



GATE 3 FREQUENTLY ASKED QUESTIONS

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SECTION 2 - GATE 3 CONSTRAINT ANALYSIS, CONSTRAINT REPORTS, CONSTRAINTS AND CURTAILMENT

1. What are constraints and curtailment?
2. What is the background to the Gate 3 Constraint Reports and what is the difference between the Gate 3 constraints Reports and the PGOR reports that were issued in 2011?
3. When can I expect to receive my constraint report?
4. When does the validity period for the Gate 3 Connection Offers commence?
5. What information will be contained in the constraint reports?
6. Will the report contain any information on energy payments associated with constraint and curtailment?
7. Can you explain the difference between Constraints Reports and Firm Access Quantities?
8. Do the Firm Access Quantities (FAQs) that are listed for my project impact on my constraints or curtailments?
9. How realistic are the results in the reports?
10. How was wind dispatched in the constraint modelling?
11. Can you clarify how EirGrid came up with the ranges in the Gate 3 constraint reports?
12. Do the constraints models assume pro-rata curtailment across all controllable wind?
13. What power flow assumptions are used for the North South Interconnector
14. I would like to get additional scenarios studied for my project. Can EirGrid carry out these studies for me?

1. What are constraints and curtailments?

Constraint is when a generator's output is reduced to relieve transmission system overloads. This is typically associated with the loss of one element of the transmission system leading to a redistribution of powerflows resulting in a line or transformer rating being exceeded. Curtailment is when a generator's output is reduced due to system reasons such as SNSP limits being exceeded or for frequency control.

2. What is the background to the Gate 3 Constraint Reports and what is the difference between the Gate 3 constraints Reports and the PGOR reports that were issued in 2011?

The Commission for Energy Regulation (CER) direction CER/08/260 'Criteria for Gate 3 Renewable Generator Offers and Related Matters' instructed EirGrid to "issue estimates, generally with the offers, of the likely incidence of constraining off of the recipients' generation output from the date of commissioning of the generator until all necessary transmission reinforcement works are expected to be completed".

In the period since publication of the CER direction CER/08/260, the Single Electricity Market (SEM) Committee has been consulting on Principles of Scheduling and Dispatch including rules around tie-break situations. PGOR Reports were issued to Gate 3 applicants by EirGrid in 2011 as directed by the CER as an interim measure to provide information to customers prior to the final decision by the SEM Committee on tie breaks as referred to above. These reports were based on a set of dispatch assumptions that were agreed with the CER at the time.

The SEM Committee have made a set of final decisions on tie-break decision since the PGOR reports were published. The Gate 3 constraint reports take account of these final decisions.

3. When can I expect to receive my constraint report?

The constraints reports will be published by area. The constraints reports will be issued on or before the end date by which the offers are to be issued for that area. The end dates for offer issuance are as follows:

Area	Estimated Date Range for Issue	Estimated Date Range for Expiry
K	24 Apr – 3 May	4 Jul - 15 Jul
D	8 May- 31 May	17 Jul – 12 Aug
H2	8 May- 31 May	17 Jul – 12 Aug
H1	8 May- 31 May	17 Jul – 12 Aug
B	4 Jun – 28 June	13 Aug – 6 Sep
F	4 Jun – 28 June	13 Aug – 6 Sep
J	4 Jun – 28 June	13 Aug – 6 Sep
E	10 Jun – 5 Jul	19 Aug – 13 Sep
A	17 Jun – 12 Jul	26 Aug – 20 Sep
G	24 Jun – 12 Jul	2 Sep – 20 Sep
C	24 Jun – 12Jul	2 Sep – 20 Sep
I	24 Jun – 12 Jul	2 Sep – 20 Sep
Non-Wind	1 Jul – 19 Jul	9 Sep – 27 Sep

Note that applicants will receive information on their Associated Transmission Reinforcements (ATRs) for your project along with your constraint report.

4. When does the validity period for the Gate 3 Connection Offers commence?

As per the CER directions [CER/08/260](#) CER Direction on Criteria for Gate 3 Renewable Generator Offers and [CER/09/191](#) Direction on Conventional Offer Issuance Criteria and Matters Related to Gate 3, the duration of the validity period for Gate 3 Connection Offers is 50 business days. This period commences on receipt of your Constraints Report. If Gate 3 applicants do not sign their Gate 3 Connection Offer before this 50bd period is up, the offer will expire. It is important to note that although applicants will receive information on ATRs

with their Constraint Report, the ATRs are not connected to the validity period of Gate 3 Connection Offers.

5. What information will be contained in the constraint reports?

The main body of the report contains the results of the constraints modeling for each node in the area. Nodal results are presented in both tabular and graphical format. The levels of both constraint and curtailment are detailed for each year from 2014 to 2021. There is also some information on overall system results so that customers can compare the results for their node against average system results.

The report also contains background and supporting information associated with the constraints modeling.

6. Will the report contain any information on energy payments associated with constraint and curtailment?

The constraint reports assess the 'physical' levels of curtailment and transmission constraint that generators might expect to experience in the period from 2014 through 2021. Whether a generator is compensated for the curtailment/constraint and the amount of any such compensation is not examined in the reports.

7. Can you explain the difference between Constraints Reports and Firm Access Quantities?

Firm Access is primarily related to receiving compensation payments when dispatched below the market schedule. When a wind generation unit is dispatched down by the System Operator (EirGrid or SONI) it may be entitled to compensation for lost output by the Market Operator (SEM-O) but this depends on a number of different factors including the controllability of the unit and its Firm Access Quantity (FAQ). If the unit is eligible but has no firm access then it will receive no compensation for lost output. If the unit is eligible and fully firm then you will receive compensation for all of the lost output at the system marginal price (not REFIT). If the unit is eligible and has partial firm access it will be compensated up to its firm access level. The Gate 3 constraint reports will provide an estimate of the amount of time that wind generation at a node is expected to be constrained or curtailed each year.

8. Do the Firm Access Quantities (FAQs) that are listed for my project impact on my constraints or curtailments?

Firm Access Quantities were accounted for in the Gate 3 constraint reports when dispatching constraints in constraint groups. The modelling used the December 2012 FAQs. FAQ is not considered in dispatch in any other scenario e.g. curtailment or constraints outside a constraint group.

9. How realistic are the results in the reports?

The actual levels of curtailment and constraint may vary from those forecast in the reports as the analysis is based on a set of input assumptions such as the level and timing of uptake of Gate 3, roll-out of transmission reinforcements, treatment of interconnection with Great Britain, fuel prices, demand growth, treatment of Northern Ireland generation and transmission etc. Also, assumptions are made with regard to operational rules such as limits on the instantaneous wind penetration, operating reserve requirements and minimum conventional generation requirements necessary to operate the power system with a large amount of variable generation. The operational rules employed in the analysis differ from those actually employed in the future with a resulting impact on curtailment and constraint levels.

While production cost models produce optimal answers, these outcomes may not be achievable in real-time because of factors that are difficult to account for in the models e.g. perfect foresight. It was attempted to counteract this to some extent by making conservative assumptions in some cases. If there were a material change to certain assumptions there is a risk that such an outcome will not be within the results range of this study. On balance the results should be realistic though given some of the conservative assumptions used and also considering the fact that the results are presented as a range.

10. How was wind dispatched in the Gate 3 Constraints Modelling?

The SEM Committee have decided on the dispatch rules for the SEM (SEM-11-062, SEM-11-105, SEM-13-010 and SEM-13-012). The modelling used in this study follows all of these decisions.

The dispatch principles are summarised as follows:

- Priority dispatch hierarchy for price-taking generation
- Constraint to be applied before curtailment
- Access rights to be reflected when dispatching tie-break situations in constraint groups
- Pro-rata dispatching of tie-break situations outside of constraint groups including dispatching for curtailment

An iterative post-processing routine was used to properly allocate constraint within constraint groups.

11. Can you clarify how EirGrid came up with the ranges in the Gate 3 constraint reports?

The results are presented as a range to account for the uncertainty associated with them. This range was constructed by using an upper and lower set of curtailment results. The lower range of results is based on the curtailment results from the PROMOD models used for the Gate 3 constraint studies. The upper range is based on adding the energy that was exported on the interconnectors back on to the curtailment results from the models. Even though this may represent a pessimistic view that the interconnectors would not be able to

export any excess wind, it could also be interpreted as taking account of other factors, for example as lack of perfect foresight or a change in the conventional generation dispatch leading to increased curtailment.

12. Do the constraint models assume pro-rata curtailment across all controllable wind?

Yes and it is assumed that all controllable wind that should be controllable, is controllable.

13. What power flow assumptions are used for the North South Interconnector

Prior to the Meath-Tyrone 400kV Interconnection Development being built, the Louth-Tandragee Interconnector is assumed to be limited to flows of 200MW from South to North and 300MW from North to South.

When the Meath-Tyrone 400kV Interconnection Development is in place, the line is treated as a normal contingency. In other words a N-1 standard is applied to modelling the line.

14. I would like to get additional scenarios studied for my project. Can EirGrid carry out these studies for me?

EirGrid will consider carrying out additional studies on the basis of an agreed fee. Any studies that are carried out would be subject to the availability of resources. Please contact Customer Relations if you wish to discuss.