



DS3 Programme Operational Capability Outlook

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Purpose

This briefing paper sets out the TSOs' view of how operational capability metrics for the Irish and Northern Irish power system are expected to change out to 2020. In particular, it highlights the likely changes to the System Non Synchronous Penetration (SNSP¹) metric.

This document will be updated in Q1 of each year with the latest available information.

It should be noted that other power system metrics can result in system constraints. These are beyond the scope of this document and are instead covered by the 'Operations Security Update' published regularly on www.eirgrid.com.

SNSP Projection to 2020

The all island SNSP is currently limited to 50%. This was a key output of the all island [Facilitation of Renewables](#) studies completed in 2010 and has been reaffirmed by subsequent analysis.

These same studies identified a number of power system challenges which needed to be overcome to go above this 50% SNSP limit. These are currently being addressed as part of the DS3 Programme, with the SNSP metric projected to increase as a result of this work in a number of discrete steps out to 2020:

- 1) SNSP increases to 55% in Q4 2016:
 - *Driver: Proposed System Services becomes operational*
 - This date assumes the SEM Committee approve the proposed System Services in Q4 2014 (in line with their recent decision) and assumes 2 years is required for implementation (based on the TSOs' Harmonised Ancillary Services (HAS) project experience).
- 2) SNSP increases to 65% in Q4 2017:
 - *Driver: RoCoF standard moves to 1 Hz/s over 500 ms*
 - This date is in line with the published RoCoF decisions by both the CER (04/04/2014) and UR (07/05/2014). The implementation timeframe reflects that close to full compliance of the generation fleet is required to move to the new standard.
- 3) SNSP increases to 70% in Q3 2018:
 - *Driver: Delivery of revised voltage and frequency operational policies which reflect the needs of the transmission and distribution systems.*
- 4) SNSP increases to 75% in Q2 2019:
 - *Driver: Delivery of enhanced control centre tools which complement revised operational policies. Examples include developing the capability of the existing WSAT tool, delivery all island EMS, ramping tool etc.*

It should be noted that it is difficult to be fully prescriptive in describing the step changes above, particularly for those in 2018 and 2019. However, once the DS3 Programme has been fully implemented, the outputs will enable the power system to be securely and reliably operated up to 75% SNSP.

¹ SNSP is a real-time measure of the percentage of generation that comes from non-synchronous sources, such as wind and HVDC interconnector imports, relative to the system demand.

Replacement of SNSP Metric

The TSOs keep all power system metrics under regular review through internal assessment and analysis – the same process is applied to the SNSP metric.

Although it is currently expected that the SNSP metric will be in operation for at least the next two years, this regular review process will likely lead to its replacement with other, more suitable operational capability measures. These will be identified by the DS3 Programme and communicated to industry.

Separately, the TSOs are examining short term options which could lead to increases in SNSP under specific system conditions. The impact of such a change on RES penetration is not likely to be very significant.

Communications of Changes to Operational Capability Metrics

Changes to operational capability metrics in Ireland and Northern Ireland will be communicated as follows:

- Via annual publication of the 'DS3 Programme: Operational Capability Outlook'
- Via an update on the DS3 section of the EirGrid/SONI website
- Via a suitable update of the published 'Operational Constraints Update' document
- Via the DS3 Advisory Council and Industry Fora