Imperfections Charge

October 2015 – September 2016

And

Incentive Outturn

October 2013 – September 2014

Consultation Paper

SEM-15-041

16 June 2015

CONTENTS

1 EXECUTIVE SUMMARY

The Imperfections Charge is made up of a number of components, the largest of which relates to Dispatch Balancing Costs (DBC). Other costs include Make Whole Payments, Energy Imbalances and Other System Charges. The K factor adjustment mechanism facilitates the appropriate adjustments for under or over-recovery in previous years.

Eirgrid and SONI, together the Transmission System Operators (TSOs), have prepared and submitted the:

1. 'Forecast Imperfections Revenue Requirement for Tariff Year 1st October 2015 to 30th September 2016'[1] (2015/16 Forecast); and
2. 'Imperfections Costs Incentive for Tariff Year 1st October 2013 to 30th September 2014'[2] (2013/14 Incentive Outturn).

The Utility Regulator (UR), in Northern Ireland, and the Commission for Energy Regulation (CER), in the Republic of Ireland, together the Regulatory Authorities (RAs), provide comments on both submissions.

The purpose of this consultation paper is to inform and obtain the views of market participants and other stakeholders on the submissions and on the recommendations made by the RAs.

1.1 2015/16 FORECAST

The TSOs have forecast an Imperfections revenue requirement of €170.7 million for the 2015/16 tariff year. This represents a 5.8% decline from the €181.2 million forecast for the 2014/15 tariff year[3]. Taking into account a K factor adjustment of (€22.1m), this results in a 2015/16 Imperfections Charge of €4.47 per megawatt-hour (MWh), compared with €5.60 per MWh for the 2014/15 tariff year, as shown in Table 1 overleaf.

The RAs are minded to endorse the TSOs' 2015/16 Forecast, subject to further checking of the underlying model and the calculations underpinning the K factor value.

[1] Appendix 1 - Forecast Imperfections Revenue Requirement for Tariff Year 1st October 2015 to 30th September 2016, dated 29th May 2015.
[2] Appendix 2 - Imperfections Costs Incentive for Tariff Year 1st October 2013 to 30th September 2014, dated 3rd June 2015
[3] Forecast Imperfections Revenue Requirement for Tariff Year 1st October 2014 to 30th September 2015, dated 1st May 2014

	2015-16	2014-15	Change
Imperfections Allowance (€m)	170.70	181.20	(5.8)%
K factor (€m)	(22.12)	5.25	
Total Allowance (€m)	**148.58**	**186.45**	**(20.3)%**
Forecast Demand (GWh)	33,230	33,320	(0.3)%
Tariff (€/MWh)	**4.47**	**5.60**	**(20.18)%**

Table 1: Imperfections Charge 2015/16 and 2014/15

1.2 2013/14 INCENTIVE OUTTURN

DBC are a significant cost passed on to the all-island consumer and represent the majority of the Imperfections Charge[4]. In light of the above, the 'Single Electricity Market Incentivisation of All-Island Dispatch Balancing Costs Decision Paper SEM-12-033' (the Decision Paper) introduced an all-island DBC incentive mechanism with effect from 1 October 2012[5]. The resultant incentive payment/penalty will be applied on a 75:25 split between Ireland's Transmission Use of System (TUoS) and Northern Ireland's System Support Services (SSS) revenues respectively.

The TSOs' assessment of the 2013/14 Incentive Outturn shows an actual Imperfections Charge of €150.1 million, €52.4 million lower than the ex-post adjusted Imperfections Charge. This saving potentially entitles the TSOs to an incentive payment of €2.5 million[6] and is the first year in which an incentive payment has been claimed.

The RAs are minded to endorse the payment of the €2.5 million incentive amount. This incentive scheme will continue to be monitored over the coming years to determine its effectiveness.

1.3 PROVISION OF COMMENTS

Comments on both the 2015/16 Forecast Imperfections Charge and the 2013/14 Incentive Outturn are invited from industry and the public by 15 July 2015 as detailed in section 7.

[4] DBC has accounted for 95-100% of the forecast Imperfections Charge over the last 5 tariff years
[5] SEM-12-033 Incentivisation of All-Island Dispatch Balancing Costs Decision Paper, dated 5 June 2012
[6] See Appendix 2 – Table 10: Method of calculating the incentive payment with ex-post adjusted baseline

2 INTRODUCTION

2.1 THE SINGLE ELECTRICITY MARKET

The All-Island wholesale electricity market was established as the Single Electricity Market (SEM) in November 2007. The SEM is a centralised or gross mandatory pool market, with electricity being bought and sold through the pool under a market clearing mechanism.

Generators receive the System Marginal Price (SMP) for their scheduled dispatch quantities, Capacity Payments for their actual availability and Constraint Payments for dispatches outside the market schedule due to system constraints and other specific factors.

Suppliers purchasing energy from the pool will pay the SMP for each trading period, Capacity Charges, and System Support Charges. The SEM market rules are set out in the Trading and Settlement Code (TSC). The SEM is governed by the SEM Committee (SEMC) which was set up by the Governments in the Republic of Ireland and Northern Ireland. This Committee has representatives from both RAs, UR in Northern Ireland and CER in the Republic of Ireland, together with an Independent Member. The SEM is operated by the Single Electricity Market Operator (SEMO) which is a contractual joint venture between the System Operators EirGrid and SONI.

2.2 OBJECTIVE OF PAPER

The objective of this consultation paper is to solicit comments from interested parties on both the 2015/16 Forecast Imperfections Charge and the 2013/14 Incentive Outturn.

2.3 OVERVIEW

The Imperfections Charge is levied on suppliers by SEMO. The purpose of the Imperfections Charge is to recover the anticipated DBC (less Other System Charges), Make Whole Payments, any net imbalance between Energy Payments and Energy Charges and Capacity Payments and Capacity Charges over the year, with adjustments for previous years as appropriate. The costs associated with the Imperfections Charge are depicted in Figure 1 overleaf and a description of each provided in the subsequent paragraphs.

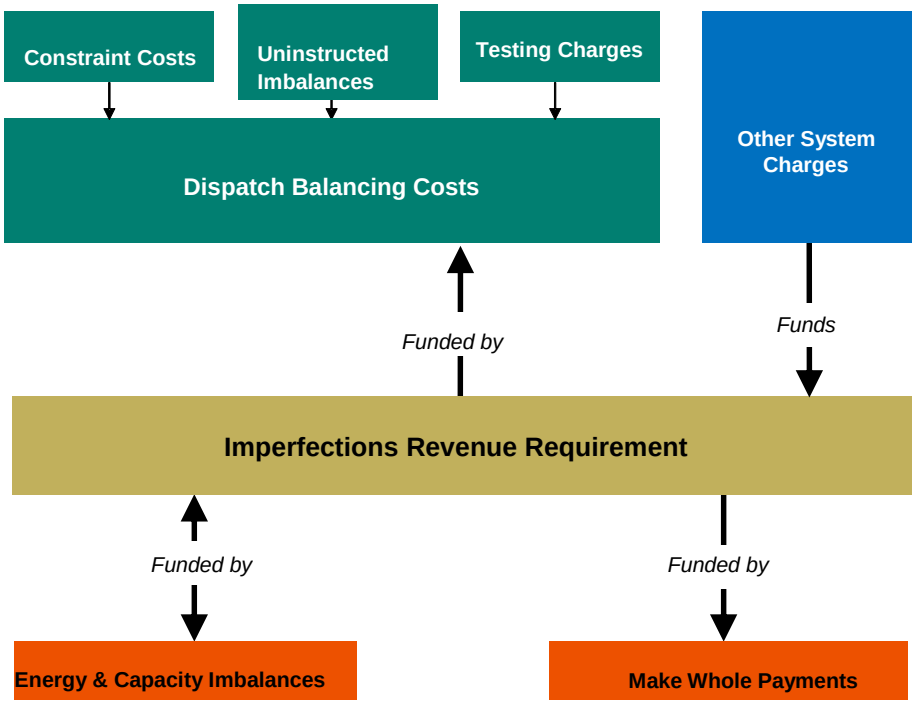

Figure 1: Imperfections Charge Components

3 THE 2015/16 FORECAST

The TSOs' 2015/16 Forecast was prepared jointly by EirGrid and SONI, and captures an all-island estimate of DBC. All costs are estimated ex-ante and recovered from suppliers on a MWh basis through the Imperfections Charge. The TSOs have forecast an Imperfections revenue requirement of €170.7 million for the 2015/16 tariff year. This represents a 5.8% decline from the €181.2 million forecast for the 2014/15 tariff year. There are a number of key factors influencing the 2015/16 Forecast, including:

- Lower levels of forecasted interconnector imports contribute to a reduction in forecast Constraint Costs.
- A decrease in forecast fuel prices is slightly offset by a weakening exchange rate, however overall this leads to a reduction in forecast Constraint Costs.
- An increase in wind generation relative to overall demand contributes to an increase in forecast Constraint Costs.
- A provision has been made for the inclusion of Gas Transportation Capacity (GTC) charges[7] for selected gas generating units in Northern Ireland, contributing to an increase in forecast Constraint Costs.

The graph below illustrates the trend in the forecast Imperfections Charge compared to the actual Imperfections Charge (shown in the years available).

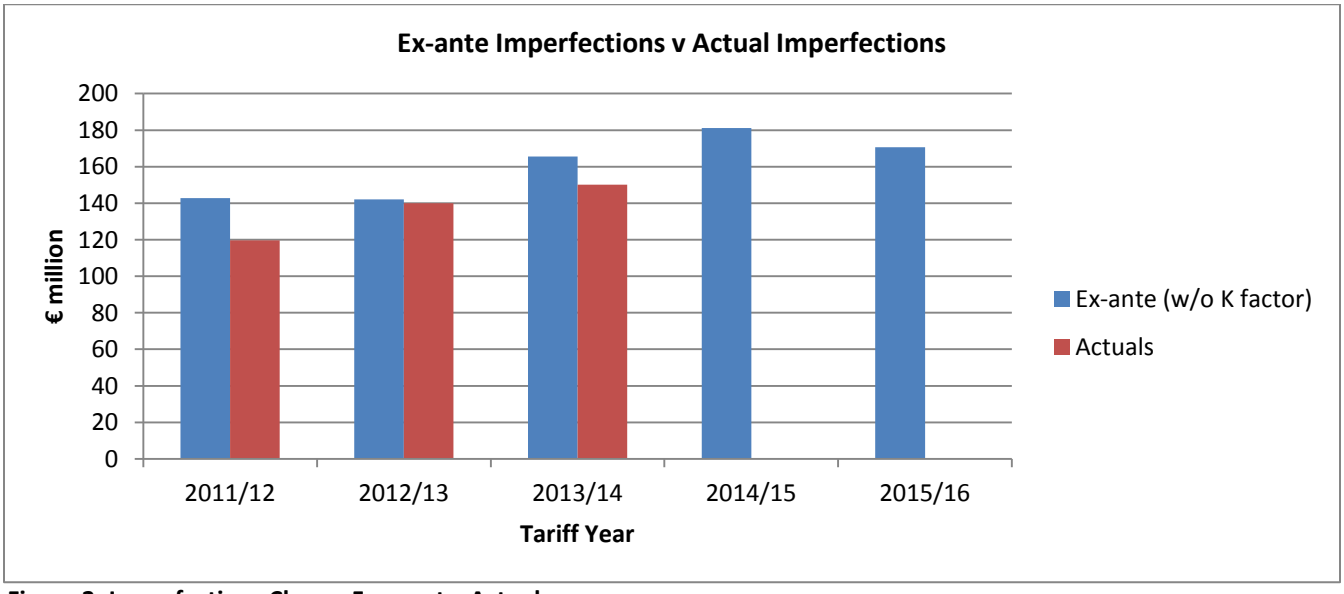

Figure 2: Imperfections Charge Forecast v Actual

[7] Gas Transportation Capacity Charges are due to be introduced in Northern Ireland from October 2015

Detail on the forecasts for each of the Imperfections Charge components is provided below and further information regarding the 2015/16 Forecast is provided by the TSOs in Appendix 1.

3.1 DISPATCH BALANCING COSTS

DBC refers to the sum of Constraint Payments, Uninstructed Imbalance Payments and Generator Testing Charges. DBC makes up 96% of the Imperfections Charge in the 2015/16 Forecast.

A forecast of zero is included for Uninstructed Imbalances as it is assumed that the Constraint Costs of Uninstructed Imbalances will, on average, be recovered by the Uninstructed Imbalance payments for the forecast period.

A zero forecast has been included for Testing Charges, as it is assumed that any testing generator unit will pay Testing Charges to offset the additional Constraint Costs that will arise from out-of-merit running of other generators on the system as a result of the testing.

A forecast of €163.5 million is included for Constraint Costs, representing a decrease of 8% from the 2014/15 forecast of €177.6 million. DBC is made up entirely of Constraint Costs in this submission, as is the case in most years. A summary of the assumptions around Constraints within the 2015/16 Forecast is attached as Appendix 3 to this consultation paper.

3.2 ENERGY IMBALANCES

A forecast of zero is included as it is assumed that if Energy Imbalances do occur that they will have an equal and opposite effect on Constraint Costs and will offset any increase or decrease accordingly.

3.3 MAKE WHOLE PAYMENTS

The forecast for Make Whole Payments is based on the TSOs' experience of actual outturn from 1st October 2014 to 30th April 2015 and as a result the TSOs have proposed a provision of €7.2 million.

3.4 OTHER SYSTEM CHARGES

Other System Charges aim to improve the performance of generators to ensure efficient use of the transmission system. Such charges relate to generator trips, Short Notice Declarations (SNDs) and generator performance incentives.

Other System Charges are predominantly event based charges and as such are not modelled as part of the TSOs' 2015/16 Forecast. If a generator unit trips or its availability is re-declared down at short notice the generator participant is required to pay charges to compensate for not supplying the necessary services to the system. Such events would result in an increase to DBC over and above that forecast by the TSOs. The TSOs assert that the revenue generated from Other System Charges is netted off DBC and offsets the immediate, short-term costs that arise as a result of these events. As such the TSOs have a provision of zero for Other System Charges in the 2015/16 Forecast, in line with previous submissions.

3.5 RECOVERY OF IMPERFECTION COSTS

DBC is estimated ex-ante and this estimate is recovered during the relevant tariff period through the Imperfections Charge.

Differences between the estimated costs being recovered and the amounts paid out will lead to instances where SEMO will:

- Require working capital to fund Constraint Costs that exceed revenue collected through the Imperfections Charge, or,
- Have collected revenue through the Imperfections Charge that exceeds the amount being paid out on Constraint Costs.

To allow for the first scenario, SEMO may require funding from EirGrid Group to cover fluctuations during the tariff period. Any allowed under-recovery of revenue during the tariff period will be paid to SEMO in the subsequent tariff period(s) with the appropriate amount of interest. This reflects the cost of short-term financing required to meet SEMO's working capital needs.

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

The K factor mechanism is used to adjust the Imperfections Charge to reflect the difference between the forecast and actual outturn. The K factor expected to be applied to the Imperfections Charge for 2015 /16 is (€22.12m). This comprises of:

Summary of K factor adjustment

Over-recovery in tariff year 2013/14	(€17.1m)
Estimated over-recovery for tariff year 2014/15	(€5.0m)
Total Imperfections K factor to be applied in 2015/16	(€22.1m)

This €22.1m over-recovery is netted off the 2015/16 Forecast Imperfections Charge leading to a reduction in the Imperfections tariff for the 2015/16 tariff year.

3.6 DEMAND FORECAST

The TSOs have provided a forecast demand for the 2015/16 tariff year of 33,230 GWh, representing only a minor deviation (-0.3%) from the 2014/15 forecast demand of 33,320 GWh.

3.7 IMPERFECTIONS CHARGE

DBC of €163.5 million is adjusted for Make Whole Payments of €7.2 million and a K factor adjustment of (€22.1m), to give a forecast Imperfections Charge of €148.6 million. The Imperfections Charge per MWh for the 2015/16 tariff year is based on this forecast with any actual under or over-recoveries being fed into subsequent tariff period(s) via the K factor.

The resulting Imperfections Charge of €4.47 per MWh is derived by dividing the forecast Imperfections Charge by the forecast demand (provided by the TSOs). The comparable figure for the 2014/15 tariff year stood at €5.60 per MWh.

The trend in the Imperfections Charge is summarised in Table 2 overleaf:

	2015-2016 €m	2014-2015 €m	2013-2014 €m	2012-2013 €m	2011-2012 €m
Total Constraints costs	163.5	177.6	165.5	142.0	142.6
Uninstructed Imbalances	-	-	-	-	-
Testing Charges	-	-	-	-	-
Dispatch Balancing Costs	163.5	177.6	165.5	142.0	142.6
Energy Imbalance	-	-		-	-
Make whole payments	7.2	3.6	0.1	0.1	0.1
K factor Adjustment	(22.1)	5.2	(18.9)	12.8	42.5
Other System Charges	-	-	-	-	-
Total Imperfections Charge	**148.6**	**186.4**	**146.7**	**154.9**	**185.2**
Forecast Demand (MWh)	33,230,000	33,320,000	33,220,000	32,900,000	34,030,000
Imperfections Charge Per MWh	**4.47**	**5.60**	**4.42**	**4.71**	**5.44**

Table 2: Imperfections Charge over the years

4 INCENTIVE OUTTURN REVIEW FOR 2013/14

DBC are a significant cost passed on to the all-island consumer every tariff year and represent the majority of the Imperfections Charge. DBC account for between 95-100% of the Imperfections Charge in each tariff year. In light of this, an all-island DBC incentive mechanism was introduced by the SEMC with effect from 1 October 2012[8]. The current parameters as detailed in the Decision Paper are presented in Table 3 below:

€m's	Lower Bound	Dead Band	Upper Bound	Below Target	Above Target
Dispatch Balancing Costs	7.5% - 20% below baseline	7.5% below and above the baseline	7.5% - 20% above baseline	TSOs retain 10% of every 2.5% below	TSOs penalised 5% of every 2.5% above

Table 3: DBC incentive parameters

The cost categories included in the incentive baseline are derived from the Decision Paper and listed in Table 4 below:

INCLUDED	NOT INCLUDED
Constraint Costs Uninstructed Imbalances Testing Charges Energy Imbalances Other System Charges SO-SO Trades	Make Whole Payments Capacity Imbalances Other Imperfection Charge Components

Table 4: Cost categories included in the DBC incentivisation mechanism

The 2013/14 tariff year is the second year to fall within the incentive mechanism and the first year where an incentive payment is potentially due. EirGrid and SONI's assessment of the incentive outcome due for the 2013/14 tariff year is attached as Appendix 2 to this paper[9]. The TSOs' assessment provides for outturn Imperfections Costs of €150.1 million; €52.4 million lower than the ex-post adjusted Imperfections Charge. The TSOs are claiming an incentive payment of €2.5 million. The resultant incentive payment would be applied on a 75:25 split between Ireland's Transmission Use of System (TUoS) and Northern Ireland's System Support Services (SSS) revenues respectively. Further information on the 2013/14 Incentive Outturn is contained within Appendix 2 to this consultation paper.

[8] SEM-12-033 Incentivisation of All-Island Dispatch Balancing Costs Decision Paper, dated 5 June 2012
[9] Appendix 2 - Imperfections Costs Incentive for Tariff Year 1st October 2013 – 30 September 2014, dated 3rd June 2015

4.1 EX-POST REVIEW FACTORS

The TSOs submitted the 'Forecast Imperfections Revenue Requirement for Tariff Year 1st October 2013 to 30th September 2014' (ex-ante DBC forecast) in April 2013. This submission forecast DBC for the 2013/14 tariff year at €165.5 million. The 2013/14 Incentive Outturn paper contains the TSOs' ex-post adjustments to this €165.5 million baseline, to form the ex-post adjusted baseline of €202.5 million. Based on the allowable ex-post review factors in the Decision Paper the TSOs included the following adjustments to the ex-ante DBC forecast:

- Correction for errors in the ex-ante DBC model configuration.
- Actual demand, actual exchange rates, actual Commercial Offer Data including Modified Interconnector Unit Nominations and actual wind.
- High Impact Low Probability (HILP) events.

Table 5 below displays the components of the €37 million net movement from the ex-ante DBC baseline to arrive at the ex-post adjusted DBC baseline of €202.5 million.

Adjustments		**€m**
	DBC ex-ante baseline	**165.5**
Forecast Model Errors	NI Minimum No of Units Constraint	(13.1)
Forecast Model Errors	Dublin Trans Constraint (3 night/2 day)	33.5
Forecast Model Errors	Generation Offtake at Start	(1.8)
Combination demand, wind, COD & MIUNs	GTC, gas prices, MIUNs	31.6
High Impact Low Probability events		(13.6)
Supplementary Model adjustments		0.4
	DBC ex-post baseline	**202.5**
	Actual Outturn	150.1
	TSO saving	52.4

Table 5: DBC ex-post adjustments

4.2 MODEL AMENDMENTS

The RAs note that the ex-post adjustments include corrections for the effect of errors in the original ex-ante model, with error amendments accounting for a net increase of €18.6 million to the ex-ante DBC baseline. It is important to note that the incentive amount is based on the outturn Imperfections Charge relative to the ex-post adjusted forecast, in which the above errors have been corrected. Nevertheless, the RAs are keen to ensure accurate ex-ante forecasting as this forecast feeds directly into tariffs.

The Decision Paper is silent on the issue of errors but makes it clear that the ex-post adjustment process is designed to capture "any external factors" outside of the TSOs' control. While the RAs would classify errors as being within the TSOs' control, they are also conscious of the need to encourage openness in identifying and reporting model errors, including those that would cause a downward movement in the ex-post adjusted DBC baseline. The RAs note that the 'Imperfections Costs Incentive for Tariff Year 1st October 2012 to 30th September 2013' contained errors that when corrected for removed the TSOs' claim to an incentive payment. Consequently the RAs are keen to ensure equal treatment of errors under both scenarios. To that end, the RAs are minded to endorse the inclusion of corrections for model errors for the 2013/14 Incentive Outturn. Furthermore, the RAs have conducted analysis to show that even if the correction for model errors was not permitted in the 2013/14 Incentive Outturn the TSOs would still be entitled to 91% of the proposed €2.5m incentive payment.

In order to ensure errors are minimised in the future, the RAs may consider introducing a penalty mechanism on any material errors within the forecast, via amendment to the Decision Paper. The RAs have communicated this position to the TSOs.

4.3 COMBINATION OF DEMAND, WIND AND COD & MIUNS

The RAs questioned the inclusion of both Modified Interconnector Unit Nominations (MIUNs) and Commercial Offer Data (COD) as neither is listed as an ex-post review factor in the Decision Paper, rather fuel prices (inc. bids) is referred to. The TSOs response outlined that when they use the phrase Commercial Offer Data (COD) the TSOs are in fact referring to the bids. Furthermore the TSOs argue that 'in the case of interconnectors, MIUNs are the interconnector unit (trader) bids and so should be included in the overall bids assessment. Actual MIUNs are essential in calculating the production costs of the model along with other generator bids.'

The RAs are minded to agree with the TSOs' interpretation of COD in this instance.

4.4 HILPS

HILP events are rare transmission, generation or interconnector outages that lead to significant increases in constraint costs. Due to their nature these events are difficult to model within the TSOs' forecast Imperfections Charge. Table 7 in Appendix 2 details each of the HILPs and combination of HILPs which were assessed in the TSOs' ex-post review. The TSOs analysed the actual transmission outages and related outages were then grouped into HILP events. The net impact of the HILPs amounted to a €13.6 million or 7% reduction to the ex-ante DBC baseline.

Table 6 of the Decision Paper outlines the level of effect on DBC required for a HILP to qualify as an ex-post adjustment factor as, '5% of DBC baseline or €5m per event.' The RAs feel the intent in the table is that each HILP be assessed individually for exceedence of either 5% or €5m in order to be included in the ex-post review. The TSOs have interpreted the Decision Paper as allowing the impact of HILPs to be grouped to meet the threshold.

The RAs accept that there is a lack of clarity over the definition of a HILP in the Decision Paper. Table 6 of the Paper includes the description, 'including single and multiple HILP events', and footnote 22 groups 3 units together in an example. The RAs may seek to clarify this definition in the future but are minded to follow the TSOs' interpretation in this instance.

4.5 TSO EFFICIENCY GAINS

The TSOs assert that the €52.4 million saving to the ex-post adjusted Imperfections Charge was achieved largely through the following:

- The introduction of countertrading on EWIC for reserve co-optimisation in early March 2014; and
- The number of units in the Dublin operational Constraint for voltage support was reduced from three by night/two by day to two (plus EWIC) at all times.

Based on the parameters laid out in the Decision Paper the TSOs are entitled to an incentive payment of 10% for every 2.5% the outturn DBC falls below the ex-post adjusted DBC baseline. This is capped at 20% below the baseline meaning the TSOs potentially qualify for an incentive payment of €2.5 million[10] administered across both TSOs on a 75:25 split basis.

The RAs are minded to endorse the €2.5 million incentive payment based on these newly implemented initiatives.

[10] Appendix 2 – Table 10

5 SUMMARY OF INCENTIVISATION FOR 2015/16

For tariff year 2015-16 the reward/penalty will be determined following completion of the 2015-16 ex-post review due in Quarter 1 2017.

The 2015/16 Forecast does not include a provision for revenue received from reserve co-optimisation. Countertrading for reserve co-optimisation was implemented half way through the 2013/14 tariff year and led to a saving of approximately €20 million against DBC in this 6 month period. Given the high incidence of countertrading for reserve co-optimisation in 2013/14 and 2014/15 (est. saving of €21m) the RAs are assessing whether a provision of zero is the best estimate for the 2015/16 tariff year. Lower interconnector imports during the day are forecast for the 2015/16 tariff year, potentially meaning that EWIC and Moyle will generally not be the Largest Single Infeed (LSI), and consequently the TSOs argue that countertrading for reserve co-optimisation is not applicable in the model.

The TSOs concede that there may be times during the 2015/16 tariff year whereby EWIC or Moyle are the LSI and the TSO scheduling tool may utilise countertrading to minimise the constrained production cost to the consumer.

It should be noted that no further incentive will be paid based on SO countertrading for reserve co-optimisation, which was introduced in March 2014. The incentive mechanism introduced by the RAs is an annual one and applies only to the year in which it occurs with the baseline being appropriately adjusted for the following tariff year. The annual challenge for TSOs is to achieve additional efficiencies in each year so as to benefit from the incentive mechanism.

While we view this approach as being consistent with the purpose of the incentive, as detailed in the Decision Paper, we would welcome views from respondents as to whether a longer window of opportunity would provide a better framework for incentivisation and rewarding of innovation.

6 TSOS REPORTING AND TRANSPARENCY MEASURES

In order to increase transparency around DBC, the SEMC has introduced reporting requirements on the TSOs. The TSOs now provide quarterly updates on the levels of Constraint Costs, drivers behind Constraint Costs, mitigating measures being taken and other information or commentary that the TSOs believe will aid transparency in this area.

These Quarterly Imperfections Costs Reports are available on EirGrid's and SONI's websites. The most recent report relates to the period January to March 2015[11] and includes a Year-to-Date section.

7 PROVISION OF COMMENTS

The RAs request comments on the proposals set out in this consultation paper. All comments received will be published, unless the author specifically requests otherwise. Accordingly, respondents should submit any sections that they do not wish to be published in an appendix that is clearly marked "confidential".

Comments on this paper should be forwarded, in electronic form, to Bronagh Smyth at Bronagh.Smyth@uregni.gov.uk by 17:00 on Wednesday 15 July 2015.

[11] SONI Ltd - Publications