Harmonised Other System Charges Consultation

Tariff Year
01 October 2016 to 30 September 2017

11 April 2016

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 and System Services Costs. The OSC charges include charges for generators whose units Trip or make downward re-declarations of availability at short notice. Generator Performance Incentive (GPI) charges were harmonised between Ireland and Northern Ireland with the Harmonisation of Ancillary Service & Other System Charges "Go-live" on the 01 February 2010. These charges are specified in the Transmission Use of System Charging Statements 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:

- retain the OSC rates approved for the 2015-2016 tariff year adjusting for inflation at forecast rate of 1.9%[1] for the tariff year 2016-2017;
- revise and publish section 2.5 of the Harmonised Other System Charges Methodology Statement to clarify the application of SND charges if a unit trips under test;
- defer the Generator Performance Incentive (GPI) for Secondary Fuel declarations this year to allow adequate time for the Fuel Switching Agreements in Northern Ireland to be signed by the relevant service providers;
- present a refinement to the GPI calculation for Reserve, whereby the required decrement rate is included as part of the calculation; and
- introduce the RoCoF (Rate of Change of Frequency) GPI according to the deadline associated with the unit categorisation. This will be implemented in line with the RAs RoCoF Decision paper

[1] http://budgetresponsibility.org.uk/efo/economic-and-fiscal-outlook-november-2015 and https://www.centralbank.ie/publications/Pages/QuarterlyBulletin.aspx

ABBREVIATIONS

AGU	Aggregated Generator Unit
AS	Ancillary Service
ASP	Ancillary Service Provider
DETI	Department of Enterprise, Trade and Investment
DMOL	Design Minimum Operating Level
DSU	Demand Side Unit
EDIL	Electronic Dispatch Instruction Logger
GPI	Generator Performance Incentive
HAS	Harmonised Ancillary Services
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 / System Support Services 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 or the contracted values in the relevant System Services agreement where applicable.

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.

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.

GPIs are designed to incentivise compliance with respect to the Grid Code and are not linked with Ancillary Service Agreements.

We consult on an annual basis regarding changes to the OSC and the purpose of this consultation paper is to obtain views on the proposed OSC rates for the tariff year 01 October 2016 to 30 September 2017.

1.1 The Delivery of I-SEM

In last year's Other System Charges consultation we presented the possibility of a review of OSC in line with the decision on I-SEM design. As the go live date for I-SEM aligns with the start of the tariff year 2017-2018 we plan to consult on any necessary OSC changes in next year's consultation paper.

1.2 OSC Review

The OSC were introduced on a harmonised basis on 01 February 2010 and are divided into the following:

- Trip Charge;
- Short Notice Declaration Charge; and
- Generator Performance Incentive 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 constraints costs.

It is important for the efficient and economic operation of the system to ensure that generators maintain the performance required in the respective Grid Codes and act in a manner that facilitates the operation of the system. The harmonised arrangements establish Generator Performance Incentive Charges monitoring performance on an all-island basis. The arrangements are 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 service providers as the power system develops.

We have found the introduction of GPIs has led to improved performance of certain generation units in relation to the required Grid Code compliance. In some cases GPIs have placed focus on the performance and highlighted the level of compliance of certain generator units. Therefore we are proposing to retain the OSC rates approved for the 2015-2016 tariff year with the inclusion of the agreed inflation rate.

1.3 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 and the total OSCs for the tariff year;
2. The total SND charges levied. This is reported on an all-island basis and the total OSCs for the tariff year; and
3. The revenue levied for each category of GPI. This is reported on an all-island basis and the total GPIs for the tariff year.

These monthly reports are available on our websites which can be accessed at www.EirGrid.com or www.soni.ltd.uk.

1.4 Instructions for Response

Responses should be sent to:
Vivienne.Price@soni.ltd.uk, Amanda.Kelly@Eirgrid.com and AS@Eirgrid.com.

The closing date for receipt of responses is 5pm on Monday 9th May 2016.

It would be helpful if comments were aligned with the sections and sub-sections of this consultation document. It would also be helpful if responses were not confidential. 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 RAs.

2. EXISTING OSC DEVELOPMENTS

We have reviewed the charges levied on generating units for the tariff year 2014-2015 and observe a similar level of compliances compared to the same period in tariff year 2013-2014. This trend can be viewed on the monthly reports published on the EirGrid and SONI websites.

2.1 Short Notice Re-declarations

Short Notice Declarations (SND) are made by generators to reflect changes in availability of committed plant or unscheduled outage of dispatched plant. The SND charges are intended to incentivise behaviour that enhances system security and reduces dispatch balancing costs by providing us with notice to re-dispatch plant at the least cost. We believe that the charge is appropriate and would not propose to change the charge for this upcoming tariff year other than increasing in line with the assumed inflation rate.

We would like to make a clarification with regards to the SND charges. There is ambiguity regarding if SND charges would apply when a unit Trips when it is Under Test in the SEM.

At present, in the published Harmonised Other System Charges Methodology Statement, located on our websites[2], section 2.5 states "SND charges are not applied when a unit is Under Test in the SEM on condition that the generator has declared the change in availability in EDIL using the TSO agreed reason code."

We would like to clarify that all units Under Test in the SEM will be liable for SND charges if they Trip as if the unit was in normal operation. This is not a change from the current working methodology. Therefore to improve clarity around what happens when a unit Trips when Under Test in the SEM we propose to revise and publish section 2.5 with the following change:

'2.5 Short Notice Declarations (SNDs)

SNDs relate to unscheduled variations in availability of committed plant or to the unscheduled outage of dispatched plant. The charges are intended to incentivise behaviour to enhance system security and reduce operating costs. Further details can be found in the SEM Committee decision paper, SEM-10-001, published in January 2010. SND charges will not be applied when a unit is Under Test in the SEM on condition that the Generator has followed their testing profile. It should be noted that all units Under Test in the SEM will be liable for SND charges should they Trip, as if the unit was in normal operation.'

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

2.2 Trip Charge

We stated in the 2014-2015 OSC Recommendations paper that the review of the Trip Charge methodology should be visited again once the DS3: Enhanced Performance Monitoring System is put in place. This is part of the DS3 project which will log any trips or load drops over a certain threshold (including WFPS). The performance monitoring work is ongoing and due to go live in 2016. Once in place, we will review and consult with industry prior to any methodology changes being introduced.

2.3 Late Synchronisation Charge

Since the publication of the 2012-2013 OSC Consultation paper we have given updates on the modifications to the joint sections of the Northern Ireland and Ireland Grid Codes in respect of late synchronisation windows (required because of the pending Failure to Follow Notice to Synchronise Instruction modifications). The modification proposed a change in the late synchronisation window from 55 minutes to 15 minutes. After consultation with industry, analysis of the impact on costs of the modification and TSO reports provided to the RAs, the modification has now been approved[3] and implemented on 14 October 2015.

2.4 Operating Reserve GPI

We are proposing to make a refinement to the GPI calculation for Reserve, whereby the required decrement rate is included as part of the calculation. This proposal is currently under development and will be consulted on in more detail in next year's consultation.

The principle of the decrement rate is shown in Figure 1 and is the slope of the Contracted Reserve Decrement Rate. It shows the relationship between available reserve and the active power output of the unit.

[3] http://www.soni.ltd.uk/media/documents/Operations/Grid-Code/SONI%20Ltd%20re%20Grid%20Code%20Mod%20Prop%20MPID%20223%20-%20Failure%20to%20Sync.pdf and http://www.eirgridgroup.com/site-files/library/EirGrid/MPID223_CERApprovalLetter.pdf

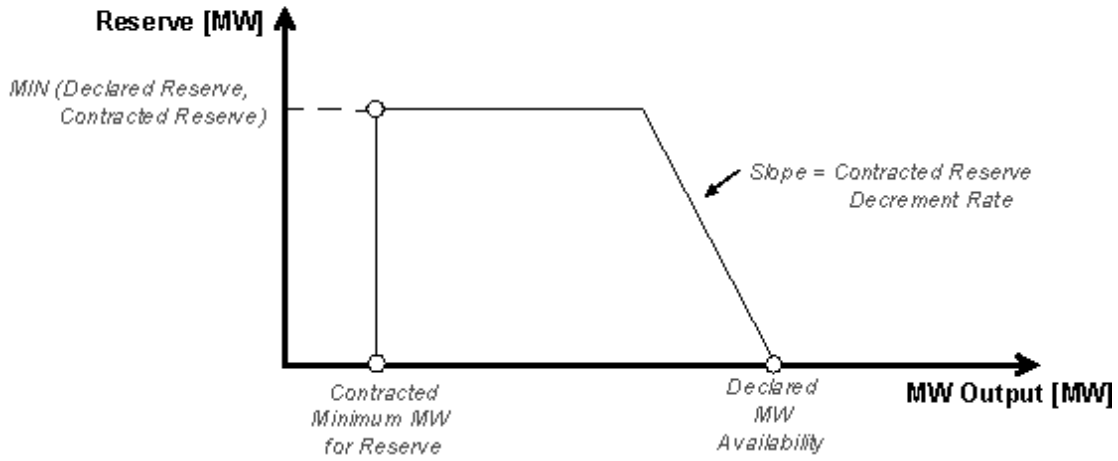

Figure 1 Reserve Curve

We have noted that, since the introduction of the harmonised Reserve GPI charge in February 2010, the compliance of the contracted reserve (MW) with respect to the required reserve quantities (MW) has improved. There has however been limited improvement in the contracted decrement rate for all categories of reserve and also deteriorations across the portfolio. As generating units are scheduled for dispatch based on their contracted reserve values any deviations from the required reserve values will cause an increase in Imperfection costs. These costs are passed through to suppliers and are ultimately borne by electricity consumers.

The objective of the proposed design refinement is to add a multiplication factor to the GPI charge. Generating units which are compliant with the required decrement rate are applied a multiplication factor of 1 (i.e. no increase). Generating units that have a non-compliant decrement rate would have a greater multiplication factor the greater their non-compliance. The proposed multiplication factor would therefore be:

$$Factor = \frac{Required\ Decrement\ Rate}{Contracted\ Decrement\ Rate}$$

Any additional charges levied through this design refinement will be passed through to offset Imperfection charges.

We would welcome participants' views on the merits of the proposed refinement. The proposal will be consulted on further in next year's consultation.

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 GPI is considered worthwhile or an existing GPI should be modified; and
2. Implementation of OSC for non-conventional generation.

3.1 Secondary Fuel GPI

We had previously proposed a new GPI relating to a generating unit's declared secondary fuel capability. However, this was deferred 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[4] on 19 October 2015. In addition, it is expected that the Utility Regulator will approve the form of Fuel Switching Agreements in Northern Ireland shortly.

We believe there will now be merit in introducing a declaration based GPI for units that can operate on secondary fuel, in order to quantify secondary fuel availability. This has been developed as a gap has been observed in the level of compliance of some generating units. 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.

In the consultation paper for the 2015-2016 tariff year we stated that a review had taken place on the methodology of the GPI proposed in the 2011-2012 tariff year consultation. The responses from service providers to last year's consultation have been noted however we believe the proposed GPI methodology meets the need to encourage compliance and therefore remains unchanged. The following is a general summary of the design of the GPI:
Generating units declare their MW availability on their secondary fuel; and 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.

[4] https://www.detini.gov.uk/publications/modification-northern-ireland-fuel-security-code

$SF\_Charge_X = TP * DSFC * A * SecFuel\_RATE$

where:

SF_Charge_X	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 or No condition in the calculation;
A	is the Availability of the Generating Unit (expressed in MW) on their primary fuel prevailing at the De-Synchronisation Load Time; and,
SecFuel_RATE	is the Secondary Fuel charge rate (expressed in €/MWh or £/MWh) specified in the TUoS Statement of Charges.

We would again welcome participants' views on the proposed methodology.

We propose to defer the GPI until tariff year 2017/2018 to allow adequate time for the Fuel Switching Agreements in Northern Ireland to be signed by the relevant service providers.

3.2 Introduction of new GPIs

Currently GPIs are not levied on all technology types of electricity generation. Therefore we believe it could be useful to introduce new GPIs for all generating units, at the appropriate time in the future. It is likely that these GPIs would include incentives to maximise compliance. Based on the 2020 renewable policy targets in Ireland and Northern Ireland wind farms may at times be the major energy source on the all island power system. Therefore we need to ensure that there is adequate performance from all plant including windfarms.

3.2.1 Wind farm GPI

There have been significant strides by windfarms over the last couple of years in terms of achieving Grid Code compliance.

Outside of the GPI process, we have developed, in conjunction with industry, innovative processes and advances in technology in order to ensure compliance is achieved. This cooperation has led to the reverse of compliance statistics with a 232% increase in compliance certificates issued over a 20 month period. It also highlights the importance of working with industry and the changing behaviour in the operation and implementation of a secure, sustainable, power system. Figure 3.1 shows the increase in the number of windfarms with compliance certificates from May 2014 to January 2016.

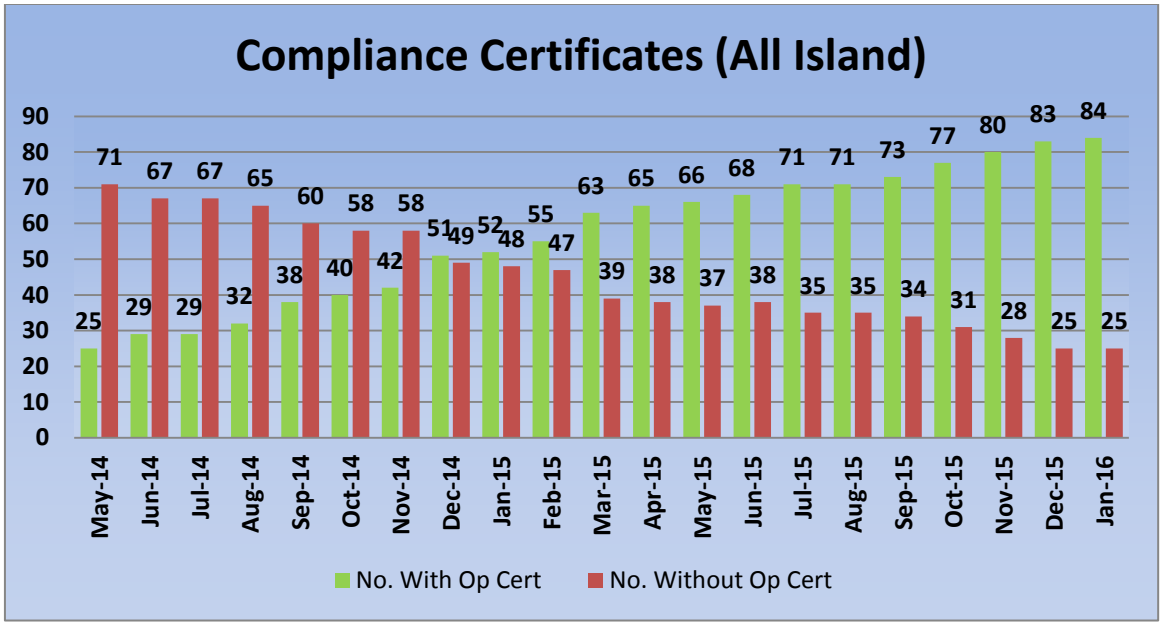

Figure 3.1 Number of Wind farms with Compliance Certificates

Nevertheless, it is our opinion that it may still be useful to introduce GPIs, similar to those currently in place for other generating units, at the appropriate time in the future to ensure compliance is maintained. We stated in last year's consultation paper that it is likely that these GPIs would include incentives to maximise compliance with Design Minimum Operating Level (DMOL), Reactive Power and Reserve as follows:

- The DMOL GPI would be a trading period based charge on the deviation from the Grid Code/Derogated requirement;
- The Reactive Power GPI would be a trading period charge and will be based on the deviation from the Grid Code/Derogated requirement; and

- The Reserve GPI charge would be a trading period charge and will be based on the deviation from the Grid Code/Derogated requirement.

These areas are significant for maintaining system security and are still under our review. Once this review is complete proposals will be included in future consultations.

3.3 RoCoF GPI

It is our expectation to introduce a RoCoF GPI in line with the publication of the RA's RoCoF decision paper[5]. The implementation date has been clarified by the Regulatory Authorities and is currently set for June 2016. We have welcomed the engagement that has taken place with the industry and the RAs regarding the implementation of the GPI.

[5] http://www.uregni.gov.uk/uploads/publications/Decision_Paper_on_the_Rate_of_Change_of_Frequency_Grid_Code_Modification.pdf and http://www.cer.ie/docs/000260/CER14081%20ROCOF%20Decision%20Paper%20-%20FINAL%20FOR%20PUBLICATION.pdf

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 recommendation 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[6] (Nov 2015) the current RPI inflation forecasts in the UK for the 2016/17 tariff year is 2.675% while the latest Central Bank report[7] (Q1 2016) forecasts HICP in Ireland for the same period at 1.675%.

Source		2016	2017	Tariff Year Methodology	2016/2017 Tariff Year	Blended Rate Methodology	Blended rate
OBR Nov 2015	RPI	2%	2.9%	(.020*25% + .029*75%)	2.675%	2.675*25%	0.669
Central Bank Q1 2016	HICP	1%	1.9%	(.010*25% + .019*75%)	1.675%	1.675*75%	1.256
Blended Rate							**1.9%**

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 2016/17 period is 1.9% as shown in Table 4.0.

[6] http://budgetresponsibility.org.uk/efo/economic-and-fiscal-outlook-november-2015/
[7] https://www.centralbank.ie/publications/Pages/QuarterlyBulletin.aspx

The updated forecast for the 2015/16 period is 1.0% which is in line with the regulators decision made last year for 2015/16 tariffs.

Therefore in this year's Annual Tariff Consultation we are proposing to retain the OSC rates approved for the 2015-2016 tariff year adjusting for inflation at forecast blended rate of 1.9% for the tariff year 2016-2017. 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 following tables propose the Trip Charges and Constants for the 2016-2017 tariff year. As seen in Table 4.1 and Table 4.2 there are no changes to the proposed charges compared with the previous tariff year other than increasing in line with the agreed inflation rate.

	2015-2016	2016-2017
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	2015-2016	2016-2017
Direct Trip Charge Rate	€4,183	€4,262
Fast Wind Down Charge Rate	€3,137	€3,197
Slow Wind Down Charge Rate	€2,091	€2,131

Table 4.2: Proposed Trip Rates

4.2 Short Notice Declaration (SND) Charges

The following tables propose the SND Charges and Constants for the 2016-2017 tariff year. As seen in Table 4.3 and 4.4 there is no change to the proposed constants and charges compared with the 2015-2016 tariff year other than increasing in line with the proposed inflation rate.

SND Constants	2015-2016	2016-2017
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

SND Charge Rate	2015-2016	2016-2017
SND Charge Rate	€73 / MW	€74 / 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 2016-2017 tariff year are outlined in Table 4.5, Table 4.6 and Table 4.7 respectively. We are proposing to make no change to the rates for 2016-2017 other than increasing in line with the proposed inflation rate.

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

GPI Constants	2015-2016	2016-2017
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

Table 4.5: Proposed GPI Constants

	2015-2016	2016-2017
GPI Declaration Based Rates	**€ / MWh**	**€ / MWh**
Minimum Generation	1.23	1.26
Max Starts in 24 hour period	1.05	1.07
Minimum On time	1.05	1.07
Reactive Power Leading	0.30	0.31
Reactive Power Lagging	0.30	0.31
Governor Droop	0.30	0.31
Primary Operating Reserve	0.13	0.13
Secondary Operating Reserve	0.13	0.13
Tertiary Operating Reserve 1	0.13	0.13
Tertiary Operating Reserve 2	0.13	0.13

Table 4.6: Proposed GPI Declaration Based Charge Rates

	2015-2016	2016-2017
GPI Event Based Rates	**€ / MWh**	**€ / MWh**
Loading Rate	0.62	0.63
De-Loading Rate	0.62	0.63
Early Synchronisation	2.77	2.82
Late Synchronisation	27.68	28.20

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[8]. Please note that, in any event, all responses will be provided to the RAs. **The closing date for responses is 5pm on Monday 9th May 2016.**

- 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.

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