

# Weekly Operational Constraints Update

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Applicable from 25 November 2019 to 01  
December 2019 (Week 48)

Rev 29 November 2019

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## **Disclaimer**

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## Explanatory Notes

- The purpose of this Weekly Operational Constraints Update is to provide information on any forecasted significant network congestion or other issues that could potentially restrict dispatchable generation in a particular area or to flag if dispatchable generation is required in a particular area. These constraints are in addition to those presented in the monthly Operational Constraints Update document which should be read in conjunction with this document.
- In the analysis, a suite of N-1 contingencies are applied to the base case powerflow, and the resulting flows and voltages are compared against the Operational Security Standards. The N-1 contingencies include the tripping of each item of transmission plant and each generator transformer. Groups of generators / demand / wind etc. can be scaled up or down to determine a secure region of operation (known as transfer analysis or transaction analysis).
- The cases incorporate the latest generation and transmission outage information at the time of the study. This information is published on the EirGrid and SONI websites.
- Typically, from a dispatchable generation perspective the worst thermal constraints occur at peak system demand, and therefore only peak system demand scenarios are studied using transfer analysis. If required, other studies are performed, such as system demand valley where high voltages may be an issue.
- The wind levels in the various scenarios assume a flat profile across Ireland or Northern Ireland. We do not test Ireland wind levels above 1500 MW as, typically above these levels, constraints on dispatchable generation are not as binding due to the availability of the wind generation.
- The binding constraints on the flow on the North-South Tie Line from a thermal and voltage perspective tend to be due to thermal constraints on the Ireland side, save for specific Northern Ireland outages. This is why the Inter-Area Flow (North-South Tie Line Flow) Constraints Forecast below is only studied against Ireland wind generation.
- There may be other reasons, apart from voltage and thermal limits that lead to constraints, such as frequency, transient stability and adverse weather conditions. These are usually observed and dealt with close to real-time.
- Moyle Interconnector is limited to 80 MW export due to constraints on the Scotland side. National Grid Electricity Transmission plc performs daily studies to ascertain if this can be increased. Please note that the figures below in relation to interconnectors pertain to the Ireland/Northern Ireland side only.
- Should any of the study assumptions materially change during the week, due to a forced outage for example, we will endeavour to perform new studies and publish results on the next working day.

## Study Assumptions

### Generator and Transmission Outages

Generator and transmission plant outages as per published here:

[All-Island Generator Outages](#) – Under REMIT Publications

[Ireland Transmission Outages](#)

[Northern Ireland Transmission Outages](#)

### Demand

All studies are performed at Weekday Peak System Demand unless otherwise stated

| Jurisdiction     | Weekday Peak System Demand (MW) | Weekend Peak System Demand (MW) |
|------------------|---------------------------------|---------------------------------|
| Ireland          | 5050                            | 4600                            |
| Northern Ireland | 1600                            | 1350                            |

### Initial Interconnector and Tie Line Flows

|                           | Flow (MW)   |
|---------------------------|---|
| EWIC                      | At zero wind 250 MW Import (GB to IE)<br>At 2000 MW wind 200 MW Export (IE to GB) |
| Moyle                     | N/A   |
| North–South Tie Line Flow | 0 MW Northern Ireland to Ireland / Ireland to Northern Ireland                    |

## Constraints

The forecast constraints below are at Weekday Peak System Demand.

### South Generation Constraints Forecast (TCG Type: MW; Limit Type B) as per Operational Constraints Update

| Ireland Wind Generation (MW) | Minimum South Generation (MW) | Maximum South Generation (MW) |
|------------------------------|-------------------------------|-------------------------------|
| 0                            | 500                           | 1530                          |
| 1000                         | 0                             | 1530                          |
| 2000                         | 0                             | 1150                          |

### Cork Generation Constraints Forecast (TCG Type: MW; Limit Type B) as per Operational Constraints Update

| Ireland Wind Generation (MW) | Minimum Cork Generation (MW) | Maximum Cork Generation (MW) |
|------------------------------|------------------------------|------------------------------|
| 0                            | 300                          | 1070                         |
| 1000                         | 0                            | 1070                         |
| 2000                         | 0                            | 950                          |

### Inter-Area Flow (North-South Tie Line Flow) Constraints Forecast

| Ireland Wind Generation (MW) | Maximum Northern Ireland to Ireland flow (MW) | Maximum Ireland to Northern Ireland flow (MW) |
|------------------------------|---|---|
| 0                            | 390   | 390   |
| 1000                         | 390   | 390   |
| 2000                         | 390   | 390   |

## Interconnectors

| Ireland Wind Generation (MW) | Maximum EWIC Import (MW)* | Maximum EWIC Export (MW)* | Maximum Moyle Import (MW)* | Maximum Moyle Export (MW)* |
|------------------------------|---------------------------|---------------------------|----------------------------|----------------------------|
| 0                            | 500                       | 530                       | 442                        | 380                        |
| 1000                         | 500                       | 530                       | 442                        | 380                        |
| 2000                         | 500                       | 530                       | 442                        | 380                        |

\* Values pertain to the Ireland/Northern Ireland side of the interconnectors only

## Coolkeeragh C30 Running

| Northern Ireland Wind Generation (MW) | Northern Ireland Demand (MW) above which C30 must be running with GT8 off | Northern Ireland Demand (MW) above which C30 must be running with GT8 operating as a synchronous compensator | Northern Ireland Demand (MW) above which C30 must be running with GT8 operating as a generator |
|---------------------------------------|---|--|--|
| 0                                     | 1550  | 1608   | Not required   |
| 450                                   | Not required  | Not required   | Not required   |
| 900                                   | Not required  | Not required   | Not required   |

## Other Constraints/Notes/Risks

| Jurisdiction               | Constraint/Note   | Reason   |
|----------------------------|---|--|
| Ireland / Northern Ireland | System Operator trading on Interconnectors will only be employed for system security reasons. | Due to the transition to the new market arrangements we are setting a high bar to trade.<br><br>We are currently trialling the trading arrangements and we will provide an update when trading for priority dispatch reasons is phased in. |
| Ireland                    | Moneypoint 2 (MP2) is currently unable to export.   | Transmission system outage.  |

|                  |  |   |
|------------------|--|---|
| Ireland          | There may be a requirement for an additional Dublin unit for load flow reasons during low load and high EWIC exports.                          | Load Flow.  |
| Ireland          | The output of Moneypoint and Tarbert units will be adjusted until Friday 29 <sup>th</sup> December.  | To facilitate commissioning of transmission equipment.  |
| Ireland          | Huntstown Combined (HNC) will be 'must run' when load is greater than 3,000 MW.  | Forced transmission system outage.  |
| Northern Ireland | Replacement Reserve constraint (S_MWMAX_NI_GT) has been updated to 272 MW.   | Increase in AGU capacity.   |
| Northern Ireland | Replacement Reserve constraint (S_REP_NI) has been removed.  | No longer required.   |
| Northern Ireland | S_NBMIN_MINNIU: Active as S_NBMIN_MINNI1 and S_NBMIN_MINNI2 are currently disabled.  | Reversion of action taken in response to 6th November Amber alert.  |
| Northern Ireland | New constraint group active:<br>S_NBMIN_MINNI3<br><br>TCG Type: NB<br>Limit Type: N:>=<br>Limit: 1 unit at all times<br>Resources: C30, K1, K2 | There must be a least one machine on-load at all times in Northern Ireland. Required for dynamic stability. |
| Northern Ireland | Coolkeeragh Unit C30 is currently 'must run'.  | System security.  |