

Wind Dispatch Tool – Temporary South East Constraint Group

Date: 6th August 2020

Background

We use the Wind Dispatch Tool (WDT) in the TSOs' Control Centres to manage wind/solar constraints and curtailment in real time operation of the power system. Constraints are applied to individual windfarms or groups of windfarms associated with a particular constraint. The WDT allows the application of active power (MW) limits to the outputs of individual, controllable, wind/solar farms.

In 2019 a review of the constraint groups in the WDT was carried out on the basis of power flow studies and some groups were modified to reflect updated system topology and conditions. All windfarms that materially contribute to a constraint were included in a group used to manage that constraint. These groups facilitate the Control Centre selection of contributing units to resolve a particular constraint instead of manually selecting each individual windfarm. As a result of the changes to the groups, a number of windfarms were included in groups that they had not been part of historically.

The revised groups were implemented in December 2019. Earlier this year, an Information Note on [Wind Dispatch Tool Constraints Groups](#), a document outlining the WDT constraint groups for an intact network, was published. We also outlined that we plan to review the Wind Dispatch Tool constraint groups on a regular basis and that we want to work in partnership with industry and welcome any feedback that you may have for consideration in future reviews.

In this document we did not identify any wind constraint group in the South East of the Network. This is due to the fact that the region is largely unconstrained given the current wind portfolio and network topology in the region under intact system conditions. On the 25th of May 2020, we encountered a long term forced outage of a key 220 kV circuit in the region from Arklow to Carrickmines 220 kV substations. This is a key 220 kV circuit for transferring high levels of generation from the South East, South and South West of the Network to the high system loads in Dublin and has resulted in excessive pressure being put on the underlying 110 kV network under high wind conditions.

To assist our management of this issue we have developed a number of operational mitigation measures that firstly seek to avoid an impact on wind generation and secondly, when required, to minimise the level of wind constrained. To achieve this we have created a new temporary wind constraint group in the region which will remain in place for the duration of the forced outage of the Arklow-Carrickmines 220 kV circuit or until a temporary network reinforcement is introduced.

Operational Mitigation Measures

To minimise the requirement for constraining wind we have put in place other mitigation measures to assist in managing the issues caused by this forced outage. These are:

- Various operational switching of transmission equipment based on changing configurations.
- Dispatching down/off of Great Island GI4, Aghada AD2, Whitegate WG1 conventional generation units.
- Run peaking plant to manage network constraints while maximising wind generation.
- Countertrading on EWIC.
- Rescheduled additional conflicting transmission outages.

It should be noted that these measures may not always be available to us as they can bring their own operational security issues or they can have adverse knock-on impacts.

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It has been determined however, that the above actions are not sufficient in all system conditions to remove all post-contingency issues on the 110 kV circuits on the South East of the network. We have therefore had to introduce an additional wind constraint group in the region on a temporary basis in order to resolve all issues on the network that cannot be resolved by other means. A list of all 110 kV nodes included in this new constraint group is included in Appendix 1. These nodes contain controllable wind farms that are the most effective at resolving the new contingency issues in the region.

It is also sometimes possible that additional constraints may have to be applied to wind farms in the South/South West of the Network. Although less effective than this new constraint group, restrictions might also be required to wind farms connected to the second set of 110 kV nodes contained in Appendix 1 when all mitigations in the South East have been exhausted.

Appendix 1: South East Wind Constraint Group.

Station
Arklow
Ballywater
Castledockrell
Crane
Crory
Waterford
Wexford

Secondary 110 kV nodes that might need to be constrained following the completion of all mitigation measures in the South East:

Station
Woodhouse
Barrymore
Carlow
Bandon
Kill Hill
Thurles
Dunmanway
Cauteen
Lisheen
Boggeragh
Macroom
Garrow
Ballylickey
Ikerrin
Glanlee
Coomagearlahy