SEMO Price Control

Final Determination Paper

SEM-18-003

13 February 2018

Contents

1 Background and Overview of Price Control

1.1 Overview

This Final Determination paper sets out the SEM Committee's (SEMC) Decision on the relevant level of funding required for SEMO in I-SEM, following the Draft Determination SEM-17-075.

On May 23rd 2018, the I-SEM SEMO will become active. SEMO in I-SEM will have a new range of roles and responsibilities which differ from SEM SEMO, and as such will require a revenue allowance that allows it to fulfil its functions. This price control will run from May 2018 to end September 2021, a period of nearly 3 and a half years.

This price control and the allowed revenues and FTEs reflect the changes in SEMO's roles and responsibilities in I-SEM versus SEM. The SEM Committee Decision Paper 'I-SEM Roles and Responsibilities Decision Paper SEM-15-077' identified two roles to be carried out by SEMO in I-SEM in addition to its role as Balancing Market Operator namely;

- Imbalance Settlement and;
- Capacity Settlement

SEMO will continue to carry out the administration and maintenance of the Single Electricity Market Trading and Settlement Code as required by licence and as amended and developed for the I-SEM.

A total of three responses to the Draft Determination were received which are outlined in this paper. Respondents were;

- Viridian
- Bord Gáis
- SEMO

These responses have been published alongside this paper. SEMO has also submitted two papers to the SEMC along with its response to the Draft Determination, marked as confidential, including a report from KPMG entitled 'Financeability of SEMO under 2018-2021 price control' and a report summarising legal advice commissioned by SEMO with regard to this price control.

1.2 I-SEM SEMO Costs

The 'Decision Paper on the revenue recovery principles for SEMO and the designated NEMO (SEMOpx) from I-SEM go-live' published on 05 July 2017 (SEM-17-044) decided that implementation costs associated with setting up SEMO for I-SEM would be recovered via the TSOs RABs at an agreed proportion of 75% to EirGrid and 25% to SONI. Each amount will attract the prevailing WACC of the TSOs and will be recovered through EirGrid TUoS and SONI SSS tariffs respectively. Recovery through TUoS tariffs in Ireland will be through the supplier TUoS charge.

As such, the implementation costs do not form part of this revenue control but an overview of the full components of the costs related to SEMO, including the costs considered in this Final Determination is presented here for information. As part of the establishment of I-SEM SEMO a number of costs have and will be incurred including;

1. The costs of establishing the systems and processes for SEMO for the I-SEM (implementation costs). EirGrid and SONI have separately submitted resource costs, capital costs, project

costs and market coupling costs associated with overall I-SEM implementation. This includes costs associated with establishing the SEMO for I-SEM as well as the costs associated with the TSO's development of the new market.

2. Operational resources and costs that will be incurred in the pre-Go Live period reflecting the trialling and testing of the new systems which will therefore be capitalised and recovered from TUoS/SSS tariffs. This amounts to an estimated 80% of these pre go-live operational costs, as per international accounting standards (IAS 16), with the remaining 20% of costs related to SEMO's operation of the market included in this Final Determination.

3. The ongoing day to day costs of running the SEMO (OPEX) post Go-Live and any additional CAPEX that will be required for the duration of the price control, which is also the subject of this Final Determination.

4. SEMO financeability is considered under two headings – the Parent Company Guarantee of EirGrid to SONI through the SONI MO licence and a margin on SEMO revenue collection activities. Additional contingent capital requirements and costs arising from the new market also arise and these have been referenced in this price control.

The cost components are outlined in the table below;

Cost Component	Description
I-SEM Implementation costs	These are the project costs for I-SEM, which will be recovered via the TSO's RABs at an agreed proportion of 75% to EirGrid and 25% to SONI. The costs of establishing systems for SEMO are included within the I-SEM Implementation costs.
Opex and Capex	These are the subject of this SEMO price control.
Financing Parent Company Guarantee	There is a requirement for EirGrid to put in place a Parent Company Guarantee (PCG) in place in the SONI Market Operator licence. As part of the 2016-19 price control the SEM Committee determined an allowance of €0.300 million per annum as being appropriate remuneration for SEMO to facilitate their licence requirements in this regard. SEMO has requested the same amount for this Price Control in respect of the PCG.
Financing Collection Agent Margin	SEMO will carry out revenue collection functions on behalf of the I-SEM covering the Capacity Mechanism, capacity socialisation fund and residual error, which will attract a margin.
Financing Contingent Capital	The RAs are separately reviewing the requirements for contingent capital in I-SEM as compared to the existing facility in SEM. This facility will be raised by EirGrid Plc and SONI Ltd and discussions with respect to this are currently ongoing.

Table 1.1, Overview of SEMO cost components

2 Summary of price control

Currently, SEMO is responsible for administering the SEM and exists as a cross jurisdictional joint venture between EirGrid Plc and SONI Ltd, the Transmission System Operator (TSOs) in ROI and NI respectively.

Consistent with previous SEMO price controls, this price control is provided on a combined basis between EirGrid and SONI on a 75% to 25% basis respectively, with revenues being ascribed to EirGrid in its capacity as market operator for Ireland and to SONI in its capacity as market operator for Northern Ireland. This is based on comparative levels of energy consumption in the Republic of Ireland and Northern Ireland. This current apportionment is also detailed in the Market Operator Agreement between EirGrid and SONI.

An outline of the components of SEMO's revenues considered in this price control and the SEM Committee's decision with respect to each is outlined below:

Pre-Go Live Capex

Pre-Go-Live costs represent a proportion of staff and staff related costs for I-SEM readiness which are being incurred by SEMO prior to this price control period. These costs reflect staff that are necessary to be in place prior to I-SEM Go-Live. They do not form part of the I-SEM implementation costs described in section 1.2, which will be capitalised. 20% of pre go-live operating costs related to SEMO will be recovered through the SEMO price control as Opex. They represent a reasonable level of costs that are to be treated as "operational" under applicable International Accounting Standards (IAS 16). The activities included for Pre-Go Live costs include;

- The establishment of an operational team a number of months in advance of the market go-live date of May 2018; and
- IT costs (licences, support etc.) required during Market Trials.

Each category of Pre-Go Live costs is considered separately according to each of the following sections of this paper.

SEMO Revenues

As the implementation costs of SEMO (which includes the 80% of operational resource introduced pre go-live which, by its nature can be capitalised) are being recovered via the TSO's RABs, the focus of this Final Determination is on the ongoing Operating Costs (Opex) of SEMO and any Capital Expenditure (Capex) that SEMO has included in its submission to the SEMC related to the price control period. This also includes the estimated 20% of the Pre-Go Live operational staff and costs related to SEMO that cannot be capitalised as part of the implementation project.

In addition, to incentivise SEMO in its operations the SEMC has decided in principle on a range of efficiency incentive mechanisms to be put in place to ensure that SEMO is delivering best value for customers. Current SEMC thinking on KPIs are set out in this paper in terms of their principles, definitions, incentive amount and buffers to apply to certain indicators in the first few months of I-SEM.

SEMO's revenues will be recovered via a range of SEMO charges which include Market Operator charges. In addition, as SEMO will also provide the Agent of Last Resort (AOLR) function, the AOLR function fees will be charged separately from the Market Operator charges. In the Aggregator of Last Resort Decision paper (SEM-15-063), the socialisation of fees associated with the AOLR for market participants availing of the service was discussed. The AOLR fee and the methodology through which it will be aligned to SEMO's overall revenue allowance is further discussed in this paper.

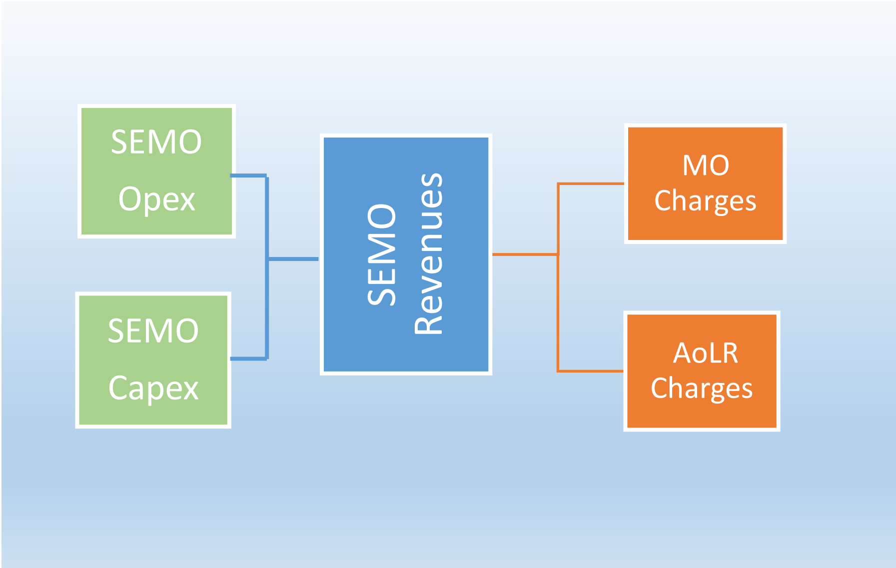

Figure 2.1 SEMO Revenues Summary

Operating Expenditure (OPEX)

In the 'Decision Paper on the revenue recovery principles for SEMO and the designated NEMO (SEMOpx) from I-SEM go-live' (SEM-17-44), the SEMC concluded that SEMO's Operating Expenditure would be subject to Revenue Cap regulation (RPI-X). This is consistent with previous price controls, where an efficiency factor of 0.3 has been applied. In the 2016-2019 price control the SEMC applied RPI-0.3[1] to SEMO's price control allowance and this will be continued for this price control.

Capital Expenditure (CAPEX)

In SEM-17-44 SEMC decided that the capitalised costs associated with I-SEM SEMO implementation would be recovered via the TSOs RABS, including the applicable Weighted Average Cost of Capital (WACC).

Any Capital Expenditure expected to arise during this Price Control will continue to apply rate of return regulation, whereby it will be placed on SEMO's RAB and attract a blended WACC (based on the specified proportions between EirGrid and SONI).

SEMO requested an allowance of €400,000 per annum for unpredictable Capex. The SEMC has decided to allow an underlying but unpredictable level of Capex allowance (for replacement servers and additional software licenses etc.) on an ex-ante basis up to a certain threshold for each year of the price control. In addition, there may be other predictable Capex projects related to enduring I-SEM requirements and market changes. These projects will be assessed as they arise.

Application of Management Fee

As part of the consultation on the Revenue Recovery Principles to apply to SEMO and SEMOpx (SEM-17-044), the SEMC considered the merits of the RAB WACC approach vs. a margin approach which

[1] This incentivises SEMO to make efficiencies over and above inflation.

has been proposed by SEMO. In the Draft Determination SEMC was of the view that the RAB WACC approach to SEMO is robust and quantifiable and that a margin should not be applied to SEMO.

However, following on from the Draft Determination paper, SEMO provided a further submission outlining a number of risks it faces and outlining its justification for a margin on collection agent revenues rather than on total controllable Opex. This aspect of SEMO's financeability is discussed further in this paper, taking in account consideration of the SONI TSO and EirGrid TSO price controls.

Key Performance Indicators (KPIs) and incentives

The SEMC is of the view that it will be important to continue to provide SEMO with appropriate incentives in relation to performance levels in this price control. As the roles and responsibilities of SEMO will change in I-SEM a review of the incentives to be placed on SEMO was carried out.

The draft determination paper concerned the number of KPIs to apply, the assumptions around these KPIs, their definitions, incentive pot and any bedding in period to apply. It did not set out a view on the weightings of the various KPIs nor on the precise metrics that would apply to each KPI, against which actual performance would be measured.

The SEMC is of the view that further consideration is required in relation to these aspects of the KPIs and in order to determine their specific scope, given the increased number of systems that are required to be available on a 24 hours basis and the particular timeframes within which an increased volume of data should be published. The SEMC has therefore decided to defer decision on the scope and precise parameters of the KPIs applicable to SEMO and will carry out further engagement with SEMO and with industry before a final decision on these is taken.

Duration

The duration of this price control will be 3 years and 4 months, from May 2018 to end September 2021. The current 2016-2019 price control has been extended on a pro-rata basis to take account of the revised Go-Live date for I-SEM. The total revenue allowances will be recovered concurrently meaning that as one operator becomes active (I-SEM SEMO) the other will decommission (SEM SEMO). This will require a combination of active revenues and decommissioning revenues.

The resettlement and decommissioning revenues for SEMO have previously been determined as part of the annual tariff setting process for 2017/18. From the 23rd May 2018, the I-SEM SEMO tariffs and decommissioning revenues for SEM SEMO will be combined into one tariff.

Indexation

Market Operator tariffs will be adjusted for out-turn inflation each year and any further adjustment will be recognised in the k-factor adjustment mechanism. All costs as part of this submission are based on March 2017 prices. The SEMC has decided that the indexation rate applicable to the current price control is a blended rate of the Consumer Price Index[2], in ROI (75%) and the Retail Price Index[3], in NI (25%).

[2] Based on publication by the Central Statistics Office, Ireland
[3] Based on publication by the Office for National Statistics, UK

2.1 Revenue Proposals Summary

Draft determination Proposal

A summary of SEMO's revenue submission and the SEMC's draft proposals for this price control as presented in SEM-17-075 are set out below.

Cost driver	SEMO's Submission € million	SEMC Draft Determination Proposal €million
Total Payroll	17.178	15.023
Total IT & Communications	8.469	8.469
Overheads **-Facilities** **-Recruitment, HR & Administration** **-Corporate Costs**	6.749	4.196
Finance & Regulation	1.941	1.784
Total Opex	**34.337**	**29.472**
Management Fee (Margin)	**3.371**	**0**
Parent Company Guarantee & Contingent Equity	4	Pending
CAPEX Submission	1.200	0.800
Total (Opex & Capex, excluding depreciation)	**42.908**	**30.272**

Table 2.1 SEMO Submission and Draft Determination Proposal

The proposed reductions in the Draft Determination included the following areas;

- A reduction in payroll costs.
- A reduction in the overhead allocation to SEMO, to align with the allowed costs within the enduring price controls for the TSOs, EirGrid and SONI.
- A reduction in the allowance for finance and regulation.
- A removal of SEMO's proposed management fee, primarily on the basis that a return attributable to SEMO establishment costs will be garnered via the TSOs' RABs at the respective prevailing WACCs of EirGrid and SONI. At the time of the Draft Determination, SEMO had not demonstrated that, in principle, the application of the RAB WACC approach is not appropriate and had not justified the level of margin proposed in terms of risks faced by SEMO. SEMO capitalised implementation costs are being rewarded on the TSO's RAB and subsequent capitalised expenditure will be rewarded on a SEMO RAB.
- In the area of Parent Company Guarantee (PCG) and contingent equity, at the time of the Draft Determination this aspect was being considered alongside a separate analysis addressing the additional contingent capital requirements of the TSOs in their role as market operators. This work has not concluded.

Final Determination Decision

Responses to the proposals outlined in SEM-17-075 are outlined in detail in this paper, however an overview of the SEM Committee's Final Determination in terms of allowed revenues is presented below. This represents a reduction of 12% of SEMO's revenue submission, excluding capex. The changes outlined below are based on revisions in the following areas;

- As per the updated analysis submitted by SEMO, taking account of the differences in how corporate overheads and corporate services are allocated between the TSO, MO and SEMOpx price controls, overheads amounting to €22,460 per FTE per annum were demonstrated and justified for enduring TSO price controls (on a blended 75 to 25 basis) versus €23,092 per FTE per annum for the SEMO price control. SEMC has decided to align an allowed level of overheads with the enduring TSO price controls, a reduction of €632 per FTE per annum.
- A revision of allowed FTE costs reflecting new information obtained via the SEMO price control discussions and represents a comparable average cost of €80,300 per FTE based upon historic costs of SEMO inflated using appropriate wage indices.
- There has been no change to the proposed reduction in Finance and Regulation costs
- An allowance of €300,000 for the SONI MO Parent Company Guarantee has been included.
- As discussed in the financeability section of this paper, a 0.25% margin on collection agent revenues has been allowed.

Cost driver	SEMO's Submission € million	SEMC Decision €million
Total Payroll	17.178	15.944
Total IT & Communications	8.469	8.469
Overheads **-Facilities** **-Recruitment, HR & Administration** **-Corporate Costs**	6.749	6.623
Finance & Regulation	1.941	1.784
Total Opex	**34.337**	**32.82**
Management Fee (Margin)	**3.371**	**3.032**
Parent Company Guarantee & Contingent Equity	4.000	1.000
CAPEX Submission	1.200	0.800
Total (Opex & Capex, excluding depreciation)	**42.908**	**37.652**

Table 2.2 SEMO Submission and Final Determination Decision

3 Introduction

3.1 I-SEM compared to SEM

This price control will cover the new I-SEM. With the introduction of differing functions in the I-SEM, the functions of SEMO will also change. As there will be a change in the responsibilities of SEMO the resourcing requirements as set out in this Price Control for the functions carried out by SEMO will inevitably also change.

Below sets out some of the features of the previous market in comparison to the new market.

Features of Current Market	Features of New Market
Single Market for energy trading	Multiple markets for energy trading
Gross pool auction	Price formation varies by market timeframe
Single sided auctions	Double sided auctions
Mandatory participation	Voluntary/Mandatory participation
Trading Day 06:00-06:00	Trading day 23:00-23:00
Ex-post pricing	Pricing varies by market timeframe
Single system marginal price	Multiple prices in different markets
Constraints settle the difference between scheduled and dispatched	Constraint payments continue

Table 3.1 Comparison of SEM and I-SEM

3.2 Role of SEMO

The development of the SEM has led to the requirement for a Single Electricity Market Operator (SEMO), to administer the market. SEMO exists as a contractual joint venture between the system operator in the Republic of Ireland (EirGrid) and the system operator for Northern Ireland (SONI) and is not a separate legal entity in its own right.

SEMO's role in the market is explicitly defined in the SEM Trading and Settlement Code (TSC), which sets out the rules, procedures and terms and conditions, which all parties, including SEMO, must adhere to. Additionally, both EirGrid and SONI must comply with the conditions imposed on this activity by their respective Market Operator (MO) Licences.

The roles and responsibilities of I-SEM SEMO are set out in a number of decision papers, the Trading & Settlement Code and in the Market Operator (MO) licences granted to EirGrid and SONI.

Imbalance and Capacity Settlement

The I-SEM Roles and Responsibilities Decision Paper SEM-15-077 sets out some responsibilities of SEMO in I-SEM. This decision paper stated that SEMO should be responsible imbalance settlement in the I-SEM. In addition, this paper set out that the role of capacity market settlement would be carried out by SEMO given that there are synergies between the two functions in terms of payments to generators and levying of charges on suppliers for capacity and energy imbalances.

In addition, under the licences granted to the Market Operator (MO) SEMO is responsible for entering into and at all times administering the Single Electricity Market Trading and Settlement Code. The details of the areas which SEMO is responsible for under the Trading and Settlement Code are outlined below.

Chapter B	Governance of the Trading & Settlement Code Management of modifications to the TSC Management of Disputes Queries Registration Deregistration Suspension & termination
Chapter C, D & Appendix G of TSC and Capacity Market Code	Publication of data REMIT obligations
Chapter E	Calculation of Imbalance Prices
Chapter F	Balancing Market & Capacity Market Settlement Imbalance Settlement
Chapter G	Credit & collateral calculation Administration of settlement Reallocation

Table 3.2 SEMO responsibilities under the Trading and Settlement Code

In addition to the above roles and responsibilities as outlined in the TSC and Capacity there are other functions which SEMO will undertake. These include;

1. Fuel Mix disclosure which is a requirement in Ireland and Northern Ireland.
2. AOLR function

Fuel Mix Disclosure (FMD)

The CRU and UR publish respective annual reports on the fuel mix suppliers in the Single Electricity Market. It is the role of the Single Electricity Market Operator (SEMO) to administer and calculate the fuel mix figures from the information provided by electricity suppliers. The calculation covers the jurisdictions of Ireland and Northern Ireland and is performed by SEMO on behalf of the Regulatory Authorities.

The fuel mix of suppliers and associated environmental impact information (emissions) is calculated for the period from January to December by SEMO in accordance with the SEM Committee's decisions. This calculation is completed at the end of the second quarter of each year.

Suppliers are obligated to reproduce the most recent applicable FMD data on their bills and promotional materials. Additionally, CO_2 and radioactive waste emissions data is calculated and must be published along with the Fuel Mix information on bills and promotional materials.

AOLR

With the introduction of I-SEM, Participants will have the opportunity to trade in multiple timeframes. Participants will have the option to buy and sell energy in the day-ahead market and the intraday market, with dispatchable generators including demand side units having bids or offers accepted in the balancing market based on commercial offers for deviations from their physical notifications as provided to the System Operators (SOs).

The SEM Committee decision on the High Level Design provided for an entity, the Agent of Last Resort (AOLR), to act on behalf of generator units where it was considered that interaction with the ex-ante markets through preparation and submission of orders would present a barrier to their participation in these markets. The role of the AOLR is to act as a bidding agent in the ex-ante markets on behalf of eligible generators. SEMO is obligated under its respective licences to undertake this activity and the charging mechanism for the AoLR is set out in this Final Determination paper. AoLR fees will be published with SEMO's statement of charges for the first tariff year of this price control.

Other roles

SEMO will also play a role in market modelling and monitoring of the market and has a number of specific obligations and responsibilities under REMIT. The RAs will discuss this role further with SEMO.

4 Operational Expenditure (OPEX)

4.1 Operational expenditure cost assumptions

The SEMC's working assumptions for this price control are outlined below;

- **Exchange rates passed through:** This is consistent with the design decisions for the I-SEM; noting this only applies to exchange rate effects directly related to managing the dual currency element of offers and bids to I-SEM markets. SEMO's own costs will be dealt with through the tariff setting process in line with the current arrangements under SEM.

- **Only I-SEM operational costs and incremental Capex:** This is in line with the approach to the SEMOpx Price Control and overall I-SEM implementation costs.

- **Incentives**: The SEMC is of the view that incentives should be realised over 3 rather than 5 years. This will limit the exposure of SEMO and the consumer.

- **Pre-Go-Live costs:** Pre-Go-Live costs related to SEMO (and to SEMOpx) that are operational costs will be recovered through the SEMO (and SEMOpx) Price Controls. These costs are set out separately in each section of this paper.

4.2 Summary of SEMO's Opex proposals

As part of its initial data provision, SEMO submitted Operating Costs across the various cost drivers of the business. SEMO have requested a total of €38.3 million of Opex for the 2018 - 2021 Price Control Period as set out below.

SEMO submission	**Pre Go-Live**	**May '18 to Sep '18**	**Oct '18 to Sep '19**	**Oct '19 to Sep '20**	**Oct '20 to Sep '21**	**Total**
2017 monies	€	€	€	€	€	**€**
Payroll	378,000	1,604,000	4,880,000	5,105,000	5,211,000	17,178,000
IT & Telecommunications	111,000	918,000	2,753,000	2,384,000	2,303,000	8,469,000
Facilities & property management	64,000	273,000	818,000	838,000	841,000	2,834,000
Recruitment, HR and Admin costs	21,000	109,000	326,000	344,000	337,000	1,137,000
Corporate Costs	54,000	268,000	805,000	824,000	827,000	2,778,000
Finance and Regulation costs[4]	0	206,000	620,000	570,000	545,000	1,941,000
PCG and Contingent Equity	0	400,000	1,200,000	1,200,000	1,200,000	4,000,000
Total	**628,000**	**3,778,000**	**11,402,000**	**11,265,000**	**11,264,000**	**38,337,000**

Table 4.1 SEMO Operating Costs Submission, including PCG and Contingent Equity

[4] In SEMO's original submission this included the Parent Company Guarantee and Contingent Equity submission the total of which over the Price Control is €4m (€1.2m per annum + 400,000 for the 4 months from May to September '18). This has been split out separately in this paper.

4.3 Payroll

SEMO Submission Summary

Labour costs represent the largest category of Opex for this Price Control, accounting for between 42% - 47% of costs for each period of the submission. SEMO has requested 57.25 I-SEM Full Time Equivalents (FTE)[5], rising to 59.5 FTEs from 2020/21 for this price control period. The small increase in resources over the period reflects the intention to replace external IT contractors with internal SEMO staff after the implementation of I-SEM. In the initial years of the price control internal IT resources will be engaged in I-SEM project related work.

Included within these directly incurred payroll costs are all staff costs including salaries, performance related payments, employer's PRSI/national insurance, employer's pension contribution, overtime, contract staff and other staff costs. The average cost per FTE over the price control period, as submitted by SEMO, is €85,000 in 2018/19, rising to €87,500 in 2020/21.

In addition, payroll costs incurred indirectly by other parts of EirGrid and SONI in fulfilling corporate roles are categorised as overheads and addressed in section 4.4.

Staff Costs (SEMO submission)						
€		**Sep-18**	**Sep-19**	**Sep-20**	**Sep-21**	**Total**
	Pre Go Live	**4Mths**	**12Mths**	**12Mths**	**12Mths**	
Salary	278,000	1,179,000	3,588,000	3,754,000	3,831,000	12,630,000
Social Security	32,000	135,000	409,000	427,000	437,000	1,440,000
Bonus	22,000	94,000	287,000	300,000	307,000	1,010,000
Pension	46,000	196,000	596,000	623,000	636,000	2,097,000
Total	**378,000**	**1,604,000**	**4,880,000**	**5,105,000**	**5,211,000**	**17,178,000**
Number of FTEs	22	57.2	57.2	59.2	59.5	
Average cost per FTE €'000	17.182[6]	28.140[7]	85.348	86.306	87.551	

Table 4.2 SEMO Staff Costs Submission

SEMC Draft Determination Proposal

In terms of the number and structure of FTEs, in the Draft Determination the SEMC was of the view that the proposed numbers of FTEs appeared to be reasonable, for a number of reasons;

- The number of FTEs does not vary significantly from the last year of comparable SEM data (2013/14) despite the increase in complexity I-SEM has introduced (58 FTEs in 2013/14).
- An overall favourable comparison of the activities, resources and costs incurred by SEMO in SEM, noting that a number of activities between SEM and I-SEM are not directly comparable. This is based on submissions from SEMO directly comparing each resource.

[5] FTE is not necessarily representative of one employee, as a number of employees time may be within the FTE.

[6] The average cost per FTE pre-go-live will not be reflective of an annual post as staff will have been employed for varying periods to meet the needs of the role.

[7] This reflects on a partial year's cost

- Benchmarking analysis conducted on a top down basis with other market operators in Europe, including Elexon, Xoserve and APCS[8]. The lack of comparability[9] and publicly available data limits the analysis to a small pool of market operators (MOs).

- Elexon[10] is the most comparable market operator of the 22 potential comparators reviewed and has comparable overall costs. In addition, each proposed FTE based on their function was reviewed with subject matter experts in the RAs.
- SEMO has demonstrated that it has undertaken a bottom-up assessment of the obligations resulting from SEM Committee (SEMC) decision papers and the Trading and Settlement Code (TSC). For resource line items, an explanation of how decision papers and the TSC translate into functions and processes, as well as high-level activities, has been provided.
- Functional level comparative analysis between the costs of similar functions (e.g. in SEM and I-SEM participant helpdesk FTEs) has been provided for differences between SEM and I-SEM as a whole.

In terms of the FTE costs for the price control period, SEMO proposed an average cost of €85,000 per employee in 2018/19, €86,000 per employee in 2019/20 and €87,000 per employee in 2020/21. This compares to an average figure of €76,000 per employee in 2013/14[11].The costs proposed by SEMO are based on average FTE (salary) costs that rise from previous price control periods by 11.6% in real-terms[12] and an annualised above inflation increase of 2.2%.

The average FTE cost increase within the price control may be attributed to Real Price Effects (RPE) which SEMO has applied. In SEM-17-018 the SEMC stated that as SEMO's Opex is relatively stable over the price control period, the scale of SEMO does not justify an RPE approach. It is the SEMC's view that consideration of RPE is more applicable to utilities were a major cost driver in the business may change independently from general headline inflation.

At the time of the Draft Determination, the SEMC did not have evidence to justify the increase in costs per employee from €76,000 in the 2013/14 SEMO price control to the proposed level of €85,000, and in the absence of additional evidence were minded to allow FTE costs of €76,000, in line with 2013/14.

Payroll						
2017 monies		**Sep-18**	**Sep-19**	**Sep-20**	**Sep-21**	**Total**
	Pre Go Live	**4Mths**	**12Mths**	**12Mths**	**12Mths**	
SEMO submission	378,000	1,604,000	4,880,000	5,105,000	5,211,000	17,178,000
Number of FTEs	22	57.25	57.25	59.25	59.5	
SEMC proposal in Draft Determination	278,666	1,444,000	4,332,000	4,484,000	4,484,000	15,022,666

[8] Comparable market operators in the UK and Europe.
[9] There are major differences in market design and market operator scope, roles and responsibilities across each comparator.
[10] Great Britain market operator.
[11] The last comparable period for SEMO. Prior to that SEMO's average cost of FTEs increased from 2010/11 (€78k) to 2012/13 (€81k) and then fell back in 2013/14 (€76k).
[12] Throughout the document the SEMC has only used SEMO data from and pre-dating 2013/14. SEMO was winding down SEM operations in the financial years 2014/15 and 2015/16.

Table 4.3 SEMC Draft Determination payroll proposal

Summary of responses:

- In their response, Viridian requested that the SEMC provide more information in relation to the sharing of resources to create synergies between the SEMO and SEMOpx price controls in order to provide assurance that costs are appropriately apportioned and only recovered once. In terms of the number of resources, they are of the view that 58 FTEs appears too many when considered along with the resourcing for SEMOpx. With the shift to more junior roles, Viridian is also of the view that a more significant shift in average FTE costs would be expected.
- Viridian have asserted that little detail has been provided of how the proposed costs of SEMO relate to other similar providers, which should be provided on the basis of costs per service provided.
- In their response, Viridian query the SEMC statement that the number of FTEs proposed do not vary significantly for the last year of comparable data (2013/14) and argue that the number of FTEs in the last full year of the SEM (2016/17) was 42.
- Viridian have queried SEMO's role in market monitoring given that this is being carried out by the RAs.
- In their response, Viridian have queried the bonus structure proposal and details of the level of performance required to achieve an average of an 8% bonus. They also query the pension costs which equate to approximately 17% of salary.
- Viridian also query the proposed average FTE cost of €76,000 and assert that it is at the very high end of the scale in the energy industry in general.
- BGE is of the view that final decisions in relation to payroll costs should take into account the necessity for SEMO to have the range and quality of resources it requires to carry out its roles in I-SEM to a high standard.
- While SEMO welcomes the views of the SEM Committee as set out in the Draft Determination in terms of the number and structure of FTEs, SEMO states in their response that the SEM Committee has not provided for the expected market based cost of personnel associated with SEMO operations.
- SEMO has sought to provide justification as to why the cost per FTE for 2018/19 should be increased from €76,000 to €85,000, based on expected real wage changes from 2014 to 2018 and the material effect of changes to the staff mix. SEMO argues that the primary reason for the change in average FTE costs relates to real wage growth in the labour markets faced by SEMO, and has provided analysis indicating a blended real change in average total hourly earnings from 2014 to 2016 for Ireland and Northern Ireland of 5.86%. SEMO has also provided analysis indicating a projected real wage growth of 1.72% from 2016 to 2018. On this basis SEMO has calculated a blended real growth rate for average earnings across both jurisdictions from 2014 to 2018 of 7.64%. This equates to an increase in the average cost of an FTE from €76,000 to €81,800.
- SEMO further argues that these economy wide forecasts underestimate real wage increases in the sectors specific to SEMO.
- SEMO states that the second driver for increased payroll costs is the change in the mix of staff as referenced in the Draft Determination paper. SEMO has provided calculations indicating that this revised mix provides for an estimated increase of €1,815 per FTE. SEMO has also provided for a further increase of €2000 per FTE, but has not provided the calculations in relation to this. This leads to a proposed total cost per FTE of €83,800.

- Based on this information, SEMO does not believe that its original submission of €85,000 per FTE is unreasonable
- SEMO is also concerned that the SEM Committee is minded to not account for Real Price Effects. SEMO argues that it is not correct to state that RPEs are not suited to a business such as SEMOs as they have been applied to other largely labour based businesses such as SONI TSO.

SEMC Response and Decision:

A detailed submission has been provided by SEMO on the functions and responsibilities of each proposed FTE and through a review of each function and benchmarking with comparable entities (see earlier discussion) the SEMC is satisfied with the resources allowed.

In their Draft Determination response, SEMO proposed a blended inflation figure for ROI and NI of 7.64% applied to the average 2013/14 FTE costs figure of €76,000, giving a projection to 2018 of €81,800. In contrast, the SEMC has calculated a real inflation figure for ROI and NI separately and then applied it to each average FTE cost for 2013/14 by grade. Sectoral wage data has been used in both jurisdictions and data points from 2014, 2015, 2016 and 2017 have been used to inflate these costs. Three sectors have been used to construct this index, namely;

- Information and Communication;
- Professional, Scientific and Technical; and
- Administrative and support services

These figures were then weighted on a 75:25 basis to provide a composite average FTE cost figure at each grade. However, given the small sample size for the 'manager' grade, SEMO's average FTE cost projection has been used.

The net effect of this analysis is an increase from €76,000 per FTE in 2013/14 to €80,300 per FTE in 2018/19, accounting for the revised FTE costs for each grade. From additional analysis conducted SEMC is of the view that an allowance for each internal resource identified of:

- €77,600 is appropriate for pre-go live and the 4 months to September 2018; and
- €80,300 is appropriate for 2018/19, €80,200 in 2019/20 and €80,100 in 2020/21.

This reflects the actual historical costs of SEMO indexed to today's equivalent using appropriately reflective wage indices[13]. We therefore propose a staff cost as per table 4.4 within the overall revenue allowance, following on from the Draft Determination proposal to provide no allowance for Real Price Effects.

In response to Viridian's comment concerning the change to more junior roles for SEMO and how this impacts on average costs per FTE, as shown above analysis has been conducted by the SEMC on a per grade basis to account for changes in grade structure between SEM and I-SEM. In the Draft Determination the SEMC noted an increase in FTE numbers in 2010/11 to 2013/14, accompanied by a shift towards more junior roles, and that this was reflected in flat payroll costs and a slight reduction in average FTE costs from the time in question.

Viridian also query SEMO's requested FTEs in terms of Market Monitoring and Surveillance. SEMO has a number of direct obligations under REMIT. SEMO has described the role of these FTEs as

[13] The Northern Ireland data was sourced from the Annual Survey of Hours and Earnings (ASHE) and NISRA and the Ireland data from the Central Statistics Office (CSO)

observing market behaviours, testing for irregularities and reporting on these to the relevant authorities. In their submission they have stated; '*EirGrid and SONI will require a dedicated function within SEMO to perform monitoring, surveillance and reporting on behalf of the Group across all I-SEM markets*'.

In terms of staff bonuses, the SEMC has no view on the structure of these for SEMO, but has compared bonuses as a percentage of salary costs between 2013/14 and this price control period. In 2013/14 bonuses amounted to approximately 11% of salary costs and this amount is lower at circa 8% in this price control.

The SEMC's decision in terms of payroll is set out in table 4.4.

Payroll						
2017 monies		**Sep-18**	**Sep-19**	**Sep-20**	**Sep-21**	**Total**
€	**Pre Go Live**	**4Mths**	**12Mths**	**12Mths**	**12Mths**	
Total	378,000	1,604,000	4,880,000	5,105,000	5,211,000	17,178,000
SEMC Decision	348,000	1,481,000	4,597,000	4,752,000	4,766,000	15,944,000
Number of FTES	22	57.25	57.25	59.25	59.5	

Table 4.4 SEMC Payroll Decision

4.4 Overhead Costs

Submission Summary:

Overhead costs include costs for facilities and property management, recruitment, HR and administration and corporate costs. SEMO has estimated the overheads necessary to support its operation as set out in table 4.5 below.

Pre-Go Live costs reflect an estimate of 20% of each of the individual cost areas reflecting the amount that SEMO do not expect to be capitalised under accounting conventions and are therefore expecting to be recovered over the duration of the SEMO price control.

Overhead Costs (SEMO submission)						
€	**Pre Go Live**	**Sep-18 4Mths**	**Sep-19 12Mths**	**Sep-20 12Mths**	**Sep-21 12Mths**	**Total**
Facilities & Property Management	64,000	273,000	818,000	838,000	841,000	2,834,000
Recruitment, HR & Admin	21,000	109,000	326,000	344,000	337,000	1,137,000
Corporate Costs	54,000	268,000	805,000	824,000	827,000	2,778,000
Overhead totals	**139,000**	**650,000**	**1,949,000**	**2,006,000**	**2,005,000**	**6,749,000**

Table 4.5 SEMO overhead costs submission

Facilities costs are allocated on a blended per head basis of €13,000 and cover all shared office space including cleaning, maintenance, car parking, security, mail service, copy bureau, switch board, catering, canteen services, rent and utilities. Facilities also includes the cost of maintaining the servers, routers and telecommunications equipment.

Recruitment, HR and Administration includes an estimated €4.8k per FTE for staff travel, with training estimated at €750 per FTE. It is assumed that 50% of SEMO staff will be recruited externally with 15% of the employee salary paid as a recruitment fee.

Corporate Costs include the allocation of 40% of the Market Operator Director's cost/time to SEMO and the allocation of Group costs associated with the CEO, Board, Group Finance, Group Regulation, HR and procurement based on the number of FTEs in SEMO.

SEMC Draft Determination Proposal:

When compared against the enduring Price Controls (For EirGrid and SONI) on a per annum basis, the overhead costs submitted for SEMO appeared to be 1.6 times the overhead cost of an FTE under the enduring Price Controls (i.e. €34,000 versus €21,000).

The SEMC queried these costs with SEMO, who have explained that the different resourcing and accounting models between the TSOs and SEMO limit this comparison and argued that the structure of the respective price controls and the nature of the costs in each of the jurisdictions differs.

	TSO, SONI & SEMO PC	SEMO Pre Go-Live	May 18 – Sep 18	Oct 18 – Sep 19	Oct 19 – Sep 20	Oct 20 – Sep 21
Total cost per FTE	€105,433	€23,500	€39,544	€119,807	€120,525	€122,305
Overheads per FTE	€21,141	€6,318	€11,404	€34,193	€34,000	€33,983
Payroll costs per FTE	€84,292	€17,182	€28,140	€85,614	€86,525	€88,323
% overhead/Payroll	25%	37%	41%	40%	39%	39%
FTE		22	57	57	59	59

Table 4.6 Draft Determination Analysis of Overheads per FTE

At the time of the Draft Determination the SEMC was assessing the additional information provided by SEMO to justify the difference seen between the overhead allocation to SEMO in comparison to the allowances within the respective TSO and SONI price controls. The following overhead allowance was proposed in the Draft Determination;

Overhead Costs						
€	Pre Go Live	Sep-18 4Mths	Sep-19 12Mths	Sep-20 12Mths	Sep-21 12Mths	Total
SEMO Submission	139,000	650,000	1,949,000	2,006,000	2,005,000	**6,749,000**
SEMC reduction in overheads	44,200	248,000	744,000	759,000	758,000	**2,553,200**
SEMC Proposal	94,800	402,000	1,205,000	1,247,000	1,247,000	**4,195,800**

Table 4.7 Draft Determination Overhead Costs Proposal

Summary of responses:

- Viridian has requested clarity on why corporate costs have risen from less than 1% in 2009/10 to 7.75% in 2019/20. In their view corporate costs and costs for HR, Recruitment and Administration appear to be quite high and they have requested confirmation that comparisons have been made to these compared to other Market Operators.
- In terms of overheads in general, Viridian is of the view that to aid the understanding of the RAs and participants, the price controls should be adjusted so that they all report costs on a consistent basis.
- In its response, as per the response to SEMOpx's draft determination paper, SEMO has provided further information in relation to the breakdown of overheads costs between the

TSO and MO, and states that the structure of overheads in the respective price controls is not consistent.

- There are two primary elements of cross charges to SEMO; Corporate Overheads and corporate services. Corporate overheads refer to boards, the CEO, CFO, Group Finance, Group Regulation and Internal Audit and are a common element of each of the TSO and MO controls. Corporate Services cover EirGrid Group recharges for services not directly undertaken by SEMO such as Human Resource Support, Payroll and Procurement.
- With regard to premises costs, the treatment in the SONI TSO and EirGrid TSO price controls is different, as premises are leased in Ireland and owned and remunerated through the RAB in Northern Ireland.
- SEMO has calculated an estimated blended rate for overheads for the EirGrid and SONI TSO price controls of €22,500 per FTE, with a comparative 12 month equivalent overhead cost for SEMO of €23,000 per FTE.
- SEMO has also provided a comparison of actual SEMO overhead costs incurred in 2013/14 in comparison to the average cost over each year of this price control, asserting that average estimated costs in this price control are lower than actuals in 2013/14 across each of the overheads cost centres.

SEMC Response and Decision:

SEMO has provided further information on the breakdown of overhead costs between SEMO and other licensed businesses within the EirGrid Group in order to compare each licenced business on a like for like basis in terms of overheads.

HR, Legal and Procurement salary costs are captured as a direct cost to the TSOs in that the costs are included within headcount and staff costs and not identified as an ‘overhead’. Such costs would have been assessed as part of the resourcing and efficiency assessment of those price controls in respect of headcount and cost per FTE. SEMO has sought to quantify the impact of this inconsistency - approximately €11,000 per FTE.

The treatment of facilities costs is similarly different both in EirGrid and SONI and hence between TSOs and SEMO. SEMO highlights that since the premises in NI are owned and expensed through the RAB as a capital cost this cost would not show in any overhead calculation whereas the lease cost of a building would do so in EirGrid. The blended allocation of costs therefore omits part of the property costs in comparison to EirGrid but partially includes them in comparison with SONI. SEMO have also sought to show that the overheads under I-SEM are significantly lower than under SEM and re-emphasised that their estimates are based upon a robust bottom-up basis.

As per the updated analysis submitted by SEMO, taking account of the differences in how corporate overheads and corporate services are allocated between the TSO, MO and SEMOpx price controls, overheads amounting to €22,460 per FTE per annum were demonstrated and justified for enduring TSO price controls (on a blended 75 to 25 basis) versus €23,092 per FTE per annum for the SEMO price control.

SEMO remain of the view that this does not represent an absolute comparison but provides a closer reference point to that of the Draft Determination. In order to arrive at a robust allowance based on the only comparison achievable with other efficient levels of overheads SEMC has decided to align an allowed level of overheads with the enduring TSO price controls, resulting in a reduction of €632 per FTE per annum. This reduction is set out in table 4.8 below.

In terms of Viridian's comment with respect to the Corporate Costs component of overheads in 2009/10 to 2019/20, the SEMC has conducted a review of these costs for each preceding year of SEMO price controls and has noted this increase, however in 2013/14 corporate costs amounted to €861,000 and were €1,015,000 in 2014/15. In comparison, corporate costs as submitted by SEMO for 2019/20 were €824,000 and have been reduced in line with the overhead cost reduction set out in table 4.8.

Overhead Costs						
€	**Pre Go Live**	**Sep-18 4Mths**	**Sep-19 12Mths**	**Sep-20 12Mths**	**Sep-21 12Mths**	**Total**
SEMO Submission	€139,000	€650,000	€1,949,000	€2,006,000	€2,005,000	**€6,749,000**
Reduction in overhead allocation	€3000	€12,000	€36,000	€37,000	€38,000	**€126,000**
SEMC Decision	€136,000	€638,000	€1,913,000	€1,969,000	€1,967,000	**€6,623,000**

Table 4.8 SEMC Decision on Overhead Costs

4.5 IT & Telecommunications Costs

Submission Summary

IT and Telecommunications Costs represent the second largest category of OPEX for this price control, accounting for between 20%-27% of costs for each period of the submission. In previous SEMO price controls IT and Telecommunications Costs represented the largest category of Opex.

IT costs are SEMO's deemed share of total IT costs across the EirGrid Group. These comprise a significant operational cost for SEMO due to the ongoing support and development of central market systems and underlying communication links. The share has been allocated across the licences based on consultations with internal Subject Matter Experts as IT is now managed on a group wide basis. Telecommunications costs cover the cost of telecommunications links between SEMO's two sites in Dublin and Belfast to enable resilience in the event of a failure.

IT & Telecommunications Costs						
€		**Sep-18**	**Sep-19**	**Sep-20**	**Sep-21**	**Total**
	Pre Go Live	**4Mths**	**12Mths**	**12Mths**	**12Mths**	
Managed Services	97,000	198,000	594,000	335,000	304,000	1,528,000
24/7 Support	14,000	91,000	273,000	273,000	273,000	924,000
Total Outsourced Resources	111,000	289,000	867,000	608,000	577,000	2,452,000
Apps Support	-	468,000	1,405,000	1,287,000	1,237,000	4,397,000
IT Hardware and Software Support	-	100,000	301,000	209,000	309,000	919,000
Telecommunications	-	60,000	180,000	180,000	180,000	600,000
Total IT & Telecommunications	**111,000**	**918,000**	**2,753,000**	**2,384,000**	**2,303,000**	**8,469,000**

Table 4.9 SEMO IT & Telecommunication Costs Submission

SEMO has included details in its submission on drivers for increases in this cost category between SEM and I-SEM. These include;

- Managed services are currently being tendered for and are required to operate I-SEM systems to mandated service levels.
- The high service levels required for I-SEM system availability of 99.95% will require 24/7 support rather than on call resources to resolve incidents and monitor systems.
- Apps support costs account for over half of IT and Telecommunications costs at €4.5m. These include MMS (Market Management Systems), AoLR (Agent of Last Resort), Oracle Middleware and CRM/Query Management.

SEMC Draft Determination Proposal:

The SEMC broadly accepted the IT and Telecoms costs as set out in SEMO's submission. Many of these costs reflect estimates provided by EirGrid/SONI Subject Matter Experts (SMEs), both in respect to the ongoing costs of maintaining hardware and software, and the share attributed to SEMO. As of the Draft Determination, the SEMC was of the view that below a certain material threshold, risks and opportunities associated with such costs should reside with SEMO based on the ex-ante allowance outlined in the Final Determination.

SEMO has provided these estimates at a granular level and also provided the basis and scale of allocation of these costs between EirGrid's licensed activities i.e. MO, TSOs, NEMO and Interconnectors. In most cases these costs are split 50:50 between MO and TSOs but where the systems are wholly in respect of one licensed activity or another then the costs are wholly attributed to that business.

Despite increased complexity, average costs proposed for this price control are comparable with those incurred in the last three years of the SEM. Based on the above evidence and given the uncertainty of the nature of the costs likely to be incurred the SEMC is of the view that the submitted estimates provided by SEMO are reasonable and in line with industry levels and past spend.

IT & Telecommunications Costs						
€		Sep-18	Sep-19	Sep-20	Sep-21	Total
	Pre Go Live	4Mths	12Mths	12Mths	12Mths	
SEMO Submission	111,000	918,000	2,753,000	2,384,000	2,303,000	8,469,000
SEMC Proposal	**111,000**	**918,000**	**2,753,000**	**2,384,000**	**2,303,000**	**8,469,000**

Table 4.10 SEMC proposal on IT & Telecommunications Costs

Summary of Response:

- Viridian is of the view that the shift for SEMO to spend proportionately less on IT and Telecommunications vs payroll seems at odds with the needs of the market given the complexity of I-SEM and that it would be expected that there would be proportionately more investment in IT and Telecommunications than in Payroll.
- Viridian has also requested confirmation on who bears the risks in relation to uncertain costs if the outturn is different to the forecast in the Price Control.
- In their response, Viridian assert that there is a need to ensure that the allocation of IT costs across EirGrid, SONI, SEMO, SEMOpx and EWIC are appropriately apportioned and no double recovery is allowed.
- In their response, BGE note that IT and telecommunications costs include the costs of AoLR application services. In the AoLR decision, reference was made to some socialisation of set up costs and BGE would welcome clarity around the distinction of AoLR specific costs and how much is recoverable through this price control.
- SEMO did not provide an update on costs as some are still being negotiated with 3rd party vendors. SEMO asserted that such estimates remained the best estimates provided by Subject Matter Experts in the respective IT departments but highlighted the challenges in forecasting these costs accurately.

SEMC Response and Decision:

The SEMC remains of the view that an ex-ante revenue allowance is the most appropriate means by which to provide certainty to both SEMO and other stakeholders. It is also incumbent on SEMO to manage their costs effectively and efficiently and this extends to providing estimates to the RAs on a timely basis to implement tariffs. The scope and design of I-SEM is now established which reduces risks around potential IT changes.

Whilst SEMO highlighted the fact that many of these costs remained in negotiation and are uncertain, the SEMC expects that SEMO have been able to provide reasonably predictable estimates given the requirement to determine tariffs. In many instances such costs will be negotiated as a part of the overall development of I-SEM and service contracts.

Based on the revised allowances in this Final Determination IT & Telecommunications costs represent 23% of the total revenue allowance, while labour costs represent 44% of the total revenue allowance. SEMO has provided the SEMC with information regarding the percentage allocation of IT costs, hardware and software costs across each of the licences, including EirGrid TSO, SONI TSO, SEMOpx, Moyle and EWIC.

The cost of the AOLR system is included within the IT Apps support category and amounts to €300,000 per annum, a total of €1,000,000 over the period of the price control. A separate section is included in this Final Determination which discusses the AOLR, the IT and resource costs associated with it, and the mechanism for charging a fee for users of the AOLR, including recovery of these costs through this price control.

SEMC has therefore decided to remain with the ex-ante allowance in full, as proposed in the Draft Determination, but to restrict the exposure of both SEMO and customers from any variation in these estimates to 3 years and 4 months. Any changes in costs through new market developments will be separately remunerated through additional revenue allowances.

IT & Telecommunications Costs						
		Sep-18	Sep-19	Sep-20	Sep-21	Total
€	Pre Go Live	4Mths	12Mths	12Mths	12Mths	
SEMO Submission	111,000	918,000	2,753,000	2,384,000	2,303,000	8,469,000
SEMC Decision	**111,000**	**918,000**	**2,753,000**	**2,384,000**	**2,303,000**	**8,469,000**

Table 4.11 SEMC Decision on IT & Telecommunications Costs

4.6 Finance and Regulation

Submission Summary:

Finance and Regulation costs include audit fees, professional fees, banking costs and modifications committee costs. An overview of SEMO's submission is presented in table 4.12. Banking costs are estimated at €30k per annum, while Modification Committee Costs are estimated to be €10k per annum, based on the assumption that there will be 6 committee meetings per year in I-SEM.

Audit fees are broken down into market audit fees, statutory audit fees and internal audit fees. Market audit fees are estimated at €250k per annum and are expected to be higher than historical costs of €180k due to a revised scope for the audit. External Statutory Audit Fees are estimated at €50k per annum while internal audit fees are estimated at €15k per annum.

Finance and Regulation						
		Sep-18	Sep-19	Sep-20	Sep-21	
€	Pre Go Live	4Mths	12Mths	12Mths	12Mths	
Audit Fees	-	105,000	315,000	315,000	315,000	1,050,000
Professional Fees	-	88,000	265,000	215,000	190,000	758,000
Banking Costs	-	10,000	30,000	30,000	30,000	100,000
Modifications Committee Cost	-	3,000	10,000	10,000	10,000	33,000
FX Costs (pass through)	-	-	-	-	-	
Total	**-**	**206,000**	**620,000**	**570,000**	**545,000**	**1,941,000**

Table 4.12 SEMO Finance and Regulation Submission

Professional fees cover SEMO's requirements for external consultancy support, Disputes and Modifications Committee support and regulatory and legal support. These costs are broken down in the table below.

External Professional Fees (subset of table 4.12)						
		Sep-18	Sep-19	Sep-20	Sep-21	
€	Pre Go Live	4Mths	12Mths	12Mths	12Mths	
Modifications committee legal advice		33,000	100,000	75,000	50,000	258,000
SEM Market Legal advice		17,000	50,000	50,000	50,000	167,000
Cyber security advice		17,000	50,000	50,000	50,000	167,000
Mifid 2		17,000	50,000	25,000	25,000	117,000
Systems Certifications		5,000	15,000	15,000	15,000	50,000
Total		**88,000**	**265,000**	**215,000**	**190,000**	**758,000**

Table 4.13 Breakdown of Professional Fees from table 4.12

SEMC Draft Determination Proposal:

In its submission SEMO argued that the new and more complex I-SEM market will drive higher **audit fees** than in the past and has estimated an increase of almost 50% from the cost of the equivalent audits in 2014. While this may be the case in the first years of I-SEM, it is expected that ongoing fees will fall back towards historic levels. This is reflected in the historic cost data provided by SEMO which shows that for the period 2009-11 the average cost for market audit fees was €277,000 (plus an estimated share of financial audit costs of €30,000 for external financial audit) whereas in subsequent years 2012-15 the cost reduced to €200,000 (+€25,000).

In the Draft Determination the SEMC proposed that the allowances in year 1 and Year 2 should be in line with SEMO's proposals, as these costs are likely to be higher than historic levels, at least initially. However, on the basis of the reduction seen in audit costs in SEM SEMO, the SEMC proposed that there should be a reduction in Audit costs after an initial bedding in period. On this basis the SEMC was minded to allow a total audit fees allowance of €941,000 over the Price Control, a reduction of €109,000 over the price control period.

The SEMC is of the view that **professional fees** are significantly higher than the previous historic allowance, with the exception of 2011 where a rise was due to an EU mandated change on intraday trading. As such, the SEMC is of the view that in line with audit fees that the allowances would be expected to be higher in Year 1, but that these would decrease in Years 2 and 3. On this basis the SEMC proposes an allowance of €710,000, for external professional fees, a reduction of €48,000 over the price control period.

In addition, SEMO identify the increasing risk of cyber-crime as a new area of concern and include an estimate of €50,000 in each of the years to undertake advice and assurance checking. SEMO has also identified the need to comply with Mifid II from January 2018 as a further driver of cost (€50,000 initially and €25,000 in subsequent years). The RAs are of the view that the costs associated with these are reasonable and proposed no changes to the allowance.

The SEMC is aware that many of the costs submitted by SEMO for finance and regulation reflect estimates in a revised market and are therefore likely to be higher than recent historic levels, at least initially. The SEMC has reviewed these costs with a view to their return to historic levels by 2020/21. This has led to a proposed decrease in the SEMO allowance of €106,000 over the price control period for audit fees and a decrease in SEMO's proposed professional fees of €48,000.

Finance and Regulation						
€	Pre Go Live	Sep-18	Sep-19	Sep-20	Sep-21	Total
SEMO submission	-	206,000	620,000	570,000	545,000	1,941,000
Reductions		(11,000)	(23,000)	(23,000)	(100,000)	(157,000)
SEMC Proposal	**-**	**195,000**	**597,000**	**547,000**	**445,000**	**1,784,000**

Table 4.14 Finance and Regulation SEMC Proposal

Summary of Responses:

- Viridian supported the SEMC proposal to allow a reduced audit fee allowance of €941,000.
- BGE supported the SEMC proposed reduction of finance and regulation costs as outlined based on decreasing costs from the beginning of the SEM market. However BGE noted the increased administrative burden associated with the Modifications Committee.
- SEMO did not accept the SEMC proposed reduction in audit fees over the Price Control Period and argued that the tenders for these audits are all multi-year tenders, typically 2-3 years for the Market Audit and 3-4 years for the Statutory and internal audits.
- SEMO is of the view that it is unlikely that audit costs will decline on a year on year basis over the initial years of I-SEM.

SEMC Response:

In the Draft Determination the SEMC suggested that both audit and professional fees were significantly higher than those incurred by SEM SEMO and that after an initial period they should be reduced to more historic levels. Whilst SEMO expects contracts to be let over a multi-year period they have not provided further evidence to support the sustained increase in costs.

Whilst it is expected new markets to require their environment, controls and risks to be documented and tested in full initially, without evidence to the contrary the SEMC remains of the view that subsequent scope of audits and professional support are likely to return to more historical levels. The SEMC has thus decided to allow for the finance and regulation costs as per the Draft Determination.

Where new risks present themselves and new and uncertain areas of work arise as a result of I-SEM then SEMC are prepared to review these estimated costs, until the end of the current price control.

Finance and Regulation SEMC Final Determination						
		Sep-18	Sep-19	Sep-20	Sep-21	Total
€	Pre Go Live	4Mths	12Mths	12Mths	12Mths	
Audit Fees	-	102,000	307,000	307,000	225,000	941 ,000
Professional Fees	-	80,000	250,000	200,000	180,000	710,000
Banking Costs	-	10,000	30,000	30,000	30,000	100,000
Modifications Committee Cost	-	3,000	10,000	10,000	10,000	33,000
FX Costs (pass through)	-	-	-	-	-	
SEMC Decision	**-**	**195,000**	**597,000**	**547,000**	**445,000**	**1,784,000**

Table 4.15 Finance and Regulation SEMC Decision

4.7 RPI – X Approach

SEMC Decision:

In the 2016-2019 Price Control, the SEM Committee determined that Opex should be subject to Revenue Cap (RPI-X) Regulation with an X of 0.3 applied. RPI-X regulation incentivises SEMO to reduce costs by increased efficiency of processes and lower input prices. Any efficiency and price savings are retained by SEMO; overspends must conversely be absorbed by it. According to the CSO, prices on average, as measured by the EU Harmonised Index of Consumer Prices (HICP), have remained stable with an increase of 0.4% from August 2016, with the most notable changes in price being the energy sector and service industry[14].

The SEMC recognises that SEMO is similar to a 'business service provider'. An assessment of an annual total factor productivity growth percentage was therefore determined with this in mind. A productivity growth rate of 0.3% was identified as being particularly relevant for the forthcoming years to a labour intensive business such as SEMO.

BGE stated that it would welcome further insight into how the SEMC determined a productivity growth rate of 0.3% as being relevant for SEMO in I-SEM and would welcome confirmation by the SEMC that that it may open 'x' for further review during the price control. The RAs decided that an X factor of 0.3 would apply to SEMO's operational expenditure in line with current practice as per the 2016-2019 price control. It is not envisaged that this figure will be reviewed within the duration of this price control.

[14] http://www.cso.ie/en/releasesandpublications/er/cpi/consumerpriceindexaugust2017/

5 Capital Expenditure

5.1 Capital expenditure cost assumptions

The Capex set out in this chapter reflects the submission provided by SEMO for this price control.

Submission Summary

SEMO has classified capital expenditure into two categories – unpredictable business capex that includes 'business as usual' which may occur more frequently and is generally smaller, and predictable business capex, which is more significant but is currently uncertain given that it is driven by future market developments (including Biannual IT market release capex, IT release support capex). In the case of the latter, SEMO did not include any Capex proposals or attempt to predict the costs of Biannual Market Releases due to the level of uncertainty regarding the level of Capex that may be required within the duration of this price control.

On this basis, SEMO submitted costs associated only with unpredictable Business Capex.

CAPEX						
		Sep-18	Sep-19	Sep-20	Sep-21	Total
	Pre Go Live	4Mths	12Mths	12Mths	12Mths	
SEMOpx Unpredictable Business Capex	-	-	€400,000	€400,000	€400,000	€1,200,000

Table 5.1 SEMO Capex submission

This unpredictable business Capex is a discretionary fund requested by SEMO to cover the aggregate costs of smaller scale but ongoing levels of business Capex. This has been broken down into two components:

1. Failing or obsolete software or hardware components; new business requirements that demand a different set of components; the availability of new products on the market that would address longstanding issues; or the fact that a software upgrade on one side of the business may mean that existing software on another side may be incompatible.

2. The need to provide for corporate developments which are emerging from SONI/EirGrid to which SEMO would contribute.

SEMO has requested an annual allowance of €400,000 per annum to be included in SEMO's overall Capex allowance for this purpose. While no capex was submitted under the categories of Biannual Market Release capex, IT release support capex or predictable business capex, SEMO highlighted that additional capex requirements may arise during the price control period.

SEMC Draft Determination Proposal:

The SEMC proposed the following in terms of unpredictable Capex;

1. In Year 1 an allowance of €400,000 would be permitted for unpredictable Capex on an ex-ante basis. This is commensurate with the level of risk that may be seen in the new market. This allowance is considered a pass through item, whereby actual spends are accounted for as part of the annual correction factors. Actual spends will be verified through an ex-post review and the revenues corrected in line with annual correction factors.

2. In Year 2 and Year 3 an allowance of €200,000 would be permitted for unpredictable Capex. This is because the level of risk would be expected to decrease as the new market develops and the level of allowance is in line with that allowed in SEM SEMO. Again this allowance will be considered a pass through whereby actual spends are accounted for as part of the annual correction factors.

At this time, given the scale of certain vs uncertain Capex submitted as part of this price control, the SEMC was not minded to include a menu regulation incentivisation approach to this price control, though the SEMC sees the value of this approach for future price controls where better estimates of Capex costs can be submitted.

CAPEX							
		Sep-18	Sep-19	Sep-20	Sep-21	Total
€	Pre Go Live	4Mths	12Mths	12Mths	12Mths	
Unpredictable Business Capex	-	-	400,000	400,000	400,000	1,200,000
SEMC Proposal	-	-	400,000	200,000	200,000	800,000

Table 5.2 Capex Proposal

A predictable CAPEX allowance enables SEMO to plan for hardware and software upgrades and the implementation of additional operational support systems. For the purposes of this Price Control no predictable Capex has been submitted.

In the Draft Determination the SEMC proposed that where SEMO are of the view that predictable capex may arise during the Price Control, then such submissions would need to meet the following principles;

1. Any submission should meet a materiality threshold of €500,000
2. Submissions should be made in a timely manner, at least 4 months prior to annual tariff setting so as to allow the SEMC sufficient time to scrutinise and review.
3. Submissions which may arise should be based on costed estimates, rather than forecast estimates.

Where such predictable Capex is accepted by the SEMC, it will be subject to final outturn review as part of the next Price Control. This will include efficiency review of the Capital Expenditure and any inefficiency (plus return) will be corrected where deemed inefficient.

Summary of Responses:

- Viridian supports the SEMC proposal to continue with Rate of Return Regulation to CAPEX.
- Viridian has requested clarity on what the materiality threshold of €500,000 means in practice, and how this would work if a Capex cost item is less than €500,000.
- In terms of the previously allowed allowance of €200,000 in unpredictable Capex, Viridian has requested analysis to show whether in practice this allowance was warranted and what expenditure was actually incurred. They are also of the view that the justification for the increase to €400,000 in unpredictable Capex is not apparent.
- BGE believes that unpredictable capex is too uncertain an area for which ex-ante provision should be made. BGE thus suggests that these unpredictable capex costs are in fact dealt with annually, on an ex-post basis when actual costs can be accurately assessed and recovered through correction factors.

- BGE supports the SEMC proposed principles that any predictable capex submitted by SEMO should: a) breach a materiality threshold of €500k; b) be made at least 4 months before the annual tariff setting processes; c) be based on costed rather than forecast estimates.
- SEMO argues that due to the uncertainty of the IT requirement over the early years of the new electricity market, it would be prudent for the SEMC to provide for the Unpredictable Capex allowance in full for the duration of the control. Given that it is the SEMC intention to provide these revenues on a pass through basis SEMO is of the view that there is limited, if any, downside risk to inclusion of the full amount in the price control provisions.
- SEMO believes it to be imperative to have sufficient revenue allowance to respond immediately to situations that require immediate resolution.
- SEMO notes the SEMC proposals in relation to predictable business Capex during the control, but does not view the proposals as practical in a period where establishment/bedding in of significantly changed requirements is required. SEMO requests that the final price control decision provides a mechanism for additional Capex to be sought and provided for without limiting the process, scope or mechanism for doing so.

SEMC Response and Decision:

Unpredictable capex

I-SEM SEMO is a more complex and integrated solution than SEMO. That said, there is a significant capital allowance within the implementation costs to allow for that integration and the replacement of necessary system infrastructure. The SEMC is conscious of the uncertainty that I-SEM SEMO faces and therefore maintains that a higher allowance of unpredictable capex should be provided for initially than provided historically.

In response to Viridian's query, an ex-ante allowance for unpredictable business Capex was provided in past SEMO Price controls, in order to provide sufficient revenue to enable SEMO to respond to IT issues requiring immediate resolution. In the 2013-2016 SEMO price control an allowance of €80,000 was provided for and, based on actual spend information published in the 2016-2019 price control, this allowance was not fully spent. In the 2016-2019 price control, an allowance of €80,000 per annum was provided for, based on information in relation to the nature and costs of expenditure incurred in previous price control periods.

No further evidence has been provided to support an increased level of spend over the price control. The SEMC is therefore of the view that allowed costs should remain in line with the Draft Determination i.e. €400,000 in the first year given uncertainty in the new market and €200,000 in each of the subsequent 2 years on a pass through basis.

Given the difference in scale between the allowance for unpredictable Capex the SEMC considers that the provision of an allowance on a pass through basis will mean that only that which is actually spent by SEMO will be placed on its RAB. An ex-post review of actual spend will take place as part of the annual tariff setting process and will be adjusted through the k-factor as necessary.

CAPEX						
		Sep-18	**Sep-19**	**Sep-20**	**Sep-21**	**Total**
€	**Pre Go Live**	**4Mths**	**12Mths**	**12Mths**	**12Mths**	
Unpredictable Business Capex	-	-	€400,000	€400,000	€400,000	€1,200,000
SEMC Decision (on a pass through basis subject to ex-post review)	**-**	**-**	**€400,000**	**€200,000**	**€200,000**	**€800,000**

Table 5.3 Capex Decision

Predictable capex

SEMC is cognisant of the uncertainty in the level and nature of change in the I-SEM market following implementation. It is also aware that there are likely to be a number of actions outstanding post go-live as well as a number of sustainable solutions to be developed following interim solutions implemented as part of I-SEM (Day 2 list).

The SEMC is of the view that it will be important to be clear in defining any Day 2 list so as to avoid any boundary issues between these costs and those associated with other change, as well as clearly stipulating what constitutes unpredictable and predictable capex.

In order to facilitate the setting of future tariffs in a clear and robust fashion, SEMC would reinforce the need for any foreseeable and predictable capex to be submitted at least 4 months ahead of any new tariffs being applicable to allow sufficient time for scrutiny and inclusion.

Given SEMO's response to the SEMC proposal concerning the principles for Predictable Capex and Viridian's query as to what would practically occur if Capex spends do not meet the materiality threshold, the SEMC has decided to remove this materiality threshold and apply the following principles to predictable Capex;

1. Submissions should be made in a timely manner, at least 4 months prior to annual tariff setting so as to allow the SEMC sufficient time to scrutinise, review and approve.
2. Submissions which may arise should be based on costed estimates, rather than forecast estimates.
3. Where such predictable Capex is accepted by the SEMC, it will be subject to final outturn review as part of the next Price Control.
4. This will include efficiency review of the Capital Expenditure and any inefficiency (plus return) will be corrected where deemed inefficient.

6 Financeability

6.1 Introduction

EirGrid plc and SONI Ltd respectively hold a Market Operator Licence and a Transmission System Operator Licence. SEMO is a joint venture between SONI MO and EirGrid MO. Under the SEMO price control, a blended WACC for EirGrid and SONI applies. The WACC for SONI (in terms of the asset beta) has been uplifted to reflect high operational gearing, while the EirGrid WACC has not. However there are a number of provisions for remuneration within the EirGrid price control, set out below in the section on the treatment of financeability in EirGrid and SONI price controls.

Both RAs and the SEMC in carrying out their functions must have regard to the financeability of licensees. This duty as set out in legislation calls for a consideration of relevant linkages with the financing framework of the licensees, which has also been noted by the Competition and Markets Authority in relation to the SONI TSO price control. Within this price control, in considering SEMO's financeability there are a number of relevant linkages that need to be considered.

Given the new responsibilities arising from the creation of the I-SEM, which has created the requirement for a new I-SEM SEMO, and the consequent risks that arise from the new market; and given the specific linkages to the two TSO price controls (and that of SEMOpx), alongside the wider funding of the implementation of I-SEM, it should be understood that the approach taken to the financing of SEMO in this price control, and the parameters applied within it, are specific to this price control.

6.2 Margin requested by SEMO

SEMO Submission Summary:
In their submission, SEMO argued that the regulatory framework which pertained in SEM is not suitable for SEMO to be financeable in I-SEM. The two main reasons were;

1. The assets to deliver I-SEM are not assets of the Market Operator but of the System Operator, which means that the Market Operator does not have an opening Regulatory Asset Base and will have a relatively low RAB in future.

2. The scale and extent of differentials between receipts and payments in the market, including Capacity Market differentials and the application of the Residual Error or other factors is also expected to increase.

Based on this SEMO requested that a margin based approach be applied for this price control as opposed to the RAB-WACC approach which has applied in previous price controls, and argued that SEMO faces a higher level of overall systematic risk than other traditional asset based utilities. SEMO requested a remuneration equivalent to a 10% margin on controllable operating costs.

SEMC Draft Determination Proposal:

As with the SEMOpx Price Control, the SEMC was of the view that as the assets that relate to SEMO will receive a return through EirGrid's and SONI's TSO RAB, this satisfies the financing requirements of EirGrid and SONI as Market Operator licensees. The rationale for this is outlined below;

1. SEMO does not have the capability to raise finances as it is not a legal person. Rather it is a joint venture of EirGrid and SONI TSOs as Market Operator licence holders. As such, the duty of financeability accrues not to SEMO, but rather to EirGrid and SONI as Market Operator licensees.

2. The capitalisation of the implementation costs via the TSO's RAB provides remuneration of the risks that the licensees face in terms of raising finance for this capital. It was the SEMC view that the financeability requirements of EirGrid and SONI had been satisfied through the application of the RAB WACC approach.

€ million	SEMO's Submission	SEMC Proposal
Management Fee (Margin) of 10% of Opex	3,629,000	No management fee should apply

At the time of the Draft Determination, the SEMC sought additional information from SEMO setting out the scale and nature of additional risks faced in I-SEM that were not addressed through this approach.

Table 6.1 Draft Determination Margin Proposal

Summary of Responses:

- Viridian supports the SEMC proposal that it is inappropriate to apply a margin as opposed to the application of a RAB-WACC approach.
- At a high level, BGE remains of the view that the RAB WACC approach remains fit for purpose for SEMO. BGE states that it is an approach used for the TSOs and SEMO and it finds it difficult to comprehend how a margin based approach might be applied and reconciled with what it describes as the monopoly and non-profit nature of SEMO.
- SEMO is of the view that the SEMO Draft Determination fails to provide an adequate level of allowances to enable SEMO's efficient operation of the business and does not provide a sustainable framework which fulfils the Commission for Regulation of Utilities and Utility Regulator's duties to enable both SONI and EirGrid as Market Operator licensees to finance their activities.
- In their response, SEMO states that the Draft Determination suggests that the SEM Committee has sought to effect this financing duty through the separate consideration by CRU and UR of the EirGrid and SONI TSO licences. They further state that the financeability of the Market Operator licensees must be considered by reference to the Market Operator licensees and to the fulfilment by those licensees of their functions.
- SEMO further states that the SEM Committee has set out no financeable framework for the SEMO business and has provided no remuneration for either the capital employed by the business or the risks and activities undertaken by it. SEMO has provided a report from KPMG LLP with their submission examining the financeability of the SEMO framework. This is based

on SEMO's view that the WACC-RAB approach is insufficient given the size of their RAB during this price control and the additional risks that they face.

- SEMO has given consideration to three areas in relation to its proposals, namely; the effect on the balance sheet and borrowing capacity of the raising of contingent debt; collection agent activities and the associated contingent and working capital requirements, and the treatment of operational risks and their effect on investor returns.
- In their response, SEMO has referenced the recent Competition and Markets Authority Determination in respect of the SONI TSO price control, which provides for a 0.5% margin on Collection Agent Revenues in the case of SONI. The components of EirGrid's revenues and the margins applied to manage working capital requirements and collection agent revenues are also referenced. SEMO argues on this basis that the principle of a margin on collection agent revenues should be applied based on revenues associated with the Capacity Market, the Socialisation Fund and Residual Error.

SEMC Consideration and Response:

The RAs and SEMC acknowledge the need to secure that SONI Ltd and EirGrid PLC, as market operator licensees, are capable of financing their market operator activities. The SEMC has ensured this requirement through the approach set out in this decision paper. It should be noted that this approach is particular to this price control and the period covered by it and cannot be seen as precedent for any future determination by the SEMC. In their submission and response to the Draft Determination, SEMO has raised a number of arguments in relation to the SEMC assessment of SEMO and its risks and financeability.

Relevant Considerations

As noted above the RAs and the SEMC must have regard to the financeability of licensees, including the relationship of SEMO's financeability to the financing of SONI and EirGrid TSOs and also SEMOpx. Within this price control we set out a number of relevant linkages that need to be considered.

The establishment costs associated with SEMO in I-SEM will be capitalised and placed on the TSOs' respective RABs as per the agreed proportions, earning a return on and of capital at the prevailing WACCs of the TSOs. This was requested by EirGrid and SONI and agreed by SEMC in the Revenue Recovery Principles Decision Paper (SEM-17-044) in 2017. The return to be earned over a five year depreciation period on these establishment costs has been calculated by the RAs along with an estimated breakdown of assets related to SEMO within the overall costs.

To date, in the context of SEM and its associated risks, EirGrid and SONI have supported revenue mismatches through the provision of contingent capital facilities and standby debt supported by company balance sheets. In SEM, letters were provided by UR and CRU indicating that the costs of providing these standby facilities, the amounts drawn down under these facilities and the financing cost associated with any funds drawn down would be recoverable by adjustments to the EirGrid TUoS and SONI SSS tariffs.

SONI Ltd and EirGrid plc are in the process of putting in place a contingent debt facility for I-SEM to manage cash flow imbalances and increased volatility across a number of areas relating to both the TSOs and MOs. The risks and management associated with the SEMO price control are discussed below.

Risks identified by SEMO

The SEM Committee has previously referred to the ex-ante revenue cap regime set out in this paper in the sections on allowed opex and capex above, which includes a number of provisions to mitigate risks faced by SEMO, including the application of a k-factor.

SEMO argued that the RAB/WACC approach is not enough to remunerate SONI and EirGrid to finance their MO activities, regardless of whether the I-SEM implementation costs related to SEMO are placed on SEMO or the TSOs' RABs, including taking account of further capital expenditure by SEMO during the price control period, which together will earn a return based on its blended regulated WACC.

SEMO referred to a number of interrelated factors as justification for its proposed revised margin approach:

1. SEMO argues that there is no provision for contingent equity support in the price control in respect of the underlying, though not licence based, requirement for equity support from EirGrid, which compares to the SONI PCG provision. This requirement for contingent equity, as set out by SEMO, is linked to the contingent debt being raised by EirGrid and SONI to manage increasing cash flow imbalances and risks in I-SEM.
2. SEMO has set out a number of risks which arise for I-SEM SEMO which were not a factor in SEM. These are related to the Capacity Market, the Socialisation Fund and Residual Error, and SEMO argues that it is expected to face significant exposure to cash shortfalls arising from its collection of revenues on behalf of industry participants (excluding imperfections charges). It has requested an allowance to compensate SEMO for the risks and costs associated with managing these revenues. At a high level these risks arise due to the move to tariff-based approaches in I-SEM.
3. SEMO is also of the view that there are also a number of operational risks faced by its asset light business, for example pertaining to the risk of estimating costs within a probability distribution under an ex-ante revenue allowance.

SEMO reviewed its original proposed approach of a 10% margin on controllable opex, and in its response to the SEMC Draft Determination referred to the CMA decision in relation to the SONI TSO price control referral. SEMO then proposed a margin of 0.3% on collection agent revenues based on the CMA framework and analysis conducted by KPMG, though it has noted in its submission and in subsequent discussions that this leaves two of the three issues above (1 and 3) unaddressed.

SEMO has set out these collection agent revenue risks as follows;

- Cost and volume forecast risks to cost recovery through tariffs
- Short term funding exposure if monthly demand volumes are different to the profiles assumed.
- Aggregate demand volume assumptions and assumptions in relation to outage rates and interconnector flows.

Collection Agent Revenue Risks
Capacity payments will be made to generators on a straight line basis throughout the year. However, the price for capacity charges is based on the daytime demand forecast, which is seasonal. As a result, there will be surpluses of capacity payments over the winter months when demand is high, and shortfalls during the summer months when demand is low. Daytime demand is also more volatile than total demand, so forecasting errors are expected to be high. SEMO estimates that its cash flow exposure due to its management of capacity payments is €13.5 million.
SEMO collects the Residual Error Charge from suppliers to pay for the cost of residual energy. The Residual Error Charge is calculated based on Residual Error Volume forecast, Imbalance Settlement Price forecast and demand forecast. SEMO estimates a likelihood of up to a 5% error in forecasting the Residual Error Volume, 10% in the Imbalance Settlement Price and 2% in forecasting demand. Based on this it has estimated a potential cash flow exposure of €11.7 million.
There will be a fixed amount charged to suppliers monthly to build up an amount to fund any gap in Capacity difference payments paid by generators. There is no view of the potential size of this fund yet, but for the purpose of this exercise it is assumed that the fund will be 5% of the capacity pot, i.e. €15 million. SEMO has estimated a potential cash flow exposure of €450,000 for the Capacity Difference Socialisation Fund.

Table 6.2 Collection Agent Revenue Risks

SEMO's revised submission

The SEMC has noted that a return is being earned in relation to the capitalised I-SEM implementation costs related to SEMO, and that a return will be earned by SEMO on any future Capex spend. SEMO contends that there may be significant business activities that are not linked to the capital invested and investors also require a profit to compensate for the risks arising from these activities.

The SEM Committee considers that these risks are primarily cash flow timing risks, in that any under-recovery (or over-recovery) that SEMO experiences will ultimately be corrected via increases (or reductions) in the tariffs that SEMO levies. SEMO's position, as the SEM Committee understands it, is that it also requires cost allowances for contingent equity capital. The SEMC considers that this contingent capital can be considered in two parts, as follows.

First, there is an explicit requirement under the licence issued to SEMO by the UR that SEMO must procure a parent company guarantee (PCG) from EirGrid with a value of £10m. In this instance the SEMC decided to allow for a return of €300,000 per annum in the new SEMO price control for the PCG, as per previous price controls. This is discussed in section 6.3 of this paper.

Second, SEMO has argued that it would not be possible for EirGrid/SONI to obtain its new bank facility without equity support and that this support and the cash flow risks that it faces warrant the award of a 0.3% margin on forecast Capacity Market, Socialisation Fund and Residual Error amounts. While the CMA did allow SONI a margin on 'collection agent' revenues of 0.5%, the CMA was also clear that a margin on revenue collection activities would be *in place* of a facility fee, that this allowance would cover the cost and risk associated with managing these activities and that it would be for SONI to determine the appropriate balance of internal and external sources of finance.

Treatment of Financeability in EirGrid and SONI TSO Price Controls

SEMO has proposed the application of a 0.3% margin on collection agent revenues and argues that it faces risks regardless of where I-SEM implementation costs related to SEMO are placed and the return on its RAB via the WACC.

In terms of regulatory precedent in this area, two close comparators are the EirGrid TSO and SONI TSO price controls. The EirGrid TSO price control provides a TUoS margin and a provision for working capital in addition to a return on the TSO's RAB at the prevailing WACC. Following the CMA final determination, a margin of 0.5% will apply to SONI's collection agent revenues on SSS, Ancillary services, and SEMO Imperfections Charges revenues, in addition to SONI's uplifted WACC to reflect high operational gearing. Both TSOs have been reviewed as potential comparators to SEMO in this instance.

It is useful to consider relevant benchmarks through the SONI and EirGrid TSO price controls in relation to financeability, given that SEMO argues that these risks are new for I-SEM and were not faced by SEMO previously.

EirGrid TSO Case

In the case of EirGrid, EURIBOR interest is applied to k factor adjustments and a return is provided on working capital for some revenues, with a margin on revenues collected for others. This interest rate adjustment provides partial compensation for the cost of financing working capital required due to income variations.

In principle, timing differentials between when costs are incurred and when payment is received give rise to requirements for working capital, however there are a number of mitigating factors to this. These include the working capital benefits which the TSO receives due to the time delay in paying its own creditors, the working capital benefits the TSO receives due to the seasonal profile of tariffs revenues, and the fact that advance payments to the TSO can be made.

Working Capital requirements associated with volatile costs arising from external opex are remunerated through the following formula;

*External opex*20%*WACC+External opex*0.5% margin*

Working Capital requirements associated with volatile costs arising from dispatch balancing are remunerated through the following formula;

*DBC*20%*WACC*

EirGrid is also remunerated for its collection agent role with a margin on total revenues excluding DBC costs. This margin was set at 0.5% of TUoS revenues in PR4 for income variation, however this was 0.25% on PR3 (it was adjusted in PR4 due to inconsistencies identified in the calculation of operating leverage in the consultation paper and this will be fully reviewed in PR5)[15]

[15] CER15296 (Decision on TSO and TAO transmission revenues) states; 'EirGrid made a detailed submission on the issue of its financeability, raising concerns over the operating leverage calculation and the need to capture

SONI TSO Case

SONI levies charges on both generators and suppliers to meet the obligations it has to pay others. These significant industry revenues are collected on behalf of others and may expose SONI to cash flow or liquidity risks.

Following on from the CMA's recent determination, within the SONI price control a 0.5% margin on collection agent revenues will apply. The CMA's determination was in part based on a comparison to the approach followed by the CRU as noted above.

In addition to this, the SONI price control provides LIBOR plus 2% interest on K-factor adjustments, the cost of the SEMO bank facility, a return on the PCG and an uplift to SONI's WACC for high operational gearing.

Building Block	SONI	EirGrid
WACC (pre tax)	5.90%	4.95%
Operational Gearing	WACC includes adjustment for operational gearing	Separate Operational Gearing adjustment; in PR4 the margin on EirGrid's TSO collection agent revenues was increased by 0.25% instead of uplifting the WACC to reflect high operational gearing
PCG	2.5% of PCG	N/A
Collection agent revenue margin	0.5% for relevant SONI revenues (Imperfections Charges, TUoS and Other System Services)	0.25% for TUoS only (plus 0.25% to account for operational gearing in PR4)
Working Capital Remuneration	N/A	External Opex*20%*WACC + Dispatch Balancing Costs*20%*WACC, which equates to approximately 1% margin
Contingent Capital Debt Facility arrangement fee and annual commitment fee	Included in collection agent revenues allowance (the CMA stated that this should be managed by SONI as part of their collection agent revenues)	Separately provided for
Building blocks to apply to SONI MO and EirGrid MO	Collection agent revenue margin or 0.25%	Collection agent revenue margin or 0.25%

Table 6.3 SONI and EirGrid TSO financeability comparison

EirGrid's enterprise value. Following a review of this submission the CER has made an adjustment to EirGrid's working capital margin to account for inconsistencies in the calculations carried out by Europe Economics. However, the CER does not consider that the model itself should be revised to include an assessment of EirGrid's 'enterprise value'.'

SEMC Response and Decision:

The introduction of I-SEM has required a re-design of the market arrangements and a reconfiguration of the market operator and the creation of a power exchange for the day ahead and intra- day markets, to be carried out by SEMOpx under specific license conditions within the EirGrid and SONI MO licenses. The SEM Committee published a SEMO price control Decision Paper in August 2016 covering the transitional period from the SEM to the Integrated Single Electricity Market (I-SEM), which relates to SEM related costs only. This price control Decision Paper covers the period commencing 1 October 2016 through to the end of the Single Electricity Market decommissioning period on 31 March 2019. This price control determined that SEMO will be remunerated for 100% of their residual Regulatory Asset Base (RAB) value as at the end of the SEM decommissioning period, through an appropriate tariff mechanism in the I-SEM.

The SEM Committee and TSOs agreed that the capital costs of implementing I-SEM (incurred by the TSOs, SEMO and SEMOpx) will be placed on the TSOs RAB, allocated between the EirGrid and SONI licenses on a 75:25 basis, and receive the appropriate regulated WACC pertaining.

WACC

The price control of the Utility Regulator on SONI for 2015-2020 determined a WACC of 5.9%, and the CRU's on EirGrid TSO and TAO 2016 to 2020 determined a WACC allowance of 4.95%.

WACC Rate	Specified Proportion	WACC Rate	Blended Rate for SEMO
EirGrid Transmission system Operator	75%	4.95%	5.19%
SONI Transmission System Operator	25%	5.9%	

Table 6.4 TSO and SEMO WACC levels

Any incremental Capex placed on SEMO's RAB during this price control will therefore be subject to a Weighted Average Cost of Capital (WACC) using the WACC rates from the SONI and EirGrid System Operator price control in line with the specified proportions. The current blended WACC is 5.19%

As per the 2016-19 SEMO price control any assets placed on SEMO's RAB will be depreciated on a straight line basis over a five year period. In the 2016-19 price control it was decided that SEMO should be remunerated for its residual RAB as it stands at the end of the 2016-19 price control, through an appropriate tariff mechanism in I-SEM.

The costs of establishing the new market and of new systems, including balancing market and NEMO systems, will be recovered through these capitalised costs and associated return on capital. The operational costs of pre-go live I-SEM expenditure will be recovered in this and the SEMOpx price controls as set out in the first column of the Opex tables in section 4 of this paper.

The SEM Committee considers that the necessary financeability of SEMO must take into account its licensed activities, including that of the license conditions in the EirGrid and SONI MO licenses dealing with its NEMO activity, previously considered in the SEMOpx price control (SEM-17-096). In its price control decision paper on SEMOpx the SEM Committee noted that there existed a number of measures to mitigate cost uncertainty including risks associated with regulatory and legislative changes; changes to go live; risks associated with SEMOpx's market share, level of participation and volume of trading activity, additional costs for minimum volumes in auctions and uncertainty in relation to third party costs. It was noted that SEMOpx was of the view that third party costs would not change significantly during the price control period.

The SEMOpx price control decision paper set out that any differences in efficient costs approved by the SEM Committee may be recovered through a correction factor mechanism. The SEMC was also of the view that the methods set out for correcting any correction factor that may arise at the end of the SEMOpx designation period provided certainty for the price control. The SEM Committee therefore rejected the SEMOpx submission that a margin of 10% of the opex cost was appropriate, given the allowed revenue approach of the price control and the comprehensive risk mitigation and reward framework introduced.

In its original price control submission a margin of 10% on total controllable operating costs was proposed by SEMO plus provision of any working capital facility. It also proposed an EirGrid parent company guarantee (PCG) to be remunerated as with the SONI PCG but scaled up to account for the 75% EirGrid proportion.

In its Supplementary Submission SEMO requested €1.1m - €1.4m per annum made up of various elements of remuneration including the SONI PCG and remuneration for collection agent revenues.

The SEM Committee considers that the regulatory framework set out above in relation to SEMOpx is applicable to SEMO as a whole, including consideration of its SEMOpx activities, and that the specific provisions of the ex-ante revenue cap regime set out in this price control decision include a number of provisions to mitigate risks faced by SEMO, including the application of a k-factor.

The SEM Committee nevertheless recognises that the remuneration of the SEMO and SEMOpx assets that are necessary for their role in I-SEM, which are included in the I-SEM implementation costs and through which a blended regulatory return will be received, cannot be considered in this price control period to provide adequate remuneration for the risks arising from the performance of the activities required within the SEMO licence, in particular given the transition to I-SEM

The SEM Committee has therefore looked at the various elements proposed or referenced by SEMO in its price control submission and the responses to the Draft Determination as follows:

- SEMO has set out a number of risks which arise for I-SEM SEMO which were not a factor in the SEM. These are related to the Capacity Market, the Socialisation Fund and Residual Error Fund. SEMO has argued that it may be expected to face significant exposure to cash shortfalls arising from its collection of revenues on behalf of industry participants. It has requested an allowance to compensate SEMO for the risks and costs associated with managing these revenues. SEMO has set out these risks and the nature of these has been set out above in the box 'Collection Agent Revenue Risks' on page 37.

- In terms of regulatory precedent in this area, the SEM Committee has noted two close comparators in the SONI TSO and EirGrid TSO price controls. Following the CMA final determination, a margin of 0.5% will apply to SONI's collection agent revenues on SSS, Ancillary services, and SEMO Imperfections Charges revenues, in addition to SONI's uplifted WACC to reflect high operational gearing. The EirGrid TSO price control provides a TUoS margin and a provision for working capital in addition to a return on the TSO's RAB at the prevailing WACC. The risks related to the Capacity Market, Socialisation Fund and Residual

Error have been categorised by EirGrid and SONI as Low (with the exception of year 1 of the Capacity Mechanism), with no potential for monetary loss arising from the capacity difference socialisation fund. The SEM Committee does not therefore consider that the level of risk incurred by SEMO is as high as that incurred for example in the management of Dispatch Balancing costs. SEMO's financial advisors KPMG have supported a margin of 0.3%, which is also consistent with the 0.5% determined by the Competition and Markets Authority (CMA) final determination from an estimated range of 0.25%-5%.

- Given the potential for an initial period of uncertainty in the operation of certain aspects of the ISEM, the SEM Committee considers that a margin of 0.25% is appropriate in this case. This will be reviewed at the next price control, given that any risk will have been mitigated through experience of the performance of the new I-SEM. This is based on both the precedent from EirGrid TSO's price control, the range of revenue collection agent margins considered by the CMA for SONI, and the SEMC assessment of the cash flow risks identified by SEMO. The SEM Committee is also cognisant that in relation to the potential risks incurred by SEMO in relation to revenue collection activities, these will be reduced through a contingent capital facility, which is yet to be established, and may be further limited by a modification to the I-SEM Trading and Settlement Code which will cap the exposure of EirGrid and SONI.

- The SEM Committee notes, however, that the estimate of the cash flow risks submitted by SEMO as part of their response to the Draft Determination are limited by availability of actual data on the new tariffs which are being introduced in I-SEM, and considers it prudent to schedule a review of these risks and associated collection agent margin following the first 16 months of the SEMO price control. This review will not alter the amount allowed to SEMO for this price control, but will be used to assess the suitability of this approach ahead of the next SEMO price control period.

- A margin of 0.25% applied to the estimated total revenues of the Capacity Market, the Socialisation Fund and Residual Error of €355m would provide an amount of €887,500 per annum to SEMO. This amount will be amended to reflect actual levels once established.

- A final element of capital that impinges on the risks for which remuneration should be considered is the submission by EirGrid and SONI of regulatory support for a contingent capital facility that would address the potential cash imbalances that might arise in I-SEM and which have been referenced and discussed above. The scale of the facility and associated costs have not yet been determined. The SEM Committee is of the view that the establishment costs for the facility will be treated in the same manner as the ISEM implementation costs in the TSO's RABs and the ongoing costs will be implemented in line with the specific rules for such cost recovery pertaining in each of the SONI TSO and EirGrid TSO price controls.

Margin on collection agent revenues					
	May 18-Sep 18	Oct 18- Sep 19	Oct 19-Sep 20	Oct 20 - Sep 21	Total
Estimated total revenues	€147,920,000	€355,000,000	€355,000,000	€355,000,000	€1,212,920,000
SEMO submission 0.3% margin	€443,760	€1,065,000	€1,065,000	€1,065,000	€3,638,760
SEMC Decision 0.25% margin	€369,800	€887,500	€887,500	€887,500	€3,032,300

Table 6.5 Margin SEMC Decision

6.3 Parent Company Guarantee

Submission Summary

There is a requirement for EirGrid Group to put in place a Parent Company Guarantee (PCG) which has been placed in the SONI Market Operator licence. As part of the 2016-19 price control the SEM Committee determined an allowance of €0.300 million per annum as being appropriate remuneration for SEMO to facilitate their licence requirements in this regard. SEMO requested the same amount for this Price Control in respect of the PCG within the SONI market operator licence.

An additional contingent equity allowance of €900,000 was also requested for the provision of contingent equity in respect of the EirGrid Market Operator licence. Whilst there is currently no equivalent licence provision in respect of EirGrid, SEMO claims that the underlying requirement still exists and, since SONI represents 25% of the joint venture, the overall cost of an equivalent EirGrid PCG would amount to €0.900M per annum.

This gives a total allowance requested of €1.2m per annum for the Parent Company Guarantee/ Contingent Equity. In their submission, SEMO stated that the scale of contingent capital exposure is increasing.

SEMC Draft Determination Proposal

In the Draft Determination, the SEMC set out the view that there are differences between the SONI and EirGrid Market Operator licences. In the first instance, the requirement for a PCG is a SONI Market Operator licence requirement, due to the nature of the ownership structure by EirGrid Group. In the last SEMO price control the SEM Committee determined that an allowance of €300,000 per annum was appropriate remuneration to facilitate this PCG, based on an assessment of a fair value of the requirement to have in place the PCG and the likely cost of procuring such a facility.

There is no requirement in the EirGrid Market Operator licence to provide a Parent Company Guarantee. As such, at the time of the Draft Determination, the SEMC did not see what rationale there was for the allowance of €900,000 to be included for EirGrid; an allowance which has not been required in previous SEMO Price Controls.

The SEMC is cognisant that the level of contingent capital for EirGrid and SONI will rise in I-SEM compared to SEM, in particular in the early years of the new market. However, this aspect may be covered by contingent capital in the form of credit facilities that EirGrid and SONI will have on standby. The decision relating to the recovery of this will be made as part of finalisation of a contingency capital review which is being carried out by the RAs. It should be noted that the level of contingency capital (as debt) that the TSOs will hold in I-SEM compared to the amount required in SEM has been subject to separate discussions between the RAs and EirGrid/SONI.

Parent Company Guarantee and Contingent Equity*						
	Pre Go Live	Sep-18 4Mths	Sep-19 12Mths	Sep-20 12Mths	Sep-21 12Mths	Total
SEMO submission - PCG	-	€100,000	€300,000	€300,000	€300,000	€1,000,000
SEMO submission – contingent equity	-	€300,000	€900,000	€900,000	€900,000	€3,000,000
SEMC Proposal*	-	€100,000	€300,000	€300,000	€300,000	€1,000,000

Table 6.6 PCG and Contingent Equity SEMO submission

* At the time of the Draft Determination, the SEMC acknowledged the remuneration provided for the PCG in past price controls and noted the lack of any requirement in the EirGrid licence to provide a Parent Company Guarantee, but did not provide a firm minded to position on this issue.

Summary of Responses:

- BGE supported the PCG of €300,000 as request by SEMO, but would welcome additional insight into the additional request of €900,000 and discussions between the SEMC and SEMO in relation to this. In general, BGE is of the view that SEMO should be adequately funded and protected from financial risk.
- In their response, SEMO referenced the treatment of the Parent Company Guarantee in the Competition and Markets Authority Determination on the SONI TSO price control, which provided for a return of 1.7%-3.1% on the Parent Company Guarantee. SEMO stated that in calculating the incremental cost of the SONI TSO Parent Company Guarantee the CMA assumed a provision of 2.5% per annum for the SONI Market Operator. (SEMO has presented a report carried out by KPMG, and commissioned by them, in support).

SEMC Response and Decision:

SEMO has argued that there is an equivalent claim for equity support to SEMO from EirGrid in line with the SONI PCG currently remunerated through the SEMO price control. However the SEM Committee considers that the requirement for a PCG is a SONI requirement, due to the nature of the ownership structure by EirGrid Group, and that the PCG allowance therefore arises from the SONI licence requirement placed in its MO licence. There is no requirement in the EirGrid licence to provide a Parent Company Guarantee. As such, the SEMC does not see what rationale there is for the allowance of €900,000 to be included for EirGrid.

The SEM Committee has previously determined that an allowance of €0.300 million per annum as an appropriate remuneration for SEMO to facilitate the requirements of the licence in regard to the SONI Parent Company Guarantee. This amount has been determined based on an assessment of the fair value of the requirement to have in place the Guarantee. This remuneration has been calculated from the £10m guarantee remunerated at 2.5%. The SEMC is of the view that it will not alter these arrangements at this point. However as there is no requirement for a Parent Company Guarantee in the EirGrid MO licence, SEMO's request for an additional €900,000 per annum has not been met.

In the 2016 to 2019 SEMO price control it was decided that the SONI Market Operator (MO) licence requirement for contingent capital will be remunerated at a value of €0.3 million per annum for the remainder of the SEM period, which will fall, in line with SEMO's reduced working capital risk, to a level of €0.06 million per annum during the SEM resettlement period and a level of zero during the

SEM decommissioning period ending on 31 March 2019. The calculation of remuneration of the PCG below under this I-SEMO price control therefore includes this already allowed remuneration of the PCG.

Separately, the RAs have progressed discussions with EirGrid and SONI on the level of contingent capital that will be required in I-SEM to manage a range of risks in the market. To date, in the context of SEM and its associated risks, EirGrid and SONI have supported revenue mismatches through contingent capital facilities and standby debt supported by company balance sheets. There is an existing facility of €50m for EirGrid and £12m facility for SONI.

SONI and EirGrid have proposed a higher level of contingent capital required in I-SEM which is being reviewed by the RAs, and the TSOs are currently in the process of pricing the fees for such a facility. A limitation of SEMO exposure has also been raised separately at the Trading and Settlement Code Modifications Committee.

Summary of Decision:

Parent Company Guarantee and Contingent Equity						
	Pre Go Live	**Sep-18 4Mths**	**Sep-19 12Mths**	**Sep-20 12Mths**	**Sep-21 12Mths**	**Total**
SEMO submission - PCG	-	€100,000	€300,000	€300,000	€300,000	€1,000,000
SEMO submission – contingent equity	-	€300,000	€900,000	€900,000	€900,000	€3,000,000
SEMC Decision	-	€100,000	€300,000	€300,000	€300,000	€1,000,000

Table 6.7, PCG and Contingent Equity SEMC Decision

7 Final Revenue Decision

SEMO has requested a total allowance of €42,908,000 for the duration of this price control, as set out in table 7.1.

SEMO submission	**Pre Go-Live**	**May '18 to Sep '18**	**Oct '18 to Sep '19**	**Oct '19 to Sep '20**	**Oct '20 to Sep '21**	**Total**
2017 monies	€	€	€	€	€	**€**
Payroll	378,000	1,604,000	4,880,000	5,105,000	5,211,000	17,178,000
IT & Telecommunications	111,000	918,000	2,753,000	2,384,000	2,303,000	8,469,000
Facilities & property management	64,000	273,000	818,000	838,000	841,000	2,834,000
Recruitment, HR and Admin costs	21,000	109,000	326,000	344,000	337,000	1,137,000
Corporate Costs	54,000	268,000	805,000	824,000	827,000	2,778,000
Finance and Regulation costs[1]	0	206,000	620,000	570,000	545,000	1,941,000
Total Opex	628,000	3,378,000	10,202,000	10,065,000	10,064,000	34,337,000
PCG and Contingent Equity	0	400,000	1,200,000	1,200,000	1,200,000	4,000,000
Margin	0	338,000	1,020,000	1,007,000	1,006,000	3,371,000
Total Finance	0	738,000	2,220,000	2,207,000	2,206,000	7,371,000
Capex			400,000	400,000	400,000	1,200,000
Total Capex			400,000	400,000	400,000	1,200,000
Total	**628,000**	**4,116,000**	**12,822,000**	**12,672,000**	**12,670,000**	**42,908,000**

Table 7.1 SEMO Submission

The SEMC is allowing an efficient cost of €37,651,829 for the duration of this price control. The components of this revenue allowance are set out below.

SEMC Decision	**Pre Go-Live**	**May '18 to Sep '18**	**Oct '18 to Sep '19**	**Oct '19 to Sep '20**	**Oct '20 to Sep '21**	**Total**
2017 monies	€	€	€	€	€	**€**
Payroll	347,760	1,480,867	4,597,175	4,751,850	4,765,950	15,943,602
IT & Telecommunications	111,000	918,000	2,753,000	2,384,000	2,303,000	8,469,000
Facilities & property management Recruitment, HR and Admin costs Corporate Costs	136,220	637,939	1,912,818	1,968,554	1,967,396	6,622,927
Finance and Regulation costs[1]		195,000	597,000	547,000	445,000	1,784,000
Total Opex	594,980	3,231,806	9,859,993	9,651,404	9,481,346	32,819,529
PCG and Contingent Equity		100,000	300,000	300,000	300,000	1,000,000
Margin		369,800	887,500	887,500	887,500	3,032,300

Total Finance	0	469,800	1,187,500	1,187,500	1,187,500	4,032,300
Capex			400,000	200,000	200,000	800,000
Total Capex			400,000	200,000	200,000	800,000
Total	**594,980**	**3,701,606**	**11,447,493**	**11,038,904**	**10,868,846**	**37,651,829**

Table 7.2 SEMC Final Revenue Decision

8 Key Performance Indicators

A range of performance standards will apply to SEMO given its role in the I-SEM design. These KPIs will apply to both market participants and for the purpose of facilitating the RAs/SEMC Market Surveillance functions. The SEM Committee's view with respect to key performance indicators to apply to SEMO are outlined in this section.

Submission Summary:

In its submission, SEMO proposed retaining aspects of its current KPIs in the new I-SEM market, with revised weightings, targets and upper bounds. In its submission, SEMO proposed the following eight KPIs;

SEMO KPIs
Invoicing
Credit Cover Increase Notices
SEMO Resettlement Queries
General Queries
System Availability
Support the timely publication of key market information
Surveying and acting on participant service levels
Customer training/stakeholder engagement

Table 8.1, KPIs proposed by SEMO

A number of these KPIs are related to the KPIs which have previously applied to SEMO in SEM. The main difference relates to SEMO's reporting requirements and differences in the key market information it will need to publish in I-SEM. SEMO has also proposed an incentive equal to 4% of the total SEMO Opex revenue amount for this price control.

SEMO also proposed the following assumptions to apply to the KPIs;

1. Where applicable each metric should be delivered within one hour of the targeted time;
2. External factors outside the Market Operators direct control are excluded e.g. Limited Communication failure by a Market Participant, late provision of data by System Operators or the Meter Data Provider, Government policy changes, Regulatory Authorities' policy changes etc.
3. The first two weeks after a System Release are excluded from the annual target.
4. A measure is taken at the end of each month using the average value of each KPI over that period. Should the KPI be achieved in the given period the reward for that month should be earned to incentivise SEMO to perform should it not deliver against a KPI in any particular month during the year.

In their submission SEMO proposed that Performance Incentives should be suspended for the first six months of the market based on their experience in the initial SEM period in 2007 where the amount of helpdesk queries and emergency market releases was significantly higher than under normal operations.

SEMC Draft Determination Proposal:

The SEMC proposed additional KPIs related to provision of timely, accurate information and the availability of information in a format requested by the RA's/SEMC in order to enable them to carry out their market surveillance role.

The SEMC also set out the importance of the provision of accurate and timely provision of public and market participant user data to the MMU within the RAs. This will entail a range of regular reporting requirements imposed on SEMO.

The SEMC also agreed in principle that a certain bedding in period may be required for some KPIs following Go-Live. A summary of the SEMC proposals in relation to KPIs as per the Draft Determination is shown below. Stakeholders were invited to comment on the applicability of these indicators and their targets and weightings, along with SEMO's proposal for a bedding in period from market Go-Live to apply to the KPIs.

SEMO KPIs	Description	Review Period
Invoicing	**T**he percentage of occurrences where invoices to participants are published on time	
Credit Cover Increase Notices	The percentage of occurrences where credit cover increase notices are published on time.	
SEMO Resettlement Queries	The time taken to resolve queries from market participants which have identified errors in settling the market which are attributed the SEMO's operations and processes	
General Queries	The percentage of occurrences where a General Query is not addressed within 20 business days.	
System Availability	Availability of central market systems on a 24 hour basis Monday to Friday	
Support the timely publication of key market information	Publication of market information in a timely manner, including for example; Forecast Imbalance, Four Day Rolling Wind Power Unit Forecast by Unit, Net Imbalance Volume Forecast, Accepted Bid Quantity, Accepted Offer Quantity, Anonymised Inc/Dec Price Quantity Pairs and Daily Load Forecasts.	1 year after Go-Live
Customer training/stakeholder engagement		
I-SEM Data Publication Guide	Obtain necessary approval and publication of I-SEM data Publication Guide by January 2018	
Website availability for Go-Live	A fully functioning website will be in place for market Go Live. This will include but not limited to all data outlined in the I-SEM data publication guide being made available to the public.	
Data provision to the RAs	Timely reporting of accurate information to the RAs in the requested format to enable the RAs/SEMC to monitor the market effectively.	1 year after Go-Live
Automated transfer of data reports to the MMU IT systems	Configure and maintain the systems such that the MMU and other users are able to smoothly automate (from client side) the accessing of data reports from SEMO. For clarity, the MMU does not expect to be given user access to the SEMO IT infrastructure.	

Table 8.2 KPIs proposed in Draft Determination

The SEMC set out its view that proposed additional indicators for publication of key market information and data provision to the RAs could be reviewed following one year of market operation to assess data requirements for both market participants and the RAs.

Summary of Responses:

- In response to SEMO's proposed KPI assumptions, that 'each metric should be delivered within one hour of the targeted time', 'late provision of data by TSOs should provide an exclusion' and 'the first two weeks after a system release are excluded' Viridian is of the view that any KPI should be measured against the target and should not provide for any buffer and that any exclusion related to late data provision by the TSOs create a conflict of interest and should be avoided. Viridian is also of the view that the first two weeks after each release are the most critical and should have a higher weighting rather than being excluded.
- Viridian does not agree with the proposed KPIs around provision of data to the RAs Market Monitoring Unit. They are of the view that the RAs should be drawing from the same dataset and interfaces as provided to the wider market.
- In their response, Viridian states that the KPI related to the website availability at go-live is not relevant, given that it should be available at go-live and not after the price control commences.
- In relation to SEMO's proposal that certain KPIs should be suspended for the first six months of the market, Viridian is of the view that KPIs should be implemented from day one of the market and if they are to be delayed there should be a further consultation with market participants on the most applicable KPIs.
- BGE believes that the application of KPIs for SEMO in I-SEM is essential to ensure the smooth and efficient running of the balancing and capacity markets and have provided a range of specific comments on each KPI.
- In relation to the KPI on invoicing, BGE supports the continuation of this KPI in I-SEM. BGE further suggests that where any delay in invoice publication occurs, a corresponding delay in payment due dates should apply. BGE does not believe that an exemption from the invoicing KPI for the initial six months post go-live is appropriate and alternatively suggests a time limited tolerance of up to one hour to apply to the KPI in the first six months of the market. BGE also welcomes the retention of a target level of 97% for this KPI.
- BGE believes that the KPI associated with system availability is one of the most important KPIs for SEMO in I-SEM and supports a measurement of availability 24/7 Monday to Sunday. BGE is also in favour of the current target level of 99.5%.
- In relation to the KPI for the timely publication of key market information, BGE is of the view that all data reports requiring publication by SEMO for the balancing and capacity markets within certain timelines should be the subject of this KPI. BGE is in favour of a target of 99% as applied to current SEM ex-ante and ex-post pricing information.
- BGE supports the retention of the credit cover increase notices KPI and considers a target of 99% as appropriate. It also supports the SEMO resettlement queries KPI.
- In terms of the general queries KPI, BGE suggests that 20 business days may be reasonable in the early months of the new market but that consideration should be given to reducing the metric to 15 days or lower.

- In their response, BGE suggest an alternative KPI to the website availability KPI, to measure the percentage of time when SEMO customers have system access to SEMO's balancing market interface without any interruption.
- BGE supports the SEMC objective of market monitoring and suggests that consideration should be given to combining the two KPIs on data provision to the RAs into one.
- BGE does not agree with full suspension of all KPIs for the first six month period post go-live and that a percentage tolerance for certain KPIs should be considered for the first six months of go-live.
- In their response, SEMO stated that it is important that the Market Operator licensees are appropriately incentivised to deliver high quality service levels. If the reward for meeting individual KPIs is small given a larger number of KPIs, there is a limited driver for the business to divert or focus resources on meeting such targets.
- SEMO is of the view that should the RAs/SEMC and industry wish to see a wider range of KPIs, the incentive pot would need to be increased.
- During any bedding in period, SEMO would welcome the opportunity to engage further with the RAs/SEMC in terms of deliverables and specific targets to apply.

SEMC Response and Decision:

The draft determination paper concerned the number of KPIs to apply, the assumptions around these KPIs, their definitions, incentive pot and any bedding in period to apply. It did not set out a view on the weightings of the various KPIs nor on the precise metrics that would apply to each KPI, against which actual performance would be measured. The SEMC considers that additional consideration is required for these, including consultation with industry to garner its views. The SEMC is of the view that further consideration is also required in order to confidently determine the specific content of the KPIs, for example the systems that are required to be available on a 24 hours basis and the particular timeframes within which data should be published. I-SEM involves additional markets and entails increased volumes of data, which will need to be considered in order that the chosen KPIs are specific and include the most significant aspects of market operation that have greatest impact on consumers. Further consultation and consideration will allow the additional canvassing of views and will benefit from the experience of market trials.

The SEMC is cognisant that KPIs in the SEM were not in place for the introduction of the new market but also aware that they are important in incentivising performance of SEMO and to the efficient operation of I-SEM. It is therefore the intention that these KPIs are in place for I-SEM go live.

The SEMC has therefore decided to defer decision on the scope and precise parameters of the KPIs applicable to SEMO and will carry out further engagement with SEMO and with industry before a final decision on these is taken. Following the engagement carried out as part of the SEMO price control process the SEMC has some initial views that will inform this further consultation and these are set out below.

KPI Assumptions

In terms of the assumptions to the KPIs proposed by SEMO, the SEMC has been minded to continue the majority of the assumptions that applied in the previous price control, including the metrics themselves and provision that the metrics be delivered within one hour of the targeted time. At this point the SEMC is minded to agree with respondent's views that the first two weeks after a system release should not be excluded from the annual target given the possibility that there may be a large number of system releases in the initial period from market go live.

Viridian and BGE both raised the issue of any exclusion related to late data provision by the TSOs, which could create a conflict of interest. The SEMC notes this concern, and while this is outside of SEMO's control the SEMC is minded not to allow any exemption of responsibility to deliver on the KPIs arising from delay, the responsibility for which rests with the TSO.

In terms of applicable metrics to be delivered within one hour of the targeted time, Bord Gáis Energy is of the view that this assumption is only appropriate for the invoicing KPI and ex-post data publications as part of the 'timely publication of key market information' KPI. BGE also proposes that this assumption should not apply to the credit cover increase notices given the time periods in question and the impact. The SEMC currently considers that delivery of metrics within one hour of the targeted time will apply in the first instance, pending further review.

Based on this, the current assumptions applying to the KPIs are set out below;

1. Where applicable, metrics should be delivered within one hour of the targeted time.
2. External factors which are demonstrably outside of the Market Operator's direct control are to be excluded e.g. Limited Communication failure by Market Participant, late provision of data by the Meter Data Provider, Government policy changes, Regulatory Authorities' policy changes etc.;
3. In terms of assessing the KPIs, a measure is to be taken at the end of each Quarter using the average value of each KPI over that period;
4. The KPI incentive pot will be set at 4% of total OPEX revenue for each year. Any KPI reward will be recovered through an adjustment to the K-Factor.

Number of KPIs

Based on the responses received, the SEMC is minded to introduce 8 Key Performance Indicators for SEMO for I-SEM, aimed at improving performance, promoting customer service, increasing efficiencies and delivering value to customers. Based on Viridian's comments regarding the provision of data to the RA's/SEMC MMU and to the wider market, the KPI in relation to this has been amended to provide a requirement for timely and accurate market information to be available in a format that is accessible to both the RAs *and* market participants.

Viridian and Bord Gáis Energy were both of the view that the proposed KPI for website availability for Go-Live was not relevant. This KPI has been amended as per Bord Gáis Energy's suggestion to revise the indicator in terms of website availability *from* Go-Live.

Bord Gáis Energy supports the KPIs on Invoicing, Credit Cover Increase Notices, system availability and publication of key market information. To clarify, the draft determination contained an error in relation to system availability, with the proposed KPI related to Monday to Friday. This should have read Monday to Sunday.

SEMO is of the view that if the number of Key Performance Indicators is increased, the size of the incentive pot should be increased in order to incentivise SEMO to meet its targets. In previous SEMO price controls, KPI incentive pots have increased, for example to account for increased targets related to KPIs. However given that 8 KPIs will apply for this price control the SEMC is not currently of the view that this would be appropriate.

Bedding in period for KPIs

In their submission, SEMO proposed that Performance Incentives should be suspended for the first six months of the market based on their experience in the initial SEM period in 2007, where the amount of helpdesk queries and emergency market releases was significantly higher than under normal operations. The SEMC agreed in principle that a certain bedding in period may be required for some indicators and welcomed market participant's views on the issue.

Both Viridian and Bord Gáis Energy are not in favour of a suspension of any KPIs during the first six months of I-SEM, while Bord Gáis Energy proposed that a percentage tolerance for certain KPI's should be considered initially. The initial views of the SEMC are set out in Table 8.3 below.

SEMO KPIs	Description	Changes after first six months
Invoicing	The percentage of occurrences where invoices to participants are published on time	
Credit Cover Increase Notices	The percentage of occurrences where credit cover increase notices are published on time.	
SEMO Resettlement Queries	The number of upheld formal queries from market participants which have identified errors in settling the market which are attributed the SEMO's operations and processes. Correction of such errors is completed in either the scheduled Resettlement (M+4 and M+13) or in an ad hoc Resettlement. Measurement of this KPI is related to the number of SEMO upheld query incidents and Resettlements per Quarter.	In the first six months, the lower bound will be 15 upheld queries incidents per quarter, while the upper bound will be 10 upheld queries. After six months this will revert to a lower bound of 9 upheld queries per quarter and an upper bound of 5 upheld queries per quarter.
General Queries	The percentage of occurrences where a General Query is not addressed within 30 business days.	This will change to 20 business days
System Availability	Availability of central market systems on a 24 hour basis Monday to Sunday. This is the ratio of the time systems are said to be in a functioning condition to the total time it is required to be available.	
Timely publication of key market information	Publication of ex-ante and ex-post market information in a timely manner relating to the capacity and balancing markets, as set out in the Trading and Settlement Code and I-SEM Data Publication Guide. The target refers to the percentage of occurrences where reports are published on time.	There will be a provision for a review of applicable reports and reporting timelines after the first six months
Website availability	Website availability on a 24 hour basis, Monday to Sunday, from I-SEM Go-Live. This is the ratio of the time the website is said to be in a functioning condition to the total time it is required to be available.	
Timely and accurate data provision for use in public user systems	Timely posting of accurate data to the website such that the MMU and market participants are able to smoothly automate	

	(from the client side) the accessing of data reports from SEMO	

Table 8.3, Final Determination KPIs

Next Steps

The SEMC will undertake further consultation on KPIs, which will consider their specific scope and content and the weightings and targets for each KPI. This consultation will be completed and KPIs determined before I-SEM go live.

A review of the KPIs finally determined may be conducted following one year of I-SEM operation, to consider their applicability and any adjustments to the definitions, targets or weightings that need to be applied.

9. Form and Magnitude of Charges

As part of its role in the administration of the market there are charges which SEMO must levy in order to recover its allowed costs. These charges consist of:

- The accession fee
- The participation fee
- The Imperfections charge
- Market operator charges
- AOLR charges

The TSC states that the accession fee will be paid to SEMO by each applicant for accession to the TSC, to cover the costs incurred in assessing the application. Currently these fees are netted off overall SEMO costs.

In the TSC the participation fee is defined as "the fee payable with an application to register and become a participant in respect of any unit". Currently these fees are netted off overall SEMO costs.

The TSC states that the Market Operator Charge shall comprise of:

- A Fixed Market Operator Generator Charge, which may be different for each Generator Unit;
- A Fixed Market Operator Supplier Charge, which may be different for each Supplier Unit; and
- A Variable Market Operator Charge applicable to all Participants in respect of their Supplier Units, expressed in €/MWh.

During each tariff year, these charges will recover SEMO's operational costs and the appropriate amount of depreciation and WACC associated with I-SEM related capital costs.

8.1 AOLR charges

The High Level Design (HLD) of the Integrated Single Electricity Market stipulated that an Aggregator of Last Resort (AOLR) shall be provided for in the new market design. The aim of the AOLR is to provide a route to market for all small players, allowing for increased volumes to be traded through the ex-ante markets. Participation in the AOLR is limited to renewable generation of all sizes and de minimus generation (<10MWh) of all technologies.

A decision paper on the AOLR Framework was published in 2015, where a 'Passive Approach' was decided on, in which the AOLR would undertake no active trading but utilise a formulaic forecast of demand.

In the Decision Paper it was stated that the SEM Committee considers that an important principle of the AOLR is that, where possible, its costs should be borne by the beneficiaries. Specifically it was stated that;

'*The SEM Committee considers that the identifiable costs of the AOLR should be borne by its participants. The AOLR will levy a fee for its services, and this will be subject to regulatory scrutiny to ensure that it does not create a barrier to entry. The fee structure will be determined during the implementation phase. As the AOLR is passive there is no requirement for incentives to be placed on the AOLR to secure optimal revenue for participants.*'

The Agent of Last Resort Licence condition, under Section 3B/15B of the Market Operator Licence, obligates EirGrid and SONI to act as Agent of Last Resort (AOLR) to provide trading arrangements '*to eligible generators in the market and to act as an aggregator for generators where necessary*'.

The SEM Committee decision on the High Level Design provided for an entity, the Agent of Last Resort (AOLR), to act on behalf of generator units where it was considered that interaction with the ex-ante markets through preparation and submission of orders would present a barrier to their participation in these markets. The role of the AOLR is to act as a bidding agent in the ex-ante markets on behalf of eligible generators.

SEMO is obligated under its respective licences to undertake this activity and the costs of the AOLR have been included in the Opex sections of this paper in terms of IT and resource costs. For information these costs are set out here. An FTE of 0.5 will be required to register units for the AOLR and 0.5 FTE resource in relation to Market Rules will be required for AOLR change requests.

Total AOLR Costs						
		Sep-18	**Sep-19**	**Sep-20**	**Sep-21**	**Total**
	Pre Go Live	**4M**	**12M**	**12M**	**12M**	
IT costs[16]	-	€100,000	€300,000	€300,000	€300,000	€1,000,000
Labour costs (1 FTE)	-	€77,600	€80,300	€80,200	€80,100	€318,000
Total AOLR cost	-	€177,600	€380,300	€380,200	€380,100	€1,318,000

Table 8.1 total AOLR Costs

SEM-15-063, the I-SEM Aggregator of Last Resort Decision Paper, considered that the identifiable costs of the AOLR should be borne by its participants. It was also stated that the AOLR would levy a fee for its services which would be subject to regulatory scrutiny to ensure that it does not create a barrier to entry.

At this time it is uncertain how many participants will use the AOLR. Considering the subset of eligible generators, including registered renewable units above and below the de-minis and generators who have adopted the Supplier Lite structure, an estimate of 200MW is considered reasonable. Using a 33% capacity factor, AOLR fees on a straight pass through basis would amount to approximately 66c/MWh based on SEMO's calculations. This would be charged in addition to the NEMO charges, which are 44c/MWh for trading in the DAM and IDM respectively, in addition to an entry fee of €5,000 and annual fee of €5,000.

The I-SEM Aggregator of Last Resort Decision Paper (SEM-15-063) set out that where it is determined that the fees are prohibitive, there may be a case to socialise some of these costs. It also suggested that a periodic review could be carried out of the fees associated with the AOLR given the fee per MW is contingent on the level of participation in the AOLR. This review could also provide a review of the competition in the market from aggregators which would inform a decision on the regulation of these fees, if appropriate.

The SEM committee has decided that SEMO will charge a flat per MWh fee to use the AOLR service, to be set on an annual basis. Given the uncertainty of cost recovery, the costs of the AOLR are included in SEMO's overall revenue allowance. This fee will be levied on those using the AOLR, and

[16] The annual IT costs for the AOLR allow for bidding on behalf of 10 participants only. If there are additional users additional licence costs will be incurred.

SEMO's K-factor will be adjusted at the end of each tariff year based on the amount collected by the AOLR to offset its cost.

Analysis has been conducted to assess the fee per MWh of participants using the AOLR based on a range of percentages of the costs of the AOLR being socialised, along with their associated impact on market operator charges based on forecast market demand.

% of Annual Cost Recovered through AOLR fees	Estimated Cost per MWh (€)	Remainder paid by market participants	Impact on MO charges (€ per MWh)
100%	0.66	0	0
90%	0.59	38,030	0.001
80%	0.53	76,060	0.002
70%	0.46	114,090	0.003
60%	0.39	152,120	0.004
50%	0.33	190,150	0.006
40%	0.26	228,180	0.007

The SEMC has decided that 50% of the full cost of the AOLR will be charged to participants. The tariff per MWh based on this total cost will be published with SEMO's statement of charges.

9. Conclusion

SEMO has requested a total allowance of €42,908,000 for this price control. The SEMC has allowed an efficient revenue amount of €37,652,000 a reduction of 12% overall.

The final values for SEMO’s Market Operator tariffs will be published following the price control determination.

Further consultation on SEMO KPIs will be undertaken and completed in advance of I-SEM go live.