# Harmonised Other System Charges Consultation Paper

Tariff Year
01 October 2021 to 30 September 2022

31 March 2021

EIRGRID SONI

# ABBREVIATIONS

| | |
|---|---|
| AGU | Aggregated Generator Unit |
| BOA | Bid Offer Acceptance |
| CCP | Controllability Categorisation Policy |
| CRM | Capacity Remuneration Auction |
| DAM | Day-Ahead Market |
| DBC | Dispatch Balancing Costs |
| DMOL | Design Minimum Operating Level |
| DSU | Demand Side Unit |
| DS3 | Delivering a Secure Sustainable System |
| EDIL | Electronic Dispatch Instruction Logger |
| GPI | Generator Performance Incentive |
| HAS | Harmonised Ancillary Services |
| HICP | Harmonised Index of Consumer Prices |
| IDM | Intra-Day Market |
| I-SEM | Integrated Single Electricity Market |
| LTS | Long-Term Schedule |
| MMS | Market Management System |
| MPI | Market Participant Interface |
| NI | Northern Ireland |
| NIE | Northern Ireland Electricity |
| OSC | Other System Charges |
| PPM | Power Park Modules |
| QEX | Ex-Ante Quantity |
| RA | Regulatory Authority |
| RO | Reliability Options |
| RoCoF | Rate of Change of Frequency |
| RPI | Retail Prices Index |
| SEM | Single Electricity Market |
| SEMC | Single Electricity Market Committee |
| SND | Short Notice Declaration |
| TCG | Transmission Constraint Group |
| TSO | Transmission System Operator |

# 1 EXECUTIVE SUMMARY

Other System Charges (OSC) are levied on generators which fail to provide necessary services to the system, leading to higher Imperfections Costs. The OSC include charges for generators if their units trip, or make downward re-declarations of availability, at short notice. Generator Performance Incentive (GPI) charges were harmonised between Ireland and Northern Ireland on the 01 February 2010. These charges are specified in the Transmission Use of System Charging Statements, which are approved by the Regulatory Authorities (RAs) in Ireland and Northern Ireland. The arrangements are defined in both jurisdictions through the Other System Charges policies, the Charging Statements and the Other System Charges Methodology Statement.

In this year's Annual Tariff Consultation (2021/2022) the TSOs are proposing to:

- Retain the rate of Trip Charges and Short Notice Declarations (SND) for generators without an Ex-Ante Market position (QEX), as per that introduced for 2020/21, adjusted for inflation.
- Retain the reduced rate of Trip Charges and Short Notice Declarations for generators with an Ex-Ante Market position (QEX) from 2020/21, adjusted for inflation.
- Retain the Primary Operating Reserve GPI rate from 2020/21, adjusted for inflation.
- Retain the Secondary Fuel GPI rate from 2020/21, adjusted for inflation.
- Remove the RoCoF GPI (as a result of project closure).
- Retain the OSC rates approved for the 2020/2021 tariff year, only adjusting for inflation at forecast rate, for the following GPIs:
    - Minimum Generation
    - Governor Droop
    - Secondary Operating Reserve
    - Tertiary Operating Reserve 1
    - Tertiary Operating Reserve 2
    - Reactive Power

The TSOs welcome comments from industry on these proposals.

# Contents

# 2 INTRODUCTION

Other System Charges (OSC) are defined in the Transmission Use of System Statement of Charges and include Trip Charges, Short Notice Declaration charges and Generator Performance Incentive charges. These Other System Charges are levied on underperforming generators who unexpectedly trip off the system or re-declare at short notice, causing a re-dispatch of other plant at a cost to the end consumer. The Generator Performance Incentive (GPI) charges are levied on those generators which fail to comply with specific standards in the Grid Code.

GPIs are designed to incentivise compliance with the respective Grid Codes and are not linked with DS3 System Services Agreements.

The Trip Charge incentivises generators to minimise the number of trips and to aim for slow tripping, when a trip is unavoidable. The Trip Charge is designed to incur higher charges, the higher the MW loss seen by the power system. A charge applies for all full trips and/or partial trips where the reduction is greater than, or equal to, the trip threshold.

Short Notice Declarations (SNDs) incentivise generators to avoid changing declarations at short notice or at least provide maximum notice. The Notice Time Weight is an empirical weighting corresponding to the relative importance of notice time from 8 hours up to real time.

In 2020/2021, the Trip Charge and Short Notice Declarations (SND) Charge for generators without an Ex-ante Market position (QEX) were increased to a rate that aligned with 2017/18 tariff rates before the introduction of the revised SEM arrangements. This created a two-tiered approach to Trip Charges and SND Charges, with units which are not balance responsible paying a higher rate. This consultation proposes the continuation of this two-tiered approach for 2021/22.

The RoCoF project has been completed for conventional generator units, and 2019/20 was the first tariff year for which no charges were applied. This consultation proposes the removal of the RoCoF GPI for 2021/22.

# 3 REVIEW OF EXISTING OSC

## 3.1 Short Notice Declarations and Trip Charges

In the event of a generator unit making a downward declaration of its availability at short notice, a Short Notice Declaration (SND) Charge is levied on the service provider depending on the amount of notice given and the quantity of downward declaration (i.e. MW/€ charge). The charge is intended to incentivise behaviour that enhances system security and reduce the costs of actions taken by the TSOs to mitigate SNDs.

For 2020/21, the RAs approved an increase in the rate of Trip Charges and SND Charges, for generator units without a Market position (i.e. not balance responsible), to that which aligns with 2017/18 tariff, before the introduction of the revised SEM arrangements. The rate being applied is now based on whether a generator is balance responsible or not (i.e. has a contracted position in the market). Generator units without a traded position are charged at the higher rate. The TSOs have reviewed Trip Charge and SND Charge settlement data, from October 2020 to January 2021, as part of an initial assessment into changes introduced for tariff year 2020/21.

The increased charge was intended to protect the consumer, to some extent, from the cost impacts of unreliable generator units which are not incentivised by being balance responsible. Since October 2020, this unreliability has not only triggered significant imperfection costs, but has also impacted the TSOs' ability to ensure security of supply, during periods when the transmission system was stressed and the market was short. Under these conditions, the TSOs have had to take a cautious approach to commitment decisions in order to manage the high incidence of SNDs and ensure adequate supply for demand peaks.

A consequence of this approach is an operational schedule which departs further away from the market schedule, driving up imperfection costs. Settlement data between October 2020 and January 2021 supports this contention, with the unreliable generator units that are driving imperfections costs (as outlined above) being the units charged most using the new increased Non-QEX tariff rate.

The TSOs are recommending the continuation of this approach based upon the same justification as outlined in 2020[1] and OSC settlement data from October 2020 to January 2021.

## 3.2 Generator Performance Incentive Charge

It is important for the efficient and economic operation of the system that generators maintain the performance required of them, in the respective Grid Codes. Harmonised arrangements were established in 2010 for Generator Performance Incentive Charges to monitor performance on an all-island basis. These arrangements intended to quantify and track generation performance, identify

[1] https://www.semcommittee.com/sites/semc/files/media-files/SEM%20-%20OSC%20Recommendations.pdf

non-compliance with standards and help evaluate the performance gap between what is needed and what is being provided by generators, in an evolving power system.

The introduction of GPIs has placed focus on generator performance and highlighted the level of compliance of certain Generating Units, leading to improved performance of certain Generating Units, in relation to the required Grid Code compliance.

### 3.2.1 GPI Operating Reserve

Approximately half of all the Operating Reserve charges in 2019/20 were applied to a small number of non-compliant generator units. The lack of compliant operating reserve does increase imperfections costs, as reserve has to be dispatched elsewhere, possibly resulting in the commitment of additional generator units.

The TSOs are therefore proposing to retain the charge, at the rate for the tariff year 2020/21, apart from adjusting for inflation.

### 3.2.2 GPI Minimum Generation

Grid Code compliance with minimum generation standards continues to be central to the facilitation of renewables on the island. A reliable Minimum Generation will allow the TSOs to schedule effectively during periods of low demand and high wind generation.

As a result, the TSOs propose to retain the charge, at the rate for the tariff year 2020/21, apart from adjusting for inflation.

### 3.2.3 GPI RoCoF

A RoCoF GPI was introduced in June 2016, in line with the publication of the RAs' RoCoF decision papers[2]. The RoCoF implementation project is now complete. There were no RoCoF charges applied in the 2019/20 tariff year. The TSOs are recommending removal of the charge for 2021/22.

### 3.2.4 GPI Secondary Fuel

Secondary Fuel availability is very important for fuel security (and therefore power system operational security) in both Ireland and Northern Ireland, because of the high dependency on gas, as a fuel source for generation. There are ongoing issues with regard to availability of units on secondary fuel. In general the units in question are striving to resolve these issues and become available again. However given the ongoing availability issues it would seem prudent to retain this GPI.

[2] https://www.uregni.gov.uk/sites/uregni.gov.uk/files/media-files/Decision_Paper_on_the_Rate_of_Change_of_Frequency_Grid_Code_Modification.pdf and https://www.cru.ie/wp-content/uploads/2014/07/CER14081-ROCOF-Decision-Paper-FINAL-FOR-PUBLICATION.pdf

The TSOs are proposing to retain the charge at the rate for the tariff year 2020/21, apart from adjusting for inflation.

### 3.2.5 GPI Reactive Power

A review of OSC Settlement from 2019/20 shows that a limited number of units are being regularly charged the Reactive Power GPI due to non-compliance. One of these generator units is part of a Transmission Constraint Group (TCG) which is required for voltage control and the lack of reactive capability impacts its ability to control voltage. Non-compliance contributes to higher imperfections costs as the TSOs may have to schedule more expensive generator units to cover any deficiency in reactive power capability.

The TSOs are proposing to retain the charge at the rate for the tariff year 2020/21, apart from adjusting for inflation.

# 4 NEW OTHER SYSTEM CHARGES (OSC)

## 4.1 Power Park Modules

There was discussion in the 2020/21 OSC consultation regarding the relative merits of introducing new GPIs for Power Park Modules (PPM), in relation to reactive power Grid Code compliance. There are on-going issues in relation to adequate voltage control at a number of locations on the transmission system that have a high penetration of PPMs. The TSOs are involved in initiatives in relation to improved voltage control in these areas when PPMs are not generating, and are monitoring performance of PPMs when they are generating. The TSOs will review the need to introduce GPIs, regarding the reactive power compliance of PPMs in future OSC consultations.

The TSOs are not proposing any GPI for PPMs for the tariff year 2021/22.

## 4.2 Demand Side Units (DSU)

Since the OSC consultation for tariff year 2020/21, the TSOs have liaised with the DSU Industry in relation to specific concerns regarding DSU availability declarations. The concerns are focused on the accuracy of availability data in scheduling systems (i.e. MPI Forecast Availability) versus dispatch systems (i.e. EDIL availability). This disparity can lead to inefficient and diminished scheduling, with the issues becoming of greater importance during times when the market is short and the transmission system is stressed. As part of this interaction, the TSOs have agreed to regularly monitor and update DSUs, in relation to observed disparities in availability submissions.

The TSOs will also continue to monitor and test compliance of DSUs in relation to Dispatch Instructions.

As the communication with DSUs, in relation to availability declarations is still in progress, the TSOs are not proposing to introduce a GPI for DSUs for the tariff year 2021/22.

## 4.3 Emerging Non-Conventional Technologies

As per the consultation for 2020/21, it is still deemed too early to propose GPIs for emerging non-conventional technologies, which have yet to be embedded into normal operations. The TSOs will continue to monitor these technologies and propose GPIs, should they be required, in future years.

# 5 PROPOSED RATES

The following sections define the rates used for the Other System Charges (OSC) and the proposed rates for the 2021/2022 period.

With respect to the blended inflation rate, the TSOs are aligning to the methodology approved by the RAs in applying a blended rate.

The TSOs, therefore, propose the following methodology to be applied:

- 75% * Central Bank HICP forecast from the latest available quarterly report adjusted for the relevant tariff timeframe; plus
- 25% * Office of Budgetary Responsibility CPI forecast from the latest available quarterly report adjusted for the relevant tariff timeframe.

According to the latest Office of Budgetary Responsibility report[3] (Mar 2021) the current CPI year on year inflation forecasts in the UK for the 2021/22 tariff year equates to c.+1.725% while the latest Central Bank report[4] (Q1 2021) forecasts HICP in Ireland for the same period at c.+0.5625%.

| **Source** | | **2021** | **2022** | **Tariff Year Methodology** | **2021/2022 Tariff Year** | **Blended Rate Methodology** | **Blended rate** |
|---|---|---|---|---|---|---|---|
| OBR March 2019 | CPI | 1.5% | 1.8% | (0.015*25% + 0.018*75%) | 1.725% | 1.725*25% | 0.43125 |
| Central Bank Q1 2021 | HICP | 0.6% | 0.8% | (0.006*25% + 0.008*75%) | 0.75% | 0.75*75% | 0.5625 |
| **Blended Rate** | | | | | | | **0.99375%** |

Table 4.0: Proposed Inflation Rate Increase

On this basis, and recognising the relative balance between Ireland and Northern Ireland, the forecast blended rate for the forthcoming 2021/22 period is 0.99375% as shown in Table 4.0.

[3] https://obr.uk/download/economic-and-fiscal-outlook-march-2021/
[4] https://www.centralbank.ie/docs/default-source/publications/quarterly-bulletins/qb-archive/2021/quarterly-bulletin-q1-2021.pdf?sfvrsn=5

## 5.1 Trip Charges

The proposed Trip Constants for the 2021/22 tariff year are shown in Table 4.1. There are no changes proposed.

| | 2018-2019 | 2019-2020 | 2020-2021 | 2021-2022 |
|---|---|---|---|---|
| Direct Trip Rate of MW Loss | 15 MW/s | 15 MW/s | 15 MW/s | 15 MW/s |
| Fast Wind Down Rate of MW Loss | 3 MW/s | 3 MW/s | 3 MW/s | 3 MW/s |
| Slow Wind Down Rate of MW Loss | 1 MW/s | 1 MW/s | 1 MW/s | 1 MW/s |
| Direct Trip Constant | 0.01 | 0.01 | 0.01 | 0.01 |
| Fast Wind Down Constant | 0.009 | 0.009 | 0.009 | 0.009 |
| Slow Wind Down Constant | 0.008 | 0.008 | 0.008 | 0.008 |
| Trip MW Loss Threshold | 100 MW | 100 MW | 100 MW | 100 MW |

Table 4.1 Proposed Trip Constants

Based on the reasoning in Section 3.2, Table 4.2 contains the Trip Charge proposals for units with a QEX while Table 4.3 contains the Trip Charge proposals for units without a QEX.

| Charge | 2017-2018 | 2018-2019 | 2019-2020 | 2020-2021 | 2021-2022 |
|---|---|---|---|---|---|
| Direct Trip Charge Rate | €4,331 | €2,161 | €2,195 | €2,232 | **€2,254.18** |
| Fast Wind Down Charge Rate | €3,242 | €1,621 | €1,647 | €1,675 | **€1,691.65** |
| Slow Wind Down Charge Rate | €2,161 | €1,081 | €1,098 | €1,117 | **€1,128.10** |

**Table 4.2: Proposed Trip Rates For Units With a QEX**

| Charge | 2017-2018 | 2018-2019 | 2019-2020 | 2020-2021 | 2021-2022 |
|---|---|---|---|---|---|
| Direct Trip Charge Rate | €4,322 | €2,161 | €2,195 | €4,396 | **€4,439.69** |
| Fast Wind Down Charge Rate | €3,242 | €1,621 | €1,647 | €3,297 | **€3,329.76** |
| Slow Wind Down Charge Rate | €2,161 | €1,081 | €1,098 | €2,198 | **€2,219.84** |

**Table 5:3: Proposed Trip Rates For Units Without a QEX**

## 5.2 Short Notice Declarations

A SND can have the same impact on scheduling and dispatch as that of trips. These short notice outages can have a significant effect on the ability of the TSO to schedule and dispatch in an economic manner and also to manage Transmission Constraint Groups which are essential to the secure operation of the transmission system.

Table 4.3 shows the proposed SND Constants for 2021-22.

| **SND Constants** | **2018-2019** | **2019-2020** | **2020-2021** | **2021-22** |
|---|---|---|---|---|
| SND Time Minimum | 5 min | 5 min | 5 min | **5 min** |
| SND Time Medium | 20 min | 20 min | 20 min | **20 min** |
| SND Time Zero | 480 min | 480 min | 480 min | **480 min** |
| SND Powering Factor (Notice time weighting curve) | -0.3 | -0.3 | -0.3 | **-0.3** |
| SND Threshold | 15 MW | 15 MW | 15 MW | **15 MW** |
| DSU SND Threshold | N/A | N/A | 5 MW | **5 MW** |
| Time Window for Chargeable SNDs | 60 min | 60 min | 60 min | **60 min** |

**Table 4.3: Proposed SND Constants**

Table 4.4 shows the proposed SND Charge Rate for Generating Units with a QEX.

| **SND Charge Rate** | **2017-2018** | **2018-2019** | **2019-2020** | **2020-2021** | **2021-2022** |
|---|---|---|---|---|---|
| SND Charge Rate | €76 / MW | €38 / MW | €38 / MW | €39 / MW | €39 / MW |

**Table 4.4: Proposed SND Charge Rate for units with a QEX**

Table 4.5 shows the proposed SND Charge Rate for Generating Units without a QEX. The TSOs are proposing a return to the 2017/2018 tariff year adjusted for inflation.

| **SND Charge Rate** | **2017-2018** | **2018-2019** | **2019-2020** | **2020-2021** | **2021-2022** |
|---|---|---|---|---|---|
| SND Charge Rate | N/A | N/A | N/A | €77 / MW | €78 / MW |

**Table 5:5: Proposed SND Charge Rates for units without a QEX**

## 5.3 GPI Charges

The proposed GPI Constants, GPI Declaration Based Charges and GPI Event Based Charges for the 2021/2022 tariff year are outlined in Table 4.6, Table 4.7 and Table 4.8 respectively. The TSOs are proposing to make no changes, apart from adjusting for inflation.

| GPI Constants | 2018-2019 | 2019-2020 | 2020-2021 | 2021-2022 |
|---|---|---|---|---|
| Late Declaration Notice Time | 480 min | 480 min | 480 min | 480 min |
| Loading Rate Factor 1 | 60 min | 60 min | 60 min | 60 min |
| Loading Rate Factor 2 | 24 | 24 | 24 | 24 |
| Loading Rate Tolerance | 110% | 110% | 110% | 110% |
| De-Loading Rate Factor 1 | 60 min | 60 min | 60 min | 60 min |
| De-Loading Rate Factor 2 | 24 | 24 | 24 | 24 |
| De-Loading Rate Tolerance | 110% | 110% | 110% | 110% |
| Early Synchronous Tolerance | 15 min | 15 min | 15 min | 15 min |
| Early Synchronous Factor | 60 min | 60 min | 60 min | 60 min |
| Late Synchronous Tolerance | 5 min | 5 min | 5 min | 5 min |
| Late Synchronous Factor | 55 min | 55 min | 55 min | 55 min |
| Secondary Fuel Availability Factor | 0.9 | 0.9 | 0.9 | 0.9 |

**Table 4.6: Proposed GPI Constants**

| | 2018-2019 | 2019-2020 | 2020-2021 | 2021-2022 |
|---|---|---|---|---|
| **GPI Declaration Based Rates** | **€ / MWh** | **€ / MWh** | **€ / MWh** | **€ / MWh** |
| Minimum Generation | 1.29 | 1.31 | 1.33 | 1.34 |
| Max Starts in 24 hour period | 0 | 0 | 0 | 0 |
| Minimum On time | 0 | 0 | 0 | 0 |
| Reactive Power Leading | 0.32 | 0.32 | 0.32 | 0.32 |
| Reactive Power Lagging | 0.32 | 0.32 | 0.32 | 0.32 |
| Governor Droop | 0.32 | 0.32 | 0.32 | 0.32 |
| Primary Operating Reserve | 0.52 | 0.53 | 0.54 | 0.55 |
| Secondary Operating Reserve | 0.13 | 0.13 | 0.13 | 0.13 |
| Tertiary Operating Reserve 1 | 0.13 | 0.13 | 0.13 | 0.13 |
| Tertiary Operating Reserve 2 | 0.13 | 0.13 | 0.13 | 0.13 |
| Secondary Fuel Availability | 0.03 | 0.03 | 0.03 | 0.03 |

**Table 4.7: Proposed GPI Declaration Based Charge Rates**

The Event Based GPIs will remain at zero (i.e. Loading Rate, De-Loading Rate, Early Synchronisation and Late Synchronisation).

# 6 SUMMARY AND NEXT STEPS

Comments on this consultation paper are invited from interested parties. Preferably these should be aligned and referenced with the relevant sections and sub-sections of this document. If confidentiality is required, this should be made explicit in the response, otherwise the submissions will be published on the TSOs websites[5]. Please note that, in any event, all responses will be provided to the RAs. **The closing date for responses is 5pm on 28th April 2021.**

- Comments should be submitted to tariffs@eirgrid.com or tariffs@soni.ltd.uk;
- The TSOs will consider all comments received on the consultation paper and make recommendations to the RAs based on these;
- The RAs may approve/reject the recommendations proposed by the TSOs in light of the responses received; and
- The TSOs will implement in accordance with the regulatory decision.

[5] www.eirgrid.com and www.soni.ltd.uk