

# Harmonised Other System Charges Consultation

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Tariff Year  
01 October 2018 to 30 September 2019

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4<sup>th</sup> April 2018



## EXECUTIVE SUMMARY

Other System Charges (OSC) are levied on generators, which fail to provide necessary services to the system, leading to higher Dispatch Balancing 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 we are proposing to:

- reduce the rate of the Trip and Short Notice Declaration charges to 50% of the 2017/2018 tariff rate;
- set the charging rate to zero for the early and late synchronization GPIs;
- set the charging rate to zero for the loading and de-loading rates GPIs;
- retain the OSC rates approved for the 2017/2018 tariff year, only adjusting for inflation at forecast rate of 1.369%<sup>1</sup> for the tariff year 2018/2019 for the following GPIs:
  - Minimum Generation;
  - Governor Droop;
  - Secondary Operating Reserve;
  - Tertiary Operating Reserve 1;
  - Tertiary Operating Reserve 2;
  - Reactive Power;
- set the charging rate to zero for the Minimum On Time GPI;
- set the charging rate to zero for the Maximum Number of Starts in 24 hours GPI;
- increase the Primary Operating Reserve GPI rate from €0.13 to €0.52;
- implement the GPI for Secondary Fuel Availability declarations with a charge rate of €0.03.

The TSOs welcome comments from industry on these proposals.

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<sup>1</sup> <http://budgetresponsibility.org.uk/efo/economic-fiscal-outlook-november-2017/> and <https://www.centralbank.ie/publication/quarterly-bulletins/>

## ABBREVIATIONS

DETI	Department of Enterprise, Trade and Investment
DSU	Demand Side Unit
GPI	Generator Performance Incentive
HICP	Harmonised Index of Consumer Prices
UK	United Kingdom
OSC	Other System Charges
RA	Regulatory Authority
RoCoF	Rate of Change of Frequency
RPI	Retail Prices Index
SEM	Single Electricity Market
SND	Short Notice Declaration
SONI	System Operator Northern Ireland
TSO	Transmission System Operator
WFPS	Wind Farm Power Station

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## 1. 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. The Generator Performance Incentive (GPI) charges are levied on those generators which fail to comply with specific standards in the Grid Code.

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.

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

As a result of the responses received to last year's tariff consultation we committed to complete a comprehensive review of the OSC prior to this year's consultation for the tariff year 01 October 2018 to 30 September 2019. In the review, we have focused on the relevance and impact of I-SEM and DS3 System Services on the OSC and have proposed a number of changes as a result of this, which are included in this consultation.

## 1.1. OSC Reporting

A monthly report is published on our websites which shows the following:

1. the total Trip Charges levied and the type of trip; this is reported on an all-island basis along with the total Trip Charge levied for the tariff year;
2. the total SND charges levied; this is reported on an all-island basis along with the total SND charges levied for the tariff year; and
3. the charges levied for each category of GPI; this is reported on an all-island basis along with the total GPIs for the tariff year.

These monthly reports are available on our websites which can be accessed at [www.EirGrid.com](http://www.EirGrid.com) or [www.soni.ltd.uk](http://www.soni.ltd.uk).

## 1.2. Instructions for Response

Responses should be sent to:

[Vivienne.Price@soni.ltd.uk](mailto:Vivienne.Price@soni.ltd.uk) and [AS@Eirgrid.com](mailto:AS@Eirgrid.com).

**The closing date for receipt of responses is 5pm on Wednesday 2<sup>nd</sup> May 2018.**

It would be helpful if comments were aligned with the sections and sub-sections of this consultation document. If confidentiality is required, this should be made clear in the response. Please note that, in any event, all responses will be shared with the Regulatory Authorities.

## 2. REVIEW OF EXISTING OSC

### 2.1. Trip Charge and Short Notice Declaration Charge

In the event of a generator unit dropping output a Trip Charge is levied on the service provider depending on how the unit tripped (i.e. slow wind down, fast wind down, direct trip). The charge is intended to incentivise behaviour that enhances system security and reduces operating costs. The proposed rates for the various categories of unit trip are set at a level which seeks to recover an amount of costs which is representative of the power system impact. The purpose of the Trip Charge is to minimise the number of trips and, when a trip is unavoidable, to incentivise a Generator to reduce output as slowly as possible.

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. The charge is intended to incentivise behaviour that enhances system security and reduces constraint costs.

#### 2.1.1. Impact of I-SEM

Under I-SEM, market participants will be responsible for determining their market position and can update this position up to market gate closure time (one hour ahead of real time). Market participants submit Physical Notifications (PNs) which represent their intended output in accordance with Grid Code and Trading and Settlement Code requirements. In addition to a market participant's PNs they also submit incremental and decremental costs associated with moving away from their market position. It should be noted that the participant's market position is different to its availability which relates to its physical operating range capability. The TSO uses the PNs, incremental and decremental costs and unit availability in the scheduling and dispatch process when deciding if a unit needs to be moved away from its market position.

A change to a participant's market position would not result in an SND charge but a change in its availability would. A participant's most up to date availability should always be declared to the TSO irrespective of its market position in accordance with Grid Code.

I-SEM will introduce the concept of market participants being balance responsible. This means that participants will be commercially incentivised by the market to meet their contracted position. A participant that deviates from its contracted position, for example, due to a change in availability will be out of balance and will

incur imbalance charges as a result. In this example, the charges should reflect the cost of activating reserves to replace the lost energy.

While balance responsibility will incentivise participants to deliver their contracted position by making participants liable for the cost of the energy imbalance that they create, it does not incentivise timely notification of changes to availability after market gate closure time nor does it incentivise wind-down versus trip behaviour.

There are also certain circumstances when even though the Generating Unit is balance responsible in the market there could still be imperfections costs which, in the absence of the Trips and SND charge, have to be passed on to the end consumer. As we have no experience of operating in I-SEM, it is not clear the scale of such imperfections. For that reason, the TSOs recommend the retention of Trips and SND charges but at a reduced rate of 50% of the 2017/2018 tariff year rate for both charges. When we have more experience of operating in I-SEM, the appropriateness of setting these charges to half of their current rate will be reviewed.

## **2.2. 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 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.

### **2.2.1. Impact of I-SEM**

As with the existing GPI arrangements under SEM, we consider that GPIs will remain separate to I-SEM, and as a consequence not require modification for I-SEM. The exceptions to this are the GPIs for early and late synchronization and loading and de-loading rates. Under I-SEM, participants will be balance responsible and may incur imbalance charges should they not deliver their market positions. The TSOs propose to set these charges (early and late synchronization and loading and de-loading rates) to zero for the tariff year 2018/2019.

The TSOs may recommend the re-introduction of the full charge rate for the early and late synchronization and loading and de-loading GPIs in future years, should material imperfections costs arise in I-SEM, as a consequence of non-compliance in these areas.

#### 2.2.2. Review of GPIs not linked to I-SEM changes

Following a review of the charges applied over the last two tariff years (2015/2016 and 2016/2017) it has been noted that no charges have been applied for the Minimum On Time and the Maximum Number of Starts in 24 hours GPIs. Based on the high level of industry compliance with respect to these two areas of the Grid Code, the TSOs propose to set these charges to zero for the tariff year 2018/2019.

We believe the GPIs for Minimum Generation, Governor Droop, Operating Reserve and Reactive Power still have merit in incentivising compliance to the Grid Code standards and therefore we are proposing to retain the charge rates approved for the 2017/2018 tariff year with the inclusion of the assumed inflation rate.

### 2.3 RoCoF GPI

A RoCoF GPI was introduced in June 2016 in line with the publication of the RAs' RoCoF decision papers<sup>2</sup>. Although there has been significant progress, the RoCoF implementation project is not yet complete. A review of the appropriateness of the tariff may be merited following closure of the RoCoF project. However, until such time we will continue to apply the current rate.

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<sup>2</sup>[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](https://www.uregni.gov.uk/sites/uregni.gov.uk/files/media-files/Decision%20Paper%20on%20the%20Rate%20of%20Change%20of%20Frequency%20Grid%20Code%20Modification.pdf) and <https://www.cru.ie/wp-content/uploads/2014/07/CER14081-ROCOF-Decision-Paper-FINAL-FOR-PUBLICATION.pdf>

## 2.4 Operating Reserve GPI

In previous tariff consultation papers we proposed making a refinement to the GPI calculation for reserve, whereby the required decrement rate is included as part of the calculation. We continue to monitor the need for this refinement and develop, if required, this proposal in next year's consultation.

We have observed that, for those generating units, that have a DS3 System Services contract for the Primary Operating Reserve (POR) service, there are conflicting incentives between the POR GPI and the DS3 performance scalars<sup>3</sup>, for the POR service. It would appear that to reduce the risk of failing to provide the declared POR capability, following a frequency event, and therefore the impact on their performance scalars, certain generators have been declaring down their required Grid Code POR capability. If units declare below their required Grid Code POR capability, this could potentially lead to imperfections costs, which would be passed on to the end consumer.

It is proposed to increase the POR GPI rate in order to provide a greater incentive to comply with Grid Code POR requirements. This increase in the POR GPI rate has been developed in conjunction with the TSOs' Innovation Team, who is responsible for DS3 System Services.

If a generating unit can no longer meet the required level of operating reserve as specified in the Grid Code a derogation may be sought.

The TSOs propose to increase the POR GPI rate from €0.13 to €0.52 for the tariff year 2018/2019.

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<sup>3</sup> A performance scalar is a multiplicative factor which adjusts the payment for a given DS3 System Service to reflect a generating unit's delivery of a given DS3 System Service. More information can be found in the DS3 System Services Protocol published on the TSOs' websites ([www.eirgridgroup.com/](http://www.eirgridgroup.com/) [www.soni.ltd.uk](http://www.soni.ltd.uk)).

## 3. NEW OTHER SYSTEM CHARGES (OSC)

In assessing new developments for OSC, there are two key areas for consideration:

1. where a non-compliance trend is found and a new GPI is considered worthwhile or modification to an existing GPI; and
2. implementation of an OSC for non-conventional generation where there is a cost to the end user due to their non-compliance.

### 3.1 Secondary Fuel Availability GPI

The TSOs had previously proposed a new GPI relating to a generating unit's declared secondary fuel capability. However, this has been deferred for a number of years to allow for the implementation of a revised NI Fuel Security Code by the Department of Enterprise, Trade and Investment (DETI) and the development of Fuel Switching Agreements in Northern Ireland.

An updated NI Fuel Security Code was published on the DETI website<sup>4</sup> on 19 October 2015. In addition, following the Utility Regulator's approval of the form of the Fuel Switching agreements in Northern Ireland on 24<sup>th</sup> March 2016, one agreement has been signed and the remaining two are anticipated to be signed in the near future.

The TSOs now believe there is merit in introducing an availability declaration based GPI for units that are required to operate on secondary fuel. This GPI has been developed as Ireland and Northern Ireland are heavily dependent on gas as a fuel source and sends a signal to industry on the importance of secondary fuel availability as it relates to system security. It is essential to ensure the continued security of supply on an all-island basis and that generating units are in compliance with the Grid Code in Ireland and Fuel Security Code in Northern Ireland.

With regards to the proposed GPI methodology for secondary fuel availability, the responses received from industry on this topic in previous annual OSC consultations have been noted. However, we believe the methodology as set out in previous consultations is required to incentivise compliance and remains essentially unchanged. In the methodology proposed we have included a factor which takes into account the fact that a generating unit during a secondary fuel test is obligated to provide a MW value of no less than 90% of its declared availability.

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<sup>4</sup> <https://www.economy-ni.gov.uk/publications/modification-northern-ireland-fuel-security-code>

In the proposal generating units declare their MW availability on their secondary fuel; if a generating unit is available on its primary fuel and not on its secondary fuel, cannot start up on its secondary fuel or cannot change fuel on load then a trading based charge is levied depending on its requirements.

$$SF\_Charge_x = TP * DSFC * AP_{uh} * SFA\_F * SecFuel\_RATE$$

where:

SF\_Charge<sub>x</sub> is the charge for secondary fuel underperformance in the Trading Period X (expressed in € or £);

TP is a 0.5 hour Trading Period (expressed in h);

DSFC is the Declared Secondary Fuel Capability of the generating unit to be available to generate on its secondary fuel, start on their secondary fuel or change fuel on load. If the generating unit cannot perform either of these capabilities then a charge is levied on the unit. This is a Yes (0) or No (1) condition in the calculation;

AP<sub>uh</sub> is the Time Weighted Average Availability of Generator Unit u in Trading Period h (expressed in MW) and calculated by the application of the following formula:

$$AP_{uh} = \sum_{Av=1,N} \{(A_{v1} \times T_1) / TP\}$$

Where:

$\sum_{Av=1,N}$  is the summation for the N values of Availability during the Trading Period and where Av=1 denotes the first value of Availability during the Trading Period;

T<sub>1</sub> is the period (expressed in minutes) for which the value of Availability was equal to Av1 during the Trading Period;

SFA\_F is the Secondary Fuel Availability Factor (dimensionless) specified in the table headed "Generator Performance Incentive Charge Rates/Parameters" set out in the TUoS Statement of Charges and,

SecFuel\_RATE is the secondary fuel charge rate (expressed in €/MWh or £/MWh) specified in the TUoS Statement of Charges.

The TSOs would welcome participants' views on the proposed methodology.

The TSOs propose a secondary fuel charge rate, SecFuel\_Rate, of €0.03 and a secondary fuel availability factor, SFA\_F, of 0.9.

### **3.2 Wind Farms and Demand Side Units**

There have been significant strides by wind farms over the last number of years in terms of achieving Grid Code compliance through the issuing of Operational Certificates. We continue to observe that the majority of new wind farms connected to the system are compliant with their Grid Code requirements. For those wind farms that are not compliant a number of temporary derogations have been granted, to allow time to investigate and implement remedial works.

We continue to monitor and develop the performance of Demand Side Units (DSUs).

The TSOs will review the need to introduce applicable GPIs at the appropriate time in the future, if deemed necessary.

It should be noted that the Enhanced Performance Monitoring System Phase 1 will be in operation in the coming tariff year, 2018/2019, and will be used as a tool to performance monitor all types of generation.

## 4. PROPOSED RATES

The following sections define the rates used for the Other System Charges (OSC).

In the Harmonised Ancillary Services Rates and Other System Charges Decision paper for 2011-2012, the SEM Committee was satisfied that the exchange rate methodology is aligned to that utilised in the SEM. The only difference being the 5 day timeframe is taken in July rather than August in order to align to other Regulatory Authorities timeframes with regard to publication of charges.

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

In the OSC 2015-2016 recommendations paper, we proposed the following methodology to be applied going forward:

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

According to the latest Office of Budgetary Responsibility report<sup>5</sup> (Nov 2017) the current RPI year on year inflation forecasts in the UK for the 2018/19 tariff year equates to c.+2.925% while the latest Central Bank report<sup>6</sup> (Q1 2018) forecasts HICP in Ireland for the same period at c.+0.85%.

Source		2017	2018	Tariff Year Methodology	2017/2018 Tariff Year	Blended Rate Methodology	Blended rate
OBR Nov 2017	RPI	3.3%	2.8%	(.033*25% + .028*75%)	2.925%	2.925*25%	0.73125
Central Bank Q1 2018	HICP	0.7%	0.9%	(.007*25% + .009*75%)	0.85%	0.85*75%	0.6375
<b>Blended Rate</b>							<b>1.369%</b>

Table 4.0: Proposed Inflation Rate Increase

<sup>5</sup> <http://obr.uk/efo/economic-fiscal-outlook-november-2017/>

<sup>6</sup> <https://www.centralbank.ie/publication/quarterly-bulletins/quarterly-bulletin-q1-2018>

On this basis, and recognising the relative balance between Ireland and Northern Ireland, the forecast blended rate for the forthcoming 2018/19 period is 1.369% as shown in Table 4.0.

Therefore in this year’s Annual Tariff Consultation we are proposing to retain the OSC rates approved for the 2017/2018 tariff year adjusting for inflation at forecast blended rate of 1.369% for the tariff year 2018/2019. We believe our proposal is an appropriate inflation rate based on our assessment of forecast inflation at the time of initial submission.

#### 4.1 Trip Charges

The proposed Trip Charges and Constants for the 2018/2019 tariff year are shown in Table 4.1 and Table 4.2. We propose to reduce the rate to 50% of the 2017/2018 tariff year rate for all three trip types; direct, fast wind down and slow wind down.

	2017-2018	2018-2019
Direct Trip Rate of MW Loss	15 MW/s	15 MW/s
Fast Wind Down Rate of MW Loss	3 MW/s	3 MW/s
Slow Wind Down Rate of MW Loss	1 MW/s	1 MW/s
Direct Trip Constant	0.01	0.01
Fast Wind Down Constant	0.009	0.009
Slow Wind Down Constant	0.008	0.008
Trip MW Loss Threshold	100 MW	100 MW

**Table 4.1: Proposed Trip Constants**

Charge	2017-2018	2018-2019
Direct Trip Charge Rate	€4,322	€2,161
Fast Wind Down Charge Rate	€3,242	€1,621
Slow Wind Down Charge Rate	€2,161	€1,081

**Table 4.2: Proposed Trip Rates**

## 4.2 Short Notice Declaration (SND) Charges

The proposed SND Charges and Constants for the 2018/2019 tariff year are shown in Table 4.3 and 4.4. We propose to reduce the rate to 50% of the 2017/2018 tariff year rate.

<b>SND Constants</b>	<b>2017-2018</b>	<b>2018-2019</b>
SND Time Minimum	5 min	5 min
SND Time Medium	20 min	20 min
SND Time Zero	480 min	480 min
SND Powering Factor (Notice time weighting curve)	-0.3	-0.3
SND Threshold	15 MW	15 MW
Time Window for Chargeable SNDs	60 min	60 min

**Table 4.3: Proposed SND Constants**

<b>SND Charge Rate</b>	<b>2017-2018</b>	<b>2018-2019</b>
SND Charge Rate	€76 / MW	€38 / MW

**Table 4.4: Proposed SND Charge Rate**

## 4.3 GPI Charges

The proposed GPI Constants, GPI Declaration Based Charges and GPI Event Based Charges for the 2018/2019 tariff year are outlined in Table 4.5, Table 4.6 and Table 4.7 respectively. We are proposing to make changes to the rates for 2018/2019 as detailed in sections 2.2.1, 2.2.2 and 3.1.

The rates proposed are displayed with 2 decimal places in Euro. We would like to clarify that 4 decimal places are used in the calculation of the inflationary increase.

<b>GPI Constants</b>	<b>2017-2018</b>	<b>2018-2019</b>
Late Declaration Notice Time	480 min	480 min
Loading Rate Factor 1	60 min	60 min
Loading Rate Factor 2	24	24
Loading Rate Tolerance	110%	110%
De-Loading Rate Factor 1	60 min	60 min
De-Loading Rate Factor 2	24	24
De-Loading Rate Tolerance	110%	110%
Early Synchronous Tolerance	15 min	15 min
Early Synchronous Factor	60 min	60 min
Late Synchronous Tolerance	5 min	5 min
Late Synchronous Factor	55 min	55 min
Secondary Fuel Availability Factor	N/A	0.9

**Table 4.5: Proposed GPI Constants**

	2017-2018	2018-2019
<b>GPI Declaration Based Rates</b>	<b>€ / MWh</b>	<b>€ / MWh</b>
Minimum Generation	1.28	1.29
Max Starts in 24 hour period	1.08	0.00
Minimum On time	1.08	0.00
Reactive Power Leading	0.31	0.32
Reactive Power Lagging	0.31	0.32
Governor Droop	0.31	0.32
Primary Operating Reserve	0.13	0.52
Secondary Operating Reserve	0.13	0.13
Tertiary Operating Reserve 1	0.13	0.13
Tertiary Operating Reserve 2	0.13	0.13
Secondary Fuel Availability	N/A	0.03

**Table 4.6: Proposed GPI Declaration Based Charge Rates**

	2017-2018	2018-2019
<b>GPI Event Based Rates</b>	<b>€ / MWh</b>	<b>€ / MWh</b>
Loading Rate	0.64	0.00
De-Loading Rate	0.64	0.00
Early Synchronisation	2.86	0.00
Late Synchronisation	28.60	0.00

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

## 5. SUMMARY AND NEXT STEPS

Comments are invited from interested parties on this consultation paper and should be aligned with the sections and sub-sections of this document. If confidentiality is required, this should be made explicit in the response as the comments will be published on our websites<sup>7</sup>. Please note that, in any event, all responses will be provided to the RAs. **The closing date for responses is 5pm on Wednesday 2<sup>nd</sup> May 2018.**

- We will consider the comments received on the consultation paper and make recommendations to the RAs based on these;
- The RAs will approve/reject the recommendations proposed by us in light of the responses received; and
- We will implement in accordance with the RAs decision paper.

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<sup>7</sup> [www.eirgrid.com](http://www.eirgrid.com) and [www.soni.ltd.uk](http://www.soni.ltd.uk)