



# Balancing Market Modification Proposal

Expansion of the System Service Flag to include units providing Replacement Reserve

2 December 2021 update

# Background

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- Follow on and replacement of mod 04\_21
- Focused on aspects of the current mkt design that are not delivering the detailed design as intended leaving flexible generation unreasonably exposed to RODPs

## **'Problem trying to resolve:**

- The detailed design allows for any capacity utilized for DS3 System Services such as capacity providing reserve to count towards obligations.
- Units which are desynchronised and providing replacement reserves, who would not normally clear in the market and who may not be able to clear in the market if they tried without creating unintended outcomes.'

In a forecasted potential period of system distress the objectives of the TSOs are clear. They will take actions to increase the resources available to them. These actions will ensure that the more flexible plants, peakers, are kept in reserve, whilst early actions will ensure that less flexible plant will be instructed to be despatched.

It is likely, given the concerns over system distress in the coming winters, that peaking generators will be more likely to be exposed to RODP. This issue needs to be addressed urgently.

# System Services continuously provided

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## Replacement Reserve Resources

Within the TSOs Active Constraints resources that are providing Replacement Reserves are listed. These resources can provide their maximum output from cold status within 20 minutes from being instructed ie flexible generators. The output of these units are curtailed to ensure that a combined minimum of 450MWs, split 325MWs in Ireland and 125MWs in Northern Ireland, is always available for replacement reserve.

The current flagging process identifies those capacity providers that have their output bound in accordance with Indicative Operations Schedule to allow for any capacity utilized for DS3 System Services such as capacity providing reserve to count towards obligations. This is not likely to identify those units that as a group are continuously bound by the active constraints and are providing Replacement Reserves when they are available.

The Replacement Reserve Capacity providers are the flexible peakers that represent the problem the market design was trying to resolve in December 2016

The proposal is to extend the System Service Flag to include the resources identified as providing Replacement Reserves when they are available. This reflects the flexibility that the TSOs need from these units whilst ensuring that they are not unfairly penalised, if they are available and not dispatched.

# Feedback from Committee (1)

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There has been considerable feedback on the modification since the last working group

1. How will this flow through to settlements?
2. How to ensure that the unit is available?
3. Can it only apply to those in merit?
4. Which participant price to use?
5. What is the justification for the modification?
6. Why hold onto the existing text?

# Feedback from Committee (2)

1. How will this flow through to settlements?

2. How to ensure that the unit is available?

Both of these are largely dealt with in the existing Code.

The availability and the settlement is already decided for existing flagged units in sections F.18.6.5, F.18.6.6 and F.18.7.2 of the Code.

Looking at this in reverse order:

F.18.7.2 The difference payments are charged on the difference between the QCOB and the QDIFFTRACK

$$QDIFFCNP_{\Omega Y} = \text{Max}(QCOB_{\Omega Y} - QDIFFTRACK_{\Omega Y}, 0)$$

F. 18.6.6 The QDIFFTRACK is the min of (i) QCOB or (ii) previously calculated QDIFFTRACK plus the System Service Difference Quantity:

$$QDIFFTRACK_{\Omega Y} = \text{Min}\left(QCOB_{\Omega Y}, QDIFFTRACK'_{\Omega Y} + \sum_{u \in \Omega} QDIFFCSS_{uY}\right)$$

F. 18.6.5 Links in the availability

$$QDIFFCSS_{uY} = \text{Max}\left((qAA_{uY} \times DISP) - \text{Max}(QEX_{uY}, QD_{uY}), 0\right) \times (1 - FSS_{uY})$$

*This sees that the System Service Difference quantity is the availability minus the maximum of QEX or QD.*

*Effectively if the unit was available to 100MW, but was dispatched to 50MW, then it should still be protected.*

*If the unit is not available then the System Service Qty will be zero.*

*This is consistent with the original Design.*

F.18.6.4 is clear if the unit is flagged as FSS in any 5 minute period then it is flagged for the 30 minutes, but this will then be subject to refinement based F.18.6.5 and F.18.6.6

# Feedback from Committee (3)

3. Can it only apply to those in merit?

4. Which participant price to use?

There has been significant discussion at the mods committee and at the working group on whether it can be in merit and what in merit is defined as. Adding in this condition does add a system element to the change.

Based on the feedback we have used the strike price.

What participant price to use?

It is not possible to use the PBO as this would have involved the unit having bought or sold in the BM. As such we have opted for the  $PINC_{uip}$ . This is the incremental price for the unit for the imbalance period. In the vast majority of times the flag will only come into play where the unit is off. As such the incremental offer will be the Q1 incremental bid. But if the unit is on, the incremental offer will be the appropriate for comparison with the Strike Price.

ii. its Incremental Price ( $PINC_{uip}$ )  $\leq$  Strike Price ( $PSTR_m$ )

then the System Service Flag ( $FSS_{uy}$ ) for that Generator Unit,  $u$ , shall be set equal to zero for that Imbalance Pricing Period,  $\varphi$ .

5. What is the justification for the modification?

- The justification for the modification as has been explained is that the current solution is inconsistently applied across the peakers available to the market. With many units being exposed to high price events despite providing Replacement Reserve. The impact for peaking units is that it is likely to become uneconomic for them to continue to operate as they continue to be subject to this largely uncontrollable dispatch risk, leading to large RODP.

6. Why retain the existing text?

We had initially proposed to retain the existing text as to make absolutely sure that no units currently caught in the process could possibly be excluded. However once including the in-merit limitation it caused a conflict as one clause would have no limits and one would. We have updated the entire clause to include the Strike Price.

# Legal Drafting Change

- The assessment of whether a unit should be additionally system service flagged is objectively set via the TSO classification of Replacement Reserve Resources. These capacity providers are classified in this group due to their flexibility in being able to provide sustainable Replacement Reserves when they are available. In addition, these groups are already curtailed as a group in this System Service provision.
- The assignment of the flag would have to be manual at this point until scheduled for system development.

Code change Part B Appendix N

"2 For each Imbalance Pricing Period,  $\varphi$ , the System Operators shall:

~~i. use information from the most recent Indicative Operations Schedule to identify whether a Generator Unit's scheduled output is bound by the presence of an Operational Constraint relating to the provision of Replacement Reserve, and where they determine that the Generator Unit is so bound, shall set the System Service Flag ( $FSS_{u\varphi}$ ) for that Generator Unit,  $u$ , equal to zero for that Imbalance Pricing Period,  $\varphi$ . Otherwise, the System Operators shall set the System Service Flag ( $FSS_{u\varphi}$ ) for that Generator Unit,  $u$ , equal to one for that Imbalance Pricing Period,  $\varphi$ .~~

i. where the Generator unit,  $u$ ;

- i. is listed by the TSO in its latest published Operational Constraints Update as a resource providing Replacement Reserve; and
- ii. its Incremental Price ( $PINC_{ui\varphi}$ )  $\leq$  Strike Price ( $PSTR_m$ )

then the System Service Flag ( $FSS_{u\varphi}$ ) for that Generator Unit,  $u$ , shall be set equal to zero for that Imbalance Pricing Period,  $\varphi$ .

ii. Where not covered by (i), the System Operators shall set the System Service Flag ( $FSS_{u\varphi}$ ) for that Generator Unit,  $u$ , equal to one for that Pricing Period,  $\varphi$