment and constraint.

### 3. TSO RESPONSE TO INDUSTRY COMMENTS

#### 3.1. Introduction

Comments were received from Brookfield Renewables and IWEA. The TSOs welcome the comments received and have made a number of amendments to the reports and calculation methodology based on these comments. Certain feedback could not be incorporated during this time and reasons for this are outlined in the following sections.

#### 3.2. Fixed Horizontal Slicing Methodology

Both respondents commented on this proposal and felt that it was contrary to the SEM Committee Decision outlined in SEM-12-090b and that the proposal would incorrectly flag constraint events as curtailments. They proposed that constraint events always take precedent over curtailment events.

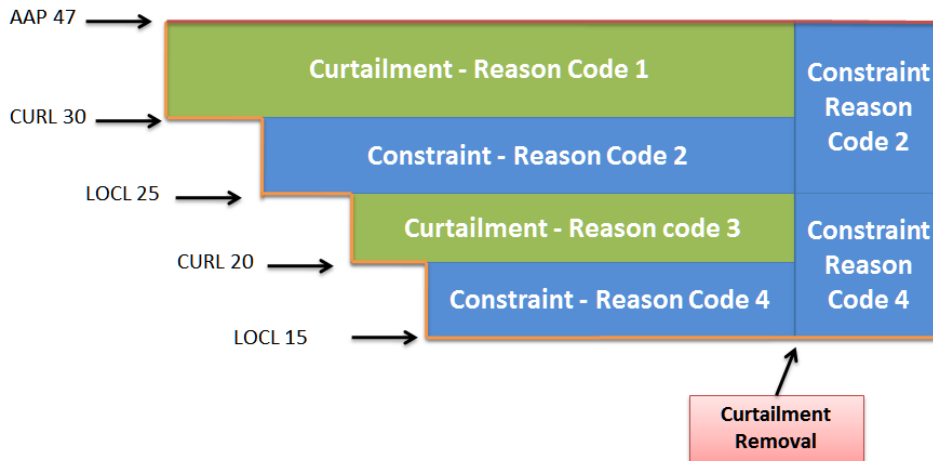
The TSOs believe that the proposal is in line with the SEM Committee Decision and consistent with communications from the TSOs on how the wind dispatch tool calculates dispatch instructions. The TSOs, however feel that a refinement is necessary in one instance of removing a curtailment and outline this below.

There are three unique aspects to dispatch down of windfarms as follows:

- a) **Applying a constraint or curtailment:** A constraint refers to the dispatch down of a single or group of windfarms based on a localised transmission system issue, whereas curtailment refers to a pro-rata dispatch down of all windfarms in Ireland/Northern Ireland. Due to the nature of dispatch down instructions being issued at a point in time there is a requirement to use the fixed horizontal slicing methodology as proposed by the TSOs. The wind dispatch tool issues the dispatch instruction output based on a percentage of the Active Power Output and not the Available Active Power. For example if a constraint has been applied to a windfarm due to a localised transmission system outage and a global curtailment is issued due to high frequency issues then this curtailment volume will not have been as large for this windfarm, had a previous constraint not been applied. In this instance it would be incorrect to categorise the previous constraint as a curtailment as they are for two unique reasons. If a further constraint is issued due to demand falling, making the localised transmission system outage more onerous then the volume of this constraint is calculation based on the Active Power Output. Again it would be incorrect to categorise the curtailment as a constraint since all other windfarms were subject to dispatch down due to the high frequency issue and these are separate and unique reasons. Furthermore when the dispatch down is issued this would be based on known reasons (e.g. system demand, wind levels), therefore these can be correctly categorised.
- b) **Relaxing a constraint:** If a windfarm has been dispatched down due to a localised transmission system issue and this is then being relaxed, then the volume of the dispatch is based on the Available Active Power of the

windfarm. The fixed horizontal slicing will continue to calculate the volumes as outlined in the TSOs proposal.

- c) **Removing a curtailment:** If a dispatch down due to global system reasons is being removed then the dispatch instruction is issued to the level of the lowest active constraint, if applicable. As the global curtailment is no longer applicable as this time it would be incorrect to use the fixed horizontal slicing approach. The TSOs will therefore refine the proposal such that when a curtailment is removed, the volume of dispatch thereafter will be categorised as a constraint, with the reason code applicable to the constraint directly following each removed curtailment level as illustrated in the diagram below.



### 3.3. Other Comments

**Q: Do the time periods and designation used in the tool align with the time period designation used in the SEM Trading and Settlement Code? (Brookfield)**

The reports will be based on the actual spot times of wind dispatch down instructions and one minute Active Power Output and Available Active Power SCADA sent to the TSOs from the windfarm. The reports issued will display aggregated 30 minute average Active Power Output and Available Active Power volumes due to the large amount of data. The Active Power Output will not align with data in the SEM due to different measurement source.

**Q: How does the proposed reporting system reconcile a frequency event on a wind farm, when a sample of one minute is being used for the Actual Output measure? (Brookfield, IWEA)**

This phase of the reporting will not incorporate frequency adjustments. Many windfarms are currently implementing the new frequency response curves required under DS3. The TSOs will keep this proposal under review and will consider incorporating this as part of future reporting if it is felt necessary to do so.

***Q: How will regions be used within the Wind Dispatch Down Tool and how will the general rulesets be deployed? We would appreciate more information on this from EirGrid Group, an explanatory document on the tool or a webex demonstration would suffice. (Brookfield, IWEA)***

Regions will only be used as part of the reporting and will only indicate the broad geographical region in which the windfarm is situated. A list of windfarms and the reporting region are included in the User Guide which accompanies the Quarterly Reports.

***Q: We would value the addition of a “Year-to-Date” column added to the Quarterly value columns at the end of the report. (Brookfield, IWEA)***

This request will be added into the report templates from Quarter 2 onward as the new reports are only being utilised from Quarter 1 2016.

***Q: IWEA requests that the report caters for time spent in different categories. It is possible that over the period of a report, a windfarm could be in both category (1) and category (2), and the detail associated with each of these would be very useful and show the benefit of being in category (2) over category (1). Consideration could be given to having separate reports for each category where applicable. (IWEA)***

This request could not be facilitated as part of this phase of reporting. The TSOs will however provide the windfarm with the 30 minute Active Power Output, Available Active Power and the dispatch down volumes. The windfarms can utilise this raw data and prepare their own unique reports from this.

***Q: IWEA requests that the general All Island, ROI and NI information be made publicly available. (IWEA)***

The aggregated all-island, Ireland and Northern Ireland reports will be made publicly available.

***Q: EirGrid have recently kicked off a piece of work to assess optimising the use of existing connections, this may result in a move away from assessing sites based on the minimum of installed capacity (MW) and Maximum Export Capacity (MW), this should be considered in this piece of work and Section 3.3.1 “Wind farm Capacity” should be open to adjustment in advance of next year if required. (IWEA)***

The windfarm capacity will be revised according to the methodology used by EirGrid and SONI when the reports are being prepared.

***Q: The consultation paper outlines that the one minute SCADA MW signal of the available active power (AAP) received from the windfarm will be used in the calculation as this real-time signal received from the windfarm is used by the Wind Dispatch Tool when calculating the level of pro-rata dispatch up to be applied to an individual windfarm. Confirmation is required that the real time data is used, and not the AAP at the time of original dispatch down. (IWEA)***

The real time one minute Available Active Power SCADA signal will be used to calculate the volume and this will not be fixed based on the Available Active Power issued at the time of the dispatch down.

***Q: IWEA would like clarification around the raw data time periods, specifically we seek confirmation that the period for the raw data aligns with the current time period of 00:00 to 00:00 that is used in the SEMO report. (IWEA)***

The reporting timeframe will be a three month period and will cover 00:00 to 00:00.

## 4. CONCLUSIONS

The TSOs have made a number of refinements to the new Wind Dispatch Down reports and calculation methodology based on comments received from industry. These reports will be issued one month following the end of each quarter<sup>3</sup>. This reporting and the methodology will be frozen until Q1 2017 when the TSOs will review this again with industry and discuss whether any changes are required.

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<sup>3</sup> The first reports for Quarter 2016 will be issued in May 2016. Reports will be issued one month following the end of each quarter thereafter.

## ABBREVIATIONS

TSO	Transmission System Operator
SEM	Single Electricity Market
VPTG	Variable Price Taking Generator
APTG	Autonomous Price Taking Generator
IWEA	Irish Wind Energy Association
SCADA	Supervisory Control and Data Acquisition