

Imperfections Charges

For

October 2012 – September 2013

Decision Paper

SEM-12- 066

2 August 2012

1 EXECUTIVE SUMMARY

On 14 June 2012 the SEM Committee published a consultation on the proposed imperfections charge for the period from 1 October 2012 to 30 September 2013. Four responses were received to this paper. The main themes within these responses related to Intraday impact, Interconnector assumptions and Data Freeze timeframe.

The SEM Committee have therefore decided that the imperfections charge to be applied from 1 October 2012 should be €4.71 per MWh. The composition of this is summarised in Table 1 below.

	2012-13	2011-12	Change
Imperfections Allowance (€ million)	142.10	142.70	-0.42%
K factor (€ million)	16.79	54.50	
Offset for Other System Charges	-4.00	-12.00	
Total Allowance (€ million)	154.89	185.20	-16.37%
Forecast Demand (GWh)	32,900	34,030	-3.32%
Tariff (€/MWh)	4.71	5.44	-13.42%

Table 1: The composition of the Imperfections Charge 2012-13 and 2011-12

2 INTRODUCTION

2.1 IMPERFECTIONS CHARGE & DISPATCH BALANCING COSTS

In addition to SEMO's operational costs, the Market Operator (MO) tariffs have to recover Imperfections Charges which are made up of Dispatch Balancing Costs, Make Whole Payments and Energy Imbalance Charges. The Transmission System Operators (TSOs) submitted a paper to the Regulatory Authorities (RAs) on 30 April 2012 detailing the costs relating to Dispatch Balancing Costs. Dispatch Balancing Cost is a TSO-defined term and refers to the sum of Constraint Payments, Uninstructed Imbalance Payments and Generator Testing Charges. See section 3.1 below for an overview. The

Imperfections Charges are made only on Suppliers while the MO Charges are made on Suppliers and Generators.

2.2 OBJECTIVE OF PAPER

The objective of this decision paper is to determine the Imperfections Charge for tariff year 2012-13. This decision paper summarises the comments received from interested parties following the publication of the Imperfections Charge Consultation Paper on 14 June 2012. The responses received have been duly considered in preparation of this decision paper.

3 IMPERFECTIONS CHARGE

3.1 OVERVIEW

The costs associated with Imperfection Charges are depicted in the diagram below. Three of the costs covering constraint costs, uninstructed imbalance costs and testing charges (collectively known as Dispatch Balancing Costs) are provided by the TSOs, Eirgrid and SONI. In addition to these, there are also Energy Imbalances and Make Whole payments. The estimate for these two costs is provided by SEMO.

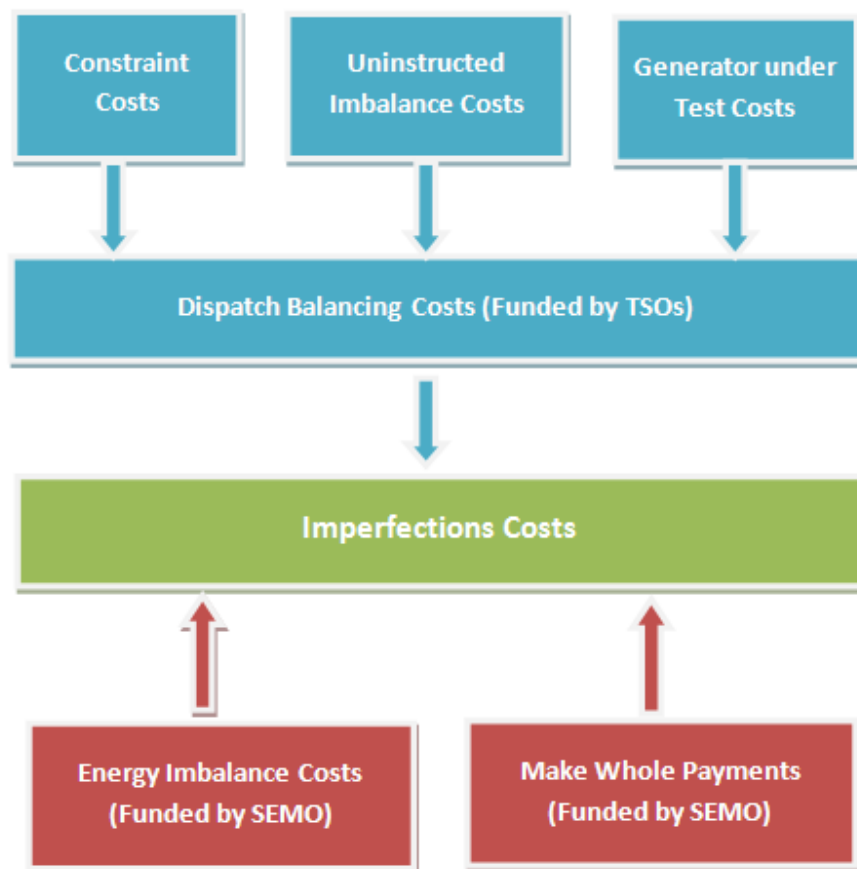


Figure 3: Make up of Imperfection Charges

The TSOs submission was prepared jointly by the Eirgrid and SONI, and captured an all-island estimate of Dispatch Balancing Costs. The forecast of Dispatch Balancing Costs is for the period from 1 October 2012 to 30 September 2013.

All these costs are estimated *ex-ante* and recovered from Suppliers on a MWh basis through the Imperfections Charge.

3.2 DISPATCH BALANCING COSTS

The budget proposed by the TSOs for the tariff year 2012-13 is €142 million compared to €142.6 million for the tariff year 2011-12. The forecast has been impacted by a number of key factors such as increased gas and coal prices, increased interconnection and the reduction in primary operating reserve requirement. Furthermore the introduction of the Carbon Price Floor in Great Britain in April 2013 will impact generation price within Northern Ireland.

3.2.1 RESPONSES

The consultation paper generated four formal responses within the electricity industry with varying and wide ranging views. One respondent considered the constraints cost estimate to be too low, while another response had an expectation that constraint costs would have reduced further in comparison with the previous year, therefore considering the estimate to be too high.

[Response: oil and distillate prices](#)

With regard to reducing oil and distillate prices a respondent expected a favourable reducing impact on constraint costs.

RAs view: Any benefit from reduced oil and distillate prices has been greatly outweighed by the expected increase in the forecasted prices for gas and coal. Constraint costs are more dependent on out of merit generation, in particular, the price relating to Open Cycle Gas Turbines (OCGT) as they are likely to be required for reserve and system security.

[Response: Turlough Hill](#)

A further comment received had anticipated the expected return of Turlough Hill, in full operation for tariff year 2012-13, to reduce constraint costs as it provides flexible, fast-responsive generation. The respondent further queried the increase in constraint costs specific to Turlough Hill in comparison with the estimate for the previous tariff year 2011-12.

RAs view: While Turlough Hill improves flexibility on the system the benefits have been countered somewhat by the need to manage higher levels of wind and interconnection in real time. Furthermore the increase in forecasted gas and coal prices increase the overall constraint costs. This increase specific to Turlough Hill represents the assumption that Turlough Hill will be operating in full throughout tariff year 2012-13. For

tariff year 2011-12 the assumption was partial operation on a staggered basis following return from outage. Therefore an increase to full operation of Turlough Hill increases associated constraint costs which are calculated in line with previous years.

[Response: Intraday](#)

Three respondents commented on the expected impact of Intraday on constraints costs and felt these had not been fully addressed by the TSOs. Two of these responses expected an increase to constraint costs based on, *inter alia*, within day imports expected to result in constraints of scheduled generators on the island. However the third respondent had expected the introduction of Intraday to reduce constraint costs as they believe there will be more opportunities for generators to respond more regularly to generation and demand changes.

RAs view: Due to the varying views across the industry the TSOs have assumed Intraday will not significantly influence constraint costs but have identified it as a risk which is dependent on participant behaviour diverging greatly from the assumptions in the model.

[Response: Carbon Price Floor](#)

One respondent requested clarification on the source behind the calculations and the expected effect on the price of generation in Northern Ireland.

RAs view: In response to the clarification sought on the Carbon Price Floor the TSOs sourced their information from the UK Treasury Website¹. In the model, this has an impact on the price of generation in Northern Ireland, from April 2013, in particular coal and to a lesser extent gas. It also has a notable effect on interconnector flows. This has the potential impact of displacing Northern Ireland generation units further down the merit order within the SEM market schedule.

[Response: Interconnection modelling](#)

Further details on the modelling of the interconnection and of BETTA have been requested by a respondent.

RAs view: The TSOs have provided further detail as follows:

Interconnector trades with Great Britain are determined using price arbitrage. To determine the GB price, the BETTA market was explicitly modelled and a price determined using the Nash-Cournot algorithm built into PLEXOS.

¹www.hm-treasury.gov.uk/consult_carbon_price_support.htm

Generation capacity data was taken from the latest National Grid UK 7-year Statement². Heat rates were based on a third party data set. Comparisons with real 2011 bids on the Amsterdam Power Exchange were also made. A “hurdle rate” is applied to interconnection to account for factors that would affect the decision of a rational trader. The “hurdle rate” is made up of an allowance for the Capacity Payment Mechanism in SEM, Uplift (a feature of modelling in Plexos), GB network charges, and a risk factor. Interconnector flows in the model were therefore determined for each interconnector, for each hour of the study horizon, based on the assumptions described above.

[Response: Static Reserve](#)

With respect to the provision of static reserve a respondent has requested further clarification. The respondent further queried the determination of static reserve availability.

RAs view: The TSOs have provided further clarification on the provision of static reserve as follows:

The forecast model assumes that there is 50MW static reserve available on the Moyle Interconnector with an additional 25MW available at times. It is further assumed that up to 50MW of static reserve is available from EWIC. Both of these assumptions however are limited in reality by the scheduled flows. This limitation is reflected in the model by a maximum of 100MW static reserve which can be provided from interconnection in any trading period.

With regard to the determination of static reserve availability the TSOs have confirmed the use of estimated ‘dynamic’ calculations. The PLEXOS model schedules flows on the two interconnectors and reserve provision from them is calculated afterwards, based on remaining unused capacity.

[Response: Transmission Forced Outages](#)

A respondent commented on the treatment of transmission forced outages and suggested a contingency should be included in constraint costs.

RAs view: With regard to a respondent’s comment regarding transmission forced outages the TSOs have identified it as a specific risk classified under ‘High Impact Low Probability’ events. The TSOs have considered this issue during their modelling process and have decided that due to the unpredictable nature of such outages an

² 2011 National Electricity Transmission System (NETS) Seven Year Statement - <http://www.nationalgrid.com/uk/Electricity/SYS/current/>

explicit cost would not be included but any actual costs would be addressed through an ex-post adjustment.

[Response: Data Freeze Timeframe](#)

Three respondents commented on the data freeze timeframe and suggest late February to be too soon to implement the data freeze.

RAs view: To clarify, the data freeze, currently late February each year, is necessary to facilitate the TSOs submission to RAs two months later in April. Following the data freeze two models of the All-Island system are carried out. One is an unconstrained model using PLEXOS and the other a constrained model which includes transmission system, reserve and security requirements. This second model is the more complex transmission model and involves more time to both build and validate. To prepare the consultation paper in full we also require demand forecast and K factor figures which we receive May/June each year.

3.2.2 DISPATCH BALANCING COSTS SUMMARY

Taking into consideration the responses from consultation the amount of €142M is approved by the SEM Committee to be collected by SEMO via the imperfections tariff to cover the Dispatch Balancing Costs. This is subject to an ex-post adjustment and any under- or over-recovery will be reflected in the following year's tariff.

3.3 ENERGY IMBALANCES

It is assumed that no Energy Imbalances will arise. If energy imbalances do occur, they are assumed to have an equal and opposite effect on constraints and will offset any increase or decrease accordingly. No comments were received in relation to this and the provision of a zero net cost has been included within the tariff for 2012-13.

3.4 MAKE WHOLE PAYMENTS

Make Whole Payments purpose is to provide the balance between total energy payments to a generator and the production cost of that generator on a weekly basis. Due to the SEM design these payments are rarely necessary. Therefore the proposed provision for Make Whole payments is €100,000. This figure has been revised

downwards over the years to take account of reduced levels of Make Whole Payments arising in the Single Electricity market.

No comments were received in relation to this and the SEM Committee has decided to allow a provision of €100,000 in the imperfections tariffs for the 2012-13 tariff period.

3.5 RECOVERY OF IMPERFECTION COSTS

As stated previously, the amounts detailed above are estimated *ex-ante* and this estimate is recovered during the relevant tariff period through the imperfections charge.

However, it is almost certain that differences between the costs being recovered and paid out will lead to instances where SEMO will:

- require working capital to fund constraint payments that exceed revenue collected through the imperfections charge, or,
- have collected revenue through the imperfections charge that exceeds the amount being paid out on constraints.

To allow for the first scenario the mechanism adopted for previous SEMO Revenues and Tariffs was that any under-recovery of revenue during the tariff period plus financing costs will be financed by SEMO. This reflects the cost of short-term financing required to provide SEMO's working capital needs.

See section 3.5.1 below for further detail.

Similarly, for situations where the revenue recovered by SEMO through the Imperfections Charge is greater than that paid out in constraints (second scenario above), the Imperfections Charge in the following tariff period(s) will be reduced by an appropriate amount to reflect the allowed over-recovery and the associated interest.

3.5.1 PROVISION OF WORKING CAPITAL FOR IMPERFECTION CHARGES

The RAs proposed that, as is currently the case, the funding of working capital requirements be provided by EirGrid and SONI.

In addition, the RAs proposed that funding required to cover fluctuations during the tariff period, and any allowed under-recovery of revenue during the tariff period be paid back in the subsequent tariff period(s) with the appropriate amount of interest. This reflects the cost of short-term financing required to provide SEMO's working capital needs.

Similarly, for situations where the revenue recovered by SEMO through the Imperfections Charge is greater than that paid out, it is proposed that the Imperfections Charge in the following tariff period(s) will be reduced by an appropriate amount to reflect the allowed over-recovery and the associated interest.

No comments were received in respect of this proposal and the SEM Committee have decided that this mechanism will continue for the 2012-13 tariff period.

3.6 OTHER SYSTEM CHARGES

Other System Charges (OSC) are levied on generators whose failure to provide necessary services to the system lead to higher Dispatch Balancing Costs and Ancillary Services Costs.

This is the second year Other System Charges are included in the Imperfections Charge following the necessary approval. The TSOs have estimated that Other System Charges up to the end of September 2012 will total €4 million. This estimate includes a projection for the rest of the 2011-12 tariff year.

3.7 K FACTOR

3.7.1 RESPONSES

[Response: K factor for previous tariff year 2011-12](#)

A comment received in one of the responses made reference to the previous year's K-factor of €54.5 million which formed part of the imperfections charge for 2011-12. They inferred a significant amount of this was attributable to Turlough Hill being unavailable.

RAs view: To clarify, forced outages of generators and key reserve providers, including Turlough Hill did form part of this under recovery. However, other significant factors include actual fuel costs being above those forecast in the submission, together with higher than forecast system demand due to the exceptionally cold winter experienced late 2010 and early 2011 also contributed greatly to the high K factor adjustment.

[Response: K factor to be latest K estimate](#)

A respondent agreed with the use of the current K factor mechanism and commented that the 'latest "K" estimate' should be used.

RAs view: The K factor comprises of two elements, firstly finalised actuals and therefore the necessary K factor adjustments for the previous tariff year (in this case 2010-11). The second element is to include a best estimate of the current tariff year (in this case 2011-12) comprising of actual constraint costs together with an estimate for the remaining tariff year.

3.7.2 K FACTOR SUMMARY

The K factor for the Imperfections calculation for the 2012-13 tariff year is €16.79 million of an under recovery which will increase the 2012-13 Imperfections charge.

3.8 IMPERFECTIONS CHARGE

Based on the above decisions, the imperfections charge will be €4.71 per MWh for the period 1 October 2012 to 30 September 2013. This is a decrease of 13.42% from 2011-12.

	2012/13	2011/12	Change
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