



**Single Electricity Market
(SEM)**

**SEMOpX Price Control
Consultation Paper**

**SEM-19-063
12 November 2019**

EXECUTIVE SUMMARY

This Consultation Paper outlines the RAs' proposals in relation to the ex-ante allowed revenue regime for SEMOpX between 3 October 2019 and 2 October 2022. This price control is provided on a combined basis between EirGrid and SONI on a 75% and 25% basis respectively, as the designated NEMOs for the Single Electricity Market.

The RAs have assessed the proposed costs associated with SEMOpX which are outlined below. The total proposed revenue allowance for SEMOpX for the price control period is €10,972,263. Overall, the proposals outlined in this Consultation Paper represent a 12% reduction in the proposed revenue allowance submitted by SEMOpX.

SEMOpX Submission					RA Proposal			
March 2019 Prices	2019/20	2020/21	2021/22	Total	2019/20	2020/21	2021/22	Total
Opex Submission	3,499,785	3,512,455	3,531,892	10,544,132	3,274,456	3,287,126	3,299,063	9,860,646
Return on Regulatory Asset Base	18,042	52,331	72,305	142,678	13,899	41,486	57,828	113,212
Depreciation	77,400	241,700	381,100	700,200	59,625	191,225	303,825	554,675
Margin Submission	174,989	175,623	176,595	527,207	81,861	82,178	82,447	246,516
KPI Incentive Entitlement Submission	200,000	200,000	200,000	600,000	65,489	65,743	65,981	197,213
Total	3,970,216	4,182,109	4,361,892	12,514,217	3,495,331	3,667,758	3,809,174	10,972,263

Table 1, Revenue Summary

SEMOpX Submission					RA Proposal			
March 2019 Prices	2019/20	2020/21	2021/22	Total	2019/20	2020/21	2021/22	Total
Unpredictable Capex Submission	50,000	50,000	50,000	150,000	50,000	50,000	50,000	150,000
Predictable Capex Submission	774,000	869,000	525,000	2,168,000	546,250	669,750	356,250	1,572,250
Total Capex	824,000	919,000	575,000	2,318,000	596,250	719,750	406,250	1,722,250

Table 2, Capex Summary

On the basis of the RAs' proposed revenue allowances, indicative outturn tariffs have been calculated and are provided in Section 6.2 of this Consultation Paper. These charges are based on three elements; an entry fee to the exchange, an annual subscription fee and a variable fee per MWh.

For the purpose of the 2019/2020 tariff year, the current SEMOpx charges as published in this Consultation Paper will be applied by SEMOpx and any over or under recovery based on the difference between these and the final revenue allowance in the Decision Paper will be addressed through the K-Factor.

Interested stakeholder's views on each of the proposals in this Consultation Paper are invited until 24 December 2019 and can be submitted to gkelly@cru.ie and Karen.Shiels@uregni.gov.uk.

Table of Contents

1. Introduction	6
1.1 Background	6
1.2 Form and Scope of Price Control	7
1.3 Indexation	7
1.4 Treatment of K-Factor	8
1.5 Overview of SEMOpx	8
1.6 Revenue Proposals Summary	9
1.7 SEMOpx 2018/19 Forecast Outturn	10
2. SEMOpx Operational Expenditure (Opex)	12
2.1 Overview	12
2.2 Labour Costs	13
2.2.1 Current SEMOpx Allowance	13
2.2.2 SEMOpx Submission	14
2.2.3 RA Proposal	16
2.3 Facilities Costs & Overheads Allocated to SEMOpx	18
2.3.1 Current SEMOpx Allowance	18
2.3.2 SEMOpx Submission	18
Facilities Costs and Insurance allocated to SEMOpx	18
Recruitment, HR & Admin	19
Corporate Costs	19
2.3.3 RA Proposal	20
2.4 IT & Telecommunications	22
2.4.1 SEMOpx Submission	22
2.4.2 RA Proposal	22
2.5 Finance and Regulation	23
2.5.1 SEMOpx Submission	23
2.5.2 RA Proposal	23
2.6 Contract Services and Market Coupling	25
2.6.1 SEMOpx Submission	25
2.6.2 RA Proposal	26
3. SEMOpx Capital Expenditure (Capex)	27
3.1 Predictable Capex	27
3.1.1 SEMOpx Submission	27

3.1.2 RA Proposal	29
18,000	31
3.2 Unpredictable Capex	33
3.2.1 SEMOpx Submission.....	33
3.2.2 RA Proposal.....	34
4. Applicable WACC, RAB and Requested Margin	35
4.1 Regulatory Asset Base, Applicable WACC and Depreciation.....	35
4.2 Requested Margin.....	36
4.2.1 Current SEMOpx Allowance	36
4.2.2 SEMOpx Submission.....	36
4.2.3 RA Proposal.....	37
5. Key Performance Indicators.....	39
5.1 Proposed KPIs.....	39
5.1.1 Current SEMOpx KPIs.....	39
5.1.2 SEMOpx Submission.....	39
5.1.3 RA Proposal.....	40
6. Summary and Forecast Charges	42
6.1 Summary of Proposals	42
6.2 Estimated 2019/20 Charges	43
6.3 Next Steps	43

1. Introduction

1.1 Background

The Commission Regulation (EU) 2015/1222 establishing a Guideline on Capacity Allocation and Congestion Management (CACM) entered into force on 14 August 2015. The CACM Network Code requires that a Nominated Electricity Market Operator (NEMO) is designated as responsible for Day Ahead (DA) and Intra-Day (ID) Market Coupling in each national or regional bidding zone. The detailed roles and responsibilities of NEMOs are set out in Article 7 of the CACM Regulation.

The RAs (the Commission for Regulation of Utilities and the Utility Regulator) were each required to designate a NEMO to carry out the functions of the NEMO in 2015, within four months of the entry into force of the CACM Regulation. Under CACM, both EirGrid and SONI were each designated as NEMO for Ireland and Northern Ireland respectively to deliver NEMO services across the all-island bidding zone through a contractual joint venture, SEMOpx.

A Consultation Paper, SEM-19-003, was published on 28 January 2019 which considered a number of options for the framework for regulation of NEMOs in Ireland and Northern Ireland from 3 October 2019, the date which the current designation held by SEMOpx is due to expire. The Consultation Paper provided an overview of the initial NEMO designation for the SEM and the legal and regulatory context under the EU Guideline on Capacity Allocation and Congestion Management, 2015/1222, including the regulatory framework which applied to SEMOpx between 2015 and 2019. In SEM-19-019 it was decided that a time-limited designation of three years would be applied to any NEMO designated in the SEM from October 2019 and that a revenue control would apply to SEMOpx (in the event that SEMOpx successfully applied for re-designation) for an interim period of three years regardless of whether competition arises in the market during this time.

The CRU and UR invited submissions seeking NEMO designation no later than 5 April 2019, to be designated for a period of three years as set out in the SEMC Decision Paper on the regulatory framework to apply to NEMOs in the Single Electricity Market, SEM-19-019. One application was received from EirGrid plc for designation in Ireland and from SONI Ltd in Northern Ireland, setting out evidence of how the candidates meet the designation criteria as required under Article 6 of the CACM Regulation.

In July 2019, the CRU and UR published their respective decisions to designate SEMOpx as a NEMO for Ireland and Northern Ireland from October 2019. These decisions are the basis for this Consultation Paper on the allowed ex-ante allowance for SEMOpx between 2019 and 2022.

1.2 Form and Scope of Price Control

This price control is provided on a combined basis between EirGrid and SONI on a 75% to 25% basis respectively. SEMOpx has provided a submission and supporting information based on RA queries as part of the price control process. The submission is based on the assumption of continued NEMO operation for the duration of the price control, notwithstanding changes to the number of users of SEMOpx's services.

The RAs will also apply the following elements to this price control, consistent with the regulatory framework applied to SEMOpx in SEM-17-096;

- Exchange rate effects will be treated on a cost pass through basis.
- Indexation will be applied consistent with the SEMO Price Control, based on RPI and CPI in order to correct SEMOpx's revenue year by year based on the outturn rate of inflation.
- All figures in this Consultation Paper are presented in March 2019 prices unless stated otherwise.
- Capital expenditure will be depreciated over five years as part of a Regulatory Asset Base, with a return provided against a blended WACC set by reference to the prevailing regulatory approved EirGrid TSO and SONI TSO WACC rates.
- Where revenue recovered in any given tariff period is in excess of or less than the regulatory approved revenues for that period any over or under recovery will be managed via a K-Factor in the future tariff periods.

Based on the information provided and ongoing discussions with SEMOpx, the RAs are publishing this Consultation Paper, which details proposals on SEMOpx's price control allowance for a 3-year period between 3 October 2019 and 2 October 2022.

Interested stakeholders are invited to respond to this Consultation Paper until 24 December 2019.

1.3 Indexation

All prices submitted by SEMOpx and shown in this Consultation Paper are based on a mid-tariff (March 2019) price base. SEMOpx tariffs will be adjusted for out-turn inflation up to March of each year, with any adjustment accounted for through the end of year k-factor adjustment mechanism.

The applicable indexation rate is a blended rate of outturn CPI based on data published by the Central Statistics Office in Ireland and RPI as published by the Office for National Statistics in the UK.

1.4 Treatment of K-Factor

A k-factor will apply to SEMOpx for each tariff year to account for any over or under recovery by SEMOpx, based for example on differences in forecast and actual demand, market participation and the assumptions in SEMOpx's submission. At the end of the price control and designation period, its treatment (in terms of whether it is applied to SEMOpx or otherwise) will be decided based on market conditions at the end of the initial designation period. There are a number of possible scenarios for the treatment of any k-factor at the end of this three-year designation period;

1. **Scenario 1:** Over or under recovery by SEMOpx, where SEMOpx continues to be designated and operates in the market beyond the end of this price control under a revenue regulated regime.
2. **Scenario 2:** Over or under recovery by SEMOpx, where SEMOpx continues to be designated and operates in the market without revenue regulation, where sufficient competition has developed and it is decided that a revenue regulated regime will not apply.
3. **Scenario 3:** Over or under recovery by SEMOpx, where market exit occurs.

In **scenario 1**, the correction factor would be applied to SEMOpx and would be corrected via future regulated revenue streams.

In **scenario 2**, where SEMOpx continues in the market but where sufficient competition has developed and it is decided that a revenue regulated regime will not apply, the treatment of any correction factor would need to be considered carefully in order to ensure that there is no distortion to a level playing field for competition. This correction factor could apply to SEMOpx or to SEMO given that the licence conditions pertaining to the NEMO are ascribed to the Market Operator licences. However, a decision will be made on this aspect of the treatment of any correction factor once the market conditions at the time are better known.

In **scenario 3**, where SEMOpx exits the market, any correction factor would be attributed to SEMO as the licence conditions pertaining to the NEMO are ascribed to the Market Operator licences.

1.5 Overview of SEMOpx

SEMOpx currently operates as a designated NEMO in the SEM through a common joint venture via EirGrid Plc and SONI Limited, which have been designated by the CRU and UR respectively. SEMOpx's service providers, EPEX Spot and European Commodities Clearing AG, provide the trading systems and central counterparty clearing functions of SEMOpx.

The SEMOpX Rules and Operating Procedures set out the detailed obligations of SEMOpX which are underpinned by the respective Market Operator Licences, the NEMO tasks under the CACM Regulation and SEMOpX's requirements under REMIT.

In summary, SEMOpX's role includes;

1. Undertaking NEMO tasks in facilitating the day ahead and intraday markets, as set out in the CACM Regulation.
2. Ensuring the proper functioning and operation of the day ahead and intraday trading platforms.
3. Establishing and maintaining the market organisational bodies and functions such as the Exchange Committee and Market Monitoring, Surveillance and Reporting functions.

1.6 Revenue Proposals Summary

A summary of SEMOpX's revenue submission and the RAs' proposals for this price control are outlined in Table 3 below;

March 2019 Prices	SEMOpX Submission				RA Proposal			
	2019/20	2020/21	2021/22	Total	2019/20	2020/21	2021/22	Total
Opex Submission	3,499,785	3,512,455	3,531,892	10,544,132	3,274,456	3,287,126	3,299,063	9,860,646
Return on Regulatory Asset Base	18,042	52,331	72,305	142,678	13,899	41,486	57,828	113,212
Depreciation	77,400	241,700	381,100	700,200	59,625	191,225	303,825	554,675
Margin Submission	174,989	175,623	176,595	527,207	81,861	82,178	82,447	246,516
KPI Incentive Entitlement Submission	200,000	200,000	200,000	600,000	65,489	65,743	65,981	197,213
Total	3,970,216	4,182,109	4,361,892	12,514,217	3,495,331	3,667,758	3,809,174	10,972,263

Table 3, Revenue Summary

March 2019 Prices	SEMOpX Submission				RA Proposal			
	2019/20	2020/21	2021/22	Total	2019/20	2020/21	2021/22	Total
Unpredictable Capex Submission	50,000	50,000	50,000	150,000	50,000	50,000	50,000	150,000
Predictable Capex Submission	774,000	869,000	525,000	2,168,000	546,250	669,750	356,250	1,572,250
Total Capex	824,000	919,000	575,000	2,318,000	596,250	719,750	406,250	1,722,250

Table 4, Capex Summary

On the basis of the RAs' proposed revenue allowances, indicative outturn tariffs have been calculated by SEMOpX and are provided in Section 6.2 of this Consultation Paper. These charges are based on three elements; an entry fee to the exchange, an annual subscription fee and a variable fee per MWh.

It should be noted that these charges are indicative and are subject to finalisation as part of the SEMOpX Price Control Decision Paper. For the purpose of the 2019/2020 tariff year, the charges applied in 2018/19 and published in this Consultation Paper will be applied by SEMOpX and any over or under recovery based on the difference between the indicative and final charges will be addressed through the K-Factor.

1.7 SEMOpX 2018/19 Forecast Outturn

The Decision Paper (SEM-17-096) for the SEMOpX Price Control published in December 2017 was based on a Go-Live date for the new market arrangements of 23 May 2018 and the end of the initial designation period on 2 October 2019. No adjustment was made to this following the change in the Go-Live date to 1 October 2018.

The submission from SEMOpX includes an overview of the approved price control provision and current forecast outturn revenues and costs for the Pre-Go Live period and 2018/19 tariff year, based on actual figures up to May 2019 and a forecast for the remainder of the tariff year.

Revenue categories (March 2019 Prices €)	Provision under SEM-17-096		Forecast Outturn	
	Pre-Go Live	2018/19	Pre-Go Live	2018/19
Labour Costs	107,000	894,000	78,000	924,000
IT & Telecommunications	27,000	340,000	-	304,000
Facilities & Insurance	22,000	185,000	-	184,000
Recruitment, HR and Admin Costs	13,000	70,000	6,000	97,000
Finance and Regulation Costs	-	204,000	-	173,000

Corporate Costs	10,000	108,000	-	91,000
Contract Services and Market Coupling	-	1,460,000	76,000	1,533,000
Subtotal	179,000	3,262,000	160,000	3,306,000
Total		3,441,000		3,466,000

Table 5, Forecast outturn for SEM-17-096

The submission notes that costs are forecast to be broadly in line with the allowance under SEM-17-096, although Contract Services and Market Coupling Costs have outturned higher than expected due to higher than anticipated trading volumes. This has been offset by increased income from this trading.

European NEMO Committee costs have also been higher than expected due to a number of additional costs which could not be quantified at the time of the 2018/19 submission. Each of these areas is discussed in detail in Section 2 of this paper.

2. SEMOpx Operational Expenditure (Opex)

2.1 Overview

This section considers the operational requirements as submitted by SEMOpx and provides the RAs' views on each Opex item. In many cases, the requested allowances are directly comparable to those allowed for under SEM-17-096 and due to this SEMC Decision having been made quite recently it is the RAs' view that a number of SEMC Decisions under this price control are relevant.

Benchmarking analysis against the current SONI TSO, EirGrid TSO and SEMO price controls is presented along with analysis of a comparable Power Exchange as part of the detailed analysis of each category of costs presented below.

An overview of overall Opex costs submitted by SEMOpx is presented in Table 6 compared to the provision allowed for under SEM-17-096 for the 2018/19 tariff year.

Opex Submission (March 2019 Prices €)	Provision under SEM- 17-096	Forecast for PC Period		
		2018/19	2019/20	2020/2021
Labour Costs	894,000	1,029,000	1,029,000	1,029,000
IT & Telecommunications	340,000	296,000	296,000	296,000
Facilities & Insurance	185,000	203,000	203,000	203,000
Recruitment, HR & Admin	70,000	103,000	103,000	103,000
Finance & Regulation	204,000	205,000	205,000	205,000
Corporate	108,000	109,000	109,000	109,000
Other Activities	1,460,000	1,556,000	1,568,000	1,588,000
Total	3,261,000	3,501,000	3,513,000	3,533,000

Table 6, SEMOpx Opex Submission

2.2 Labour Costs

2.2.1 Current SEMOpx Allowance

Allowed Staff Cost

As part of the current SEMOpx price control, an average allowance of €82,010 (in 2017 prices) was deemed appropriate for each internal resource (taking account of SEMOpx's grade structure), based on the fact that activities for SEMO and SEMOpx are performed from a shared resource pool. This was calculated as an average across all FTEs and includes salary costs, bonuses, social security payments and pension costs.

The average allowance approved by the SEMC reflected the historical costs of the FTEs under the Market Operator Price Control indexed to the equivalent 2017 rate using appropriately reflective wage indices which reflect wage inflation by sector for NI and ROI (sourced from the Northern Ireland Statistics and Research Agency for NI and the Central Statistics Office for Ireland). This was applied to each average FTE cost for the 2013/14 SEMO FTEs by grade and extrapolated based on historical data for the duration of the price control and staff mix of SEMOpx. These figures were weighted on a 75:25 basis to provide a composite average FTE cost figure at each grade.

This labour cost was set on the assumption that a single team could be used across a number of activities given that the SEMOpx function is a licence condition of SEMO, noting that the revenue allowances for SEMO and SEMOpx are set separately.

Allowed FTE numbers

As part of the current price control, an allowance for 6.15 full-time equivalent Market Professionals/Senior Analysts and 4.5 full-time equivalent Senior Market Professionals (including the SEMOpx Manager which accounts for 0.5 FTE) was approved. An allowance for 2 specialist full-time equivalent agency staff was also included which is treated separately under IT and Telecommunications costs in Section 2.3. In total, this comprises 10.65 internal FTEs across participant management, vendor management and support services along with 2 externally managed IT support resources.

Number of Employees	2018/19
Senior Market Professional ¹	4.5
Market Professional / Senior analyst	6.15
Analyst / Administration/Clerical Staff	-
Agency Staff (contract/temporary)	2
Total	12.65

Table 7, Number of FTEs in 2018/19

¹ Given the small number of FTEs in this category the SEMOpx Manager (0.5 FTE) is included in this classification for data protection reasons.

2.2.2 SEMOpx Submission

Staff Cost Submission

The SEMOpx submission includes a proposed average FTE rate of €84,000, based on the average FTE rate provided for in the previous price control of €82,010 (in 2017 prices) indexed to March 2019 Prices using appropriate inflation rates.

FTE Submission

The SEMOpx submission for 2019-2022 includes 12.25 internal FTE roles along with 2 externally managed IT support resources. This is based on a reduction in headcount for the legal Full Time Equivalent from 1.0 to 0.5 FTE and the inclusion of 2 additional resources for the daily operation of ex-ante market functions.

Number of Employees	2019/20 – 2021/22
Senior Market Professional	6.5
Market Professional / Senior analyst	5.75
Analyst / Administration/Clerical Staff	-
Agency Staff (contract/temporary)	2
Total	14.25

Table 8, SEMOpx FTE Submission

The submission states that in preparing the revised organisational design, SEMOpx has considered its obligations as reflected in the SEMOpx Rules and Operating Procedures, the CACM guidelines and SEMOpx's REMIT obligations. A revised organisational chart has been included in the submission including these proposed changes.

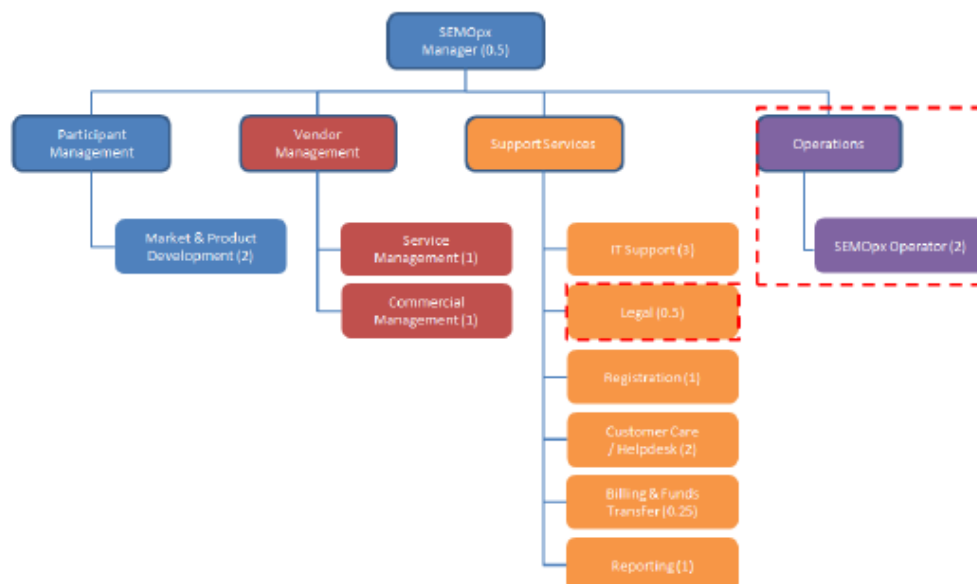


Figure 1

An overview of the proposed FTEs is provided below.

SEMOpX Operators (2 FTEs) – Change from 2018/19: The submission states that although the SEMOpX Operator roles were identified prior to I-SEM Go-Live, they were omitted from the original Price Control submission in 2017 due to an oversight. As these resources were necessary to ensure the effective running of SEMOpX with regard to auctions and the continuous market, deliverables and work were reprioritised in order to ensure the SEMOpX Operator functions could be fulfilled. It is stated that this led to a reduction in emphasis on other roles including customer service and product development.

Auctions are run each day of the year at 11am, 5.30pm, 8am and 2pm and the SEMOpX Operators are required between 7am and 7pm. These roles are required to perform pre-coupling, coupling and post-coupling activities to ensure the effective running of the Day Ahead auction, Intraday 1, 2 and 3 auctions and local continuous trading market.

Legal (0.5 FTE) – Change from 2018/19: The submission states that it has been identified that the overall requirement for legal support has been less than anticipated, leading to a reduction in the legal support FTE value from 1.0 to 0.5. This role is required to manage compliance with market codes including the CACM Regulation and FCA Regulation other legal and contractual arrangements with third party Service Providers and with other parties including TSOs, Interconnector Owners (ICOs), the Joint Allocation Office (JAO MRC) and Price Coupling of Regions (PCR).

SEMOpX Manager (0.5 FTE): The SEMOpX Manager is responsible for the overall management of SEMOpX including its specific obligations under the SEMOpX Rules and delivery of power exchange services.

Market and Product Development (2 FTEs): This is based on the requirement to support the ongoing development and modification of the intraday and day ahead markets to respond to any EU wide policy decisions, operational changes to pan-European algorithms and any local design changes by the SEM Committee. The submission states that such resources are required to ensure Exchange Members are represented through NEMO representation within Europe and that NEMO services are appropriate for unit level participation and to reflect the nature of different market participants.

Service Management (1 FTE): It is stated that while SEMOpX has outsourced significant activities for operation of the Day Ahead and Intraday markets, outsourced services need to be managed effectively. Service provider errors may have significant impacts on SEMOpX and/or its members and on this basis a sufficient level of service management is required. This role is required to manage the functional aspects and counterparties across SEMOpX related contracts, performance monitoring of service providers, ensuring service improvement and value for money and ensuring Service Providers support the delivery of service level changes.

Commercial Management (1 FTE): Management of operating agreements and obligations is required to ensure that Service Providers are in compliance at all times. If market coupling fails, one of the first remedial measures employed by the Market Coupling Operator is to exclude any region or border which is causing the algorithms not to converge on a solution. The responsibilities of this role include control and oversight of internal and external costs, market research and updating the SEMOpX statement of charges.

Registration (1 FTE): The submission states that resources are required on an enduring basis to facilitate customer registration with SEMOpx in a timely manner.

Helpdesk/Customer Care (2 FTEs): The submission states that two resources are required to provide timely resolution of queries which may impact on customer trading.

Billing and Funds Transfer (0.25 FTE): This resource is required to administer debt collection and accounting for SEMOpx participant fees.

Reporting (1 FTE): A resource is required to fulfil the requirement under section B.2.8 of the SEMOpx Rules to carry out market monitoring, surveillance and reporting, also required by REMIT. Section F.2.6 contains requirements in relation to the publication of data by SEMOpx.

IT Support (1 internal FTE and 2 external FTEs): Resources are required for the operation and interface between a number of systems for Market Monitoring, accounting, Oracle Middleware and CRM/Query management. Support for systems is required on a 24/7 basis and this is provided through two additional centralised resources. These are discussed further in Section 2.3.

2.2.3 RA Proposal

Staff Costs

The RAs are minded to allow for the proposed average FTE rate of €84,000 as submitted by SEMOpx as it represents the same average FTE rate as approved by the SEMC for 2018/19, indexed to March 2019 prices.

In SEM-17-096, the SEMC decided that an allowance of €82,010 (in 2017 prices) was appropriate for each internal resource identified based on the actual historical cost of SEMO FTEs indexed using appropriately reflective wage indices for wage inflation by sector for NI and ROI². This decision was also based on benchmarking against the TSO price controls in terms of resource costs.

FTE Numbers

The submission states that the role descriptions and FTE estimates provided as part of the original 2018/2019 PC submission remain valid for the 2019-2022 submission and also provides for additional resources (based on an additional allowance of 1.6 FTEs). While the view of the SEMC at the time of the 2018/19 Price Control was to allow for the full resourcing requirement submitted by SEMOpx, given the context of the establishment of a new entity and operation of the new market, in the RAs' view over the next three years efficiencies in the operation and resourcing of the NEMO should be expected.

The RAs acknowledge that the market and SEMOpx are still at an early stage of operation however the submission provided by SEMOpx does not differentiate between the changing

² The Northern Ireland data was sourced from the Northern Ireland Statistics and Research Agency and the Ireland data from the Central Statistics Office (CSO).

resource requirements associated with establishment of SEMOpx and the new market (such as registration of new participants and negotiation of contracts) versus the enduring resource requirement over the period of this price control and does not provide sufficient justification for some resources.

More information was requested by the RAs on the change in prioritisation of roles in 2018/19 to allow for the resourcing of the SEMOpx Operators in order to understand areas of the business where there may be over or under resourcing.

Benchmarking information has also been requested and reviewed by the RAs. The Hungarian Power Exchange, HUPX, has a similar operating model to SEMOpx whereby trading activities are outsourced to EPEX/ECC. The market size based on net electricity generation is also comparable, with 29.6 TWh traded in the SEM and 29.5 traded in Hungary for 2016. In terms of resource numbers, SEMOpx’s submission compares favourably with 29 employees in April 2019 for HUPX compared to 14.25 in the submission for this Price Control. In terms of staff costs however, €84,000 per FTE for SEMOpx is considerably higher than the average cost per HUPX employee of €44,000. HUPX is also marketed as a potential regional exchange hub with links to neighbouring platforms in Romania, Austria, Czech Republic and the West Balkans. SEMOpx’s overall costs and proposed trading fees are lower than those for HUPX.

Based on this analysis and the information provided, while the RAs are satisfied with the majority of ongoing operational roles for SEMOpx and the resource rates as submitted which are in line with the 2018/19 Price Control, insufficient justification has been provided for the increase in resources from 10.65 internal FTEs to 12.25 internal FTEs.

The RAs are minded to allow for 11.5 FTEs overall to account for the omission of the SEMOpx Operators from the 2018/19 Price Control but see a number of areas for participant management, vendor management and registration where efficiencies should have been achieved following almost a year of NEMO operation.

Proposed Labour Costs on the basis of this reduction are shown in Table 9 below. This does not include the two proposed external IT support FTEs which are considered further in Section 2.3 under IT & Telecommunications costs.

Labour Costs (March 2019 Prices €)	Provision under SEM- 17-096	Forecast for PC Period			
		2018/19	2019/20	2020/2021	2021/2022
SEMOpx Submission	894,000		1,029,000	1,029,000	1,029,000
RA Proposal	N/A		966,000	966,000	966,000

Table 9, RA Labour Costs Proposal

2.3 Facilities Costs & Overheads Allocated to SEMOpx

2.3.1 Current SEMOpx Allowance

Under the 2018/19 SEMOpx allowance, a number of costs associated with Facilities, Recruitment, HR & Admin and Corporate Costs were considered as part of an 'overheads' allowance. Overhead costs were compared against the enduring TSO and SEMO Price Controls on a per annum basis and detailed information was provided by SEMOpx on the breakdown of overheads into Corporate Overheads and Corporate Services.

Corporate Overheads are common to the TSO, MO and SEMOpx price controls and are allocated to each licensee based on a consistent set of principles. Corporate Services include Human Resource Services, Procurement and a number of legal charges which are directly incurred by the TSOs but recharged to SEMOpx for services not directly undertaken by SEMOpx. In addition, premises costs are treated differently in the EirGrid TSO and SONI TSO price controls and facilities costs in the SEMOpx price control are a hybrid of these arrangements.

Taking account of how differences in corporate overheads and corporate services are allocated between the TSO, MO and SEMOpx price controls and in order to align with the enduring TSO price controls, it was decided to reduce the overall overhead allowance per FTE by €2,500 per annum in SEM-17-096.

The reduction of the overall Overhead Allowance was applied by SEMOpx directly to Recruitment, HR and Admin costs rather than smeared across the relevant cost categories. As part of the analysis of this submission, each cost category has been compared to the allowances provided in each of the relevant TSO and MO price controls.

2.3.2 SEMOpx Submission

Facilities Costs and Insurance allocated to SEMOpx

Facilities costs are allocated on a blended per head basis of circa €12,000 per annum based on 2018/19 actuals (and based on the FTE numbers submitted by SEMOpx), while insurance is estimated at €56,000 per annum based on 2018/19 actuals.

Facilities & Insurance (March 2019 Prices €)	Provision under SEM-17-096	Forecast for PC Period		
		2018/19	2019/20	2020/2021
Rent	164,000	147,000	147,000	147,000
Insurance	21,000	56,000	56,000	56,000
Total	185,000	203,000	203,000	203,000

Table 10, SEMOpx Facilities & Insurance Submission

Recruitment, HR & Admin

The submission provides detail on the breakdown of costs associated with recruitment, HR and Admin, based on an estimate of €800 per FTE for training, recruitment as per the requested annual FTE allowance over the course of the price control and an estimate of €3,000 per FTE for travel (based on the FTE numbers submitted by SEMOpx). The submission states that the cost of travel reflects the dual location in Dublin and Belfast, attendance at NEMO Committee meetings and with SEMOpx's external service providers in Amsterdam, Paris and Leipzig.

Recruitment, HR & Admin (March 2019 Prices €)	Provision under SEM-17-096		Forecast for PC Period	
	2018/19	2019/20	2020/2021	2021/2022
Training	10,000	12,300	12,300	12,300
Recruitment Costs	48,000	48,400	48,400	48,400
Travel	39,000	42,100	42,100	42,100
Total	70,000³	102,800	102,800	102,800

Table 11, SEMOpx Recruitment, HR & Admin Submission

Corporate Costs

The submission states that Corporate Costs relate to the allocation of 10% of the Market Operator Director's cost/time to SEMOpx, the allocation of 5% of the SONI Managing Directors' cost/time to SEMOpx and the allocation of costs associated with the CEO, Board, Group Finance and Group Regulation based on the number of FTEs in SEMOpx.

Corporate Costs (March 2019 Prices €)	Provision under SEM-17-096		Forecast for PC Period	
	2018/19	2019/20	2020/2021	2021/2022
CEO and Management Recharge	25,000	35,000	35,000	35,000
Group Recharges	83,000	73,500	73,500	73,500
Total	108,000	108,500	108,500	108,500

Table 12, SEMOpx Corporate Costs Submission

³ A reduction in the Overhead Allowance of €27,000 set out in the SEMOpx Decision for 2018/19 was not prescribed against any one of the cost categories within Overheads. For simplicity this is included as a single line item reduction against the Recruitment, HR and Administration cost category but should not be interpreted as a disallowance of this category of costs in and of itself.

2.3.3 RA Proposal

As noted in Section 2.2.2, a number of the figures provided in the SEMOpX submission for Facilities Costs, recruitment, HR and Admin Costs are premised on a headcount of 12.25 internal FTEs as per SEMOpX's submission. Based on the RAs' proposal to allow for 11.5 internal FTEs in Section 2.1.3, the submitted Overhead Costs have been adjusted to reflect this.

This is based on an adjustment to Rent under the 'Facilities and Insurance' category, an adjustment to Training and Travel under the 'Recruitment, HR & Admin' category and an adjustment to Group Recharges under the 'Corporate Costs' category as these are calculated/allocated based on the number of FTEs in SEMOpX. These adjustments are summarised in Table 13 below.

Adjusted Overheads (March 2019 Prices €)	Provision under SEM-17-096	Forecast for PC Period		
		2018/19	2019/20	2020/2021
Facilities & Insurance	185,000	194,000	194,000	194,000
Recruitment, HR & Admin	70,000	97,112	97,112	97,112
Corporate Costs	108,000	104,400	104,400	104,400
Total	363,000	395,122	395,122	395,122

Table 13, Adjusted Overheads based on reduction in FTEs

For the current SEMOpX Price Control (SEM-17-096), benchmarking of overhead costs for SEMOpX was carried out using the enduring TSO price controls for SONI and EirGrid as comparators. Following consultation and engagement with SEMOpX on the basis for comparison with the enduring price control, the figure of €363,000 in Table 13 was allowed in total for Facilities and Insurance, Recruitment, HR & Admin and Corporate Costs for the 2018/19 tariff year, on the basis of 10.65 FTEs (noting that all figures presented in the tables in this Consultation Paper are presented in March 2019 prices for comparison). This figure aimed to account for the differences in how corporate overheads and corporate services are allocated between the TSO, MO and SEMOpX price controls following engagement with SEMOpX.

Table 14 below compares the overhead rate per FTE in SEM-17-096 (based on 10.65 FTEs) versus the forecast costs provided between 2019/20 and 2021/2020 (based on the RAs' proposed 11.5 FTEs). This shows an increase in costs of €274 per FTE which in the RAs' view is not sufficiently justified in SEMOpX's submission. From consideration of the changes observed in Tables 10-12 and discussion with SEMOpX, it is important to note that not all costs in these categories are driven by FTE numbers as some of these are fixed costs and it is the increase in these fixed cost categories that is driving the increase in the average overhead rate per FTE, for example insurance costs in Table 10 which have increased from 21,000 in 18/19 to 56,000 in 19/20. If only the overhead costs which are driven by FTE numbers are compared, the overhead rate per FTE is comparable to SEM-17-096. The RAs

request that SEMOpx provides further information on the drivers of these fixed cost increases.

On this basis, the RAs propose a reduction in this cost to align the SEMOpx overheads allowance for 2019-2022 to the benchmarked allowance for 2018/19. In the RAs' view, this allowance still provides a useful basis for the allowance between 2019 and 2022.

(March 2019 Prices €)	Provision under SEM-17-096		Forecast for PC Period	
	2018/19	2019/20	2020/2021	2021/2022
Total Overhead Costs	363,000	395,122	395,122	395,122
Allowance Per FTE	34,085	34,358	34,358	34,358

Table 14, Overhead Allowance per FTE

In addition, under the cost category of Recruitment, HR and Admin, €48,400 per annum has been requested for recruitment costs. It is stated that this is based on the assumption that the recruitment of staff will be of a similar scale to that previously allowed annually over the course of the price control. The RAs have a query on the level of costs requested for recruitment given that SEMOpx staff are already in place for this price control, versus the previous price control period which would have involved recruitment of a greater number of new staff. While this allowance has not been reduced for the purpose of this Consultation Paper, the RAs are requesting further information from SEMOpx on the drivers of this cost.

Based on these amendments, the RAs' total proposed allowance for Overhead Costs is shown in Table 15. The RAs propose to allow SEMOpx to apply the reduced allowance at its discretion across each cost category.

(March 2019 Prices €)	Provision under SEM-17-096		Forecast for PC Period	
	2018/19	2019/20	2020/2021	2021/2022
SEMOpx Submission for Facilities and Insurance, Recruitment, HR & Admin and Corporate Costs	363,000	414,300	414,300	414,300
RA Proposal	N/A	391,971	391,971	391,971

Table 15, RA Overheads Proposal

2.4 IT & Telecommunications

2.4.1 SEMOpx Submission

The submission states that IT costs are SEMOpx's deemed share of total IT costs across the Group, broken down into IT application support costs and third-party contractor costs. In terms of IT application support, for the 2018/19 revenue submission a number of submitted costs were based on best estimates due to ongoing procurement at the time. While most outturn support costs were at a similar level to the estimates submitted, Oracle Middleware costs are circa 3 times the estimated value provided in the 2018/19 submission.

Third Party Contractor Costs refer to two 24/7 FTEs which are allocated to support Market Monitoring systems, Oracle Middleware, CRM/Query management and accounting systems. For the 2018/19 revenue submission, €280k for two 24/7 resources was provided based on estimated costs, however based on outturn costs for these resources it has been revised to €166k per annum for this submission.

IT & Telecommunications (March 2019 Prices €)	Provision under SEM-17-096	Forecast for PC Period		
		2018/19	2019/20	2020/2021
IT Application Support Costs	77,000	130,000	130,000	130,000
Third Party Contractor Costs	280,000	166,000	166,000	166,000
Total	340,000⁴	296,000	296,000	296,000

Table 16, SEMOpx IT & Telecommunications Submission

2.4.2 RA Proposal

The RAs are broadly satisfied with the IT and Telecommunications costs as set out in SEMOpx's submission. IT Application Support Costs reflect SEMOpx's share of total IT costs across the Group which have been verified through each of the TSO Price Controls, while the basis and justification for the two external 24/7 FTEs has been provided in SEMOpx's submission as per SEM-17-096.

⁴ A reduction in Market Surveillance costs of €16,000 from the Decision for 2018/19 is included in this figure.

IT & Telecommunications (March 2019 Prices) €	Provision under SEM-17-096		Forecast for PC Period	
	2018/19	2019/20	2020/2021	2021/2022
SEMOpX Submission	340,000	296,000	296,000	296,000
RA Proposal	340,000	296,000	296,000	296,000

Table 17, RA IT & Telecommunications Proposal

2.5 Finance and Regulation

2.5.1 SEMOpX Submission

The submission states that these costs relate to costs primarily required under legal and regulatory obligations and a number of costs are estimated based on historical costs paid by SEMO, for example for the SEMO Market Audit.

Finance & Regulation (March 2019 Prices) €	Provision under SEM-17-096		Forecast for PC Period	
	2018/19	2019/20	2020/2021	2021/2022
Market Audit	138,000	135,000	135,000	135,000
Statutory Audit	38,000	37,500	37,500	37,500
Internal Audit	12,000	11,250	11,250	11,250
Legal Professional Fees	15,000	20,000	20,000	20,000
Banking Fees	1,000	1,000	1,000	1,000
Total	204,000	204,750	204,750	204,750

Table 18, SEMOpX Finance & Regulation Submission

2.5.2 RA Proposal

The submission states that the estimate of €135,000 per year for the Market Audit is based on annual fees historically paid by SEMO, while the Statutory Audit of €37,500 is expected to be higher than the comparable costs of circa €25,000 for SEMO as SEMOpX is a new business.

In terms of the Market Audit and Statutory Audit fees, the RAs have engaged with SEMOpX in this area and it has been confirmed that no audit activities have been undertaken or costs

associated with these incurred to date, however a forecast outturn cost has been included in SEMOpx's submission of €127,000 for the Market Audit and €35,000 for the Statutory Audit.

Paragraph B.16.1.3 of the Trading and Settlement Code requires the Market Auditor to conduct an audit of the Code, its operation and implementation of the operations, trading arrangements, procedures and processes under the Code at least once a Year. The Terms of Reference for the 2019 Market Audit, published in July 2019 (SEM-19-032) propose a Core SEMO Audit and audit of the SEM Settlement Cutover, without any reference to SEMOpx. At the time of the initial SEMOpx price control, the SEMOpx Rules and Operating Procedures were still being finalised but the current versions which have been approved by the RAs do not contain any requirement for a Market Audit specifically for SEMOpx. On this basis, the RAs propose to remove the Market Audit allowance from the SEMOpx price control, on the understanding that no Market Audit will be required for SEMOpx. On the basis that this has not yet been conducted for 2018/19, this would also be reflected in SEMOpx's k-factor for 2019/20.

Separate to the issues considered above, the RAs would also expect that any ongoing fees for the Market Audit and Statutory Audit would decrease over the period of the Price Control. This is reflected for example in audit costs for SEMO between 2009 and 2015. For the period between 2009 and 2011, 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 (plus an estimated share of financial audit costs of €25,000). Evidence has not been provided to the RAs to support the sustained level of such costs over the period of the Price Control. In addition, no justification has been provided in the submission for the increase in legal professional fees from €15,000 to €20,000 per annum and no forecast outturn cost for 2018/19 has been submitted.

Based on this, the RAs propose to remove the Market Audit allowance and reduce Statutory Audit costs by 20% for 2021/22, (Under the 2019-2022 SEMO Price Control, overall audit fees for 2020/21 were reduced by 27% for the final tariff year). A reduction in the allowance for Legal Professional Fees is also proposed to €15,000 per annum.

Finance & Regulation (March 2019 Prices) €	Provision under SEM-17-096	Forecast for PC Period		
		2018/19	2019/20	2020/2021
Market Audit	138,000	0	0	0
Statutory Audit	38,000	37,500	37,500	30,000
Internal Audit	12,000	11,250	11,250	11,250
Legal Professional Fees	15,000	15,000	15,000	15,000
Banking Fees	1,000	1,000	1,000	1,000
RA Proposal	204,000	64,750	64,750	57,250

Table 19, RA Finance & Regulation Proposal

2.6 Contract Services and Market Coupling

2.6.1 SEMOpx Submission

These costs are primarily associated with SEMOpx's service providers and European Market Costs based on SEMOpx's largely outsourced model of operation using an established Power Exchange (EPEX) and Central Counterparty (ECC). Under this model, market coupling and trading operations functions are being delivered by an established Power Exchange rather than establishing this functionality internally. The aim of this approach is to deliver a lower cost solution for NEMO functionality as opposed to building new 'in house' systems for SEMOpx.

Service provider costs are based on the number of participants in the market and have a fixed and variable element linked to the traded volumes in each market. The number of participants between 2019 and 2022 is assumed to be 50 in the SEMOpx submission, with forecast traded volumes based on the 2018-2027 All Island Generation Capacity Statement median all-island electricity demand forecast. The figure for the anticipated traded volume outturn for 2018/19 is 76 TWh and the assumed volumes increase from 79 TWh in 2019/2020 to 87 TWh in 2021/22.

Costs associated with participation in EU wide markets include NEMO Committee Costs, Single Day Ahead Coupling costs, Single Intraday Coupling costs and Price Coupling Region Operational Costs. As the new market has been implemented using an interim intraday trading solution, a number of EU Single Intraday Coupling costs are not currently incurred by SEMOpx.

NEMO Committee Costs relate to NEMO Committee support and chairman costs and are split equally across 17 NEMOs. 1/17th of NEMO Committee costs are allocated to EirGrid and SONI each as separately designated NEMOs.

Costs are also incurred by SEMOpx related to the establishment, amendment and operation of Single Day Ahead Coupling (SDAC), including research and development and operation of the SDAC. No Single Intraday Coupling (SDIC) costs will be incurred until SEMOpx is included in the EU wide continuous Intraday Market, XBID and the EU wide intraday auctions which are currently in development.

Price Coupling Region (PCR) Operation costs relate to the PCR members performing the Market Coupling Operation, which have been estimated by SEMOpx based on the SEM volumes as a percentage of total volumes of 27 member states.

Contract Services & Market Coupling (March 2019 Prices €)	Provision under SEM-17-096	Forecast for PC Period			
		2018/19	2019/20	2020/2021	2021/2022

Service Provider Costs and European Market Coupling Costs	1,460,000	1,556,000	1,568,000	1,588,000
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Table 20 SEMOpx Contract Services & Market Coupling Submission

2.6.2 RA Proposal

It is the RAs' view that these costs are largely outside of SEMOpx's control and reflect the monies paid to third parties in respect of supporting systems and other industry costs associated with operating as a NEMO. The RAs have requested further information in relation to Service Provider Costs which has been provided by SEMOpx but is not included in this Consultation Paper due to commercial sensitivity. The RAs are satisfied that these costs reflect the contracts agreed with each service provider.

As part of the review of this submission, the RAs queried the assumption of 50 market participants between 2019 and 2022. SEMOpx has stated that there is currently no basis for making a different assumption but acknowledged that this figure could change over the course of the price control. The RAs also queried the use of growth rates for forecast traded volumes based on the 2018 Generation Capacity Statement (GCS) rather than the 2019 GCS and revised figures were submitted by SEMOpx on the basis of 2019 GCS. These do not significantly impact on the revenues required for service provider costs.

In terms of costs associated with European Market Coupling, under Article 80(1) of CACM, all relevant NEMOs and TSOs are required to provide a yearly report to National Regulatory Authorities reflecting the costs of establishing, amending and operating single day-ahead and intraday coupling in detail, breaking down such costs into common, regional and national costs. This report should be published on a yearly basis by ACER. The RAs have reviewed the submission for 2017 received from the ACER CACM Taskforce (which has not yet been published) to ensure that the costs submitted by SEMOpx related to the NEMO Committee, SDAC, SDIC and PCR are in line with overall common⁵ NEMO costs. On this basis, the RAs are satisfied with SEMOpx's proposed costs in this area.

Contract Services & Market Coupling (March 2019 Prices €)	Provision under SEM-17-096		Forecast for PC Period	
	2018/19	2019/20	2020/2021	2021/2022
SEMOpx Submission	1,460,000	1,556,000	1,568,000	1,588,000
RA Proposal	1,460,000	1,556,000	1,568,000	1,588,000

Table 21, RA Contract Services & Market Coupling Proposal

⁵ As per Article 80 (2)(a) of the CACM Regulation, common costs result from the coordinated activities of all NEMOs or TSOs participating in single day-ahead and intraday coupling.

3. SEMOpx Capital Expenditure (Capex)

No Capex allowance was included in the previous SEMOpx Price Control for the period between 3 October 2018 and 2 October 2019, due in part to the fact that any capital expenditure associated with the establishment of SEMOpx was included in the overall implementation costs of the I-SEM Project.

SEMOpx has requested a Capex allowance in its submission in order to enhance services, ensure compliance and mitigate potential market risks and support changes by the TSO/MO which will impact on the ex-ante markets. Estimated costs are based on system design and implementation costs and on the resources required to amend or update SEMOpx processes, procedures and training. It is stated that estimated costs are subject to further refinement based on the scope and design of any changes being progressed further. It is assumed that any allowed costs would be recovered over a 5-year depreciation period.

3.1 Predictable Capex

3.1.1 SEMOpx Submission

Capex proposals for a number of specific projects have been submitted by SEMOpx, which are outlined in Table 22. This predictable Capex allowance has been requested by SEMOpx to plan for significant hardware and software upgrades and implementation of additional operational support systems.

Predictable Capex (March 2019 Prices €)	Provision under SEM-17-096		Forecast for PC Period	
	2018/19	2019/20	2020/2021	2021/2022
Participant Training (e-learning system)	-	9,000	9,000	-
Market System Data Storage and Archiving	-	120,000	140,000	20,000
Website Enhancements	-	100,000	100,000	-
Product Development	-	200,000	200,000	200,000
Registration and Transfer Improvements	-	120,000	275,000	160,000
REMIT Transparency	-	-	-	20,000
Market Analysis Tools	-	50,000	25,000	25,000

Urgent Market Messaging	-	30,000	-	-
Compliance Management System	-	10,000	5,000	-
Middleware Enhancements	-	35,000	15,000	-
TSO/SEMO Driven Capital Expenditure	-	50,000	50,000	50,000
Total	-	724,000	819,000	475,000

Table 22, SEMOpx Predictable Capex Submission

SEMOpx has submitted 11 business cases for investments in areas including IT infrastructure, market analysis tools, reporting requirements and product development. A brief overview of each of the proposed Capex projects is provided below. The SEMOpx submission includes a detailed description of each project, the drivers for each project and justification for costs.

Participant Training: The submission states that training content needs to be updated, developed and deployed to reflect the latest market developments. Technical communication channels also need to be improved in order to deliver participant training.

Market System Data Storage and Archiving: This concerns the implementation of data storage and archiving solutions to ensure that data is maintained according to participant, legal and regulatory requirements. It would involve investment in secure data storage and archiving solutions for database and file systems.

Website Enhancements: It is stated that improvements to the website are required as some of the original website design was not implemented in time for go-live, while additional functionality has been requested by stakeholders. This could include publication of price and volume results, dynamic reporting for participants to query and retrieve data, provision of market status indicators, publication of REMIT reports and publication of remaining interconnector capacity after each auction.

Product Development: This would involve the addition of new product offerings in the ex-ante markets and updates to trading systems to accommodate product changes. This would be dependent on the practicalities of new product implementation at an EU, regional or local level.

Registration and Transfer Improvements: This would involve enhancements to the existing trading systems, ETS for auctions and M7 for continuous trading to allow for better management of the effective dates of members and units and the transfer of units along with the development of a registration system to better manage registration.

REMIT Transparency: This relates to enhancements to REMIT reporting requirements to include W-codes on a unit level in REMIT reporting to ACER to assist in identifying intra-portfolio balancing trades and the implementation of Swiss Regulatory Authorities' reporting requirements for Swiss companies trading in the ex-ante markets.

Market Analysis Tools: This is related to the implementation of analytics tools to allow more efficient and comprehensive monitoring of the ex-ante markets. This would further allow SEMOpx to understand and monitor market activities and outcomes.

Urgent Market Messaging: This involves the design and implementation of an Urgent Market Messaging system to be utilised by market participants for REMIT reporting requirements.

Compliance Management System: This is related to the development of a system to track the status of SEMOpx compliance with market rules, procedures, contracts and licenses.

Middleware Enhancements: While the core trading and settlement systems for the ex-ante markets are maintained by SEMOpx's service providers, IT infrastructure related to the interface between different systems is maintained by SEMOpx. This includes interfaces to submit interconnector capacities to the ex-ante markets, receiving, validating and approving market results, transmission of market results to participants and interfaces with central market systems for the submission of contracted quantities.

TSO/SEMO Driven Capital Expenditure: SEMOpx may need to make changes to systems and processes to accommodate changes to the operational systems of the TSOs and SEMO which impact on SEMOpx processes and systems. This is due to the coupled nature of the systems between SEMOpx, SEMO and the TSOs.

3.1.2 RA Proposal

Each of the 11 Capex project proposals submitted by SEMOpx includes a provisional estimate of expenditure with variations in the level of costs and known scope of each project. It is difficult to carry out a detailed assessment of the proposed predictable Capex for each project as in some cases the scope of work is not yet known in full and the proposed expenditure is subject to change.

This issue is varied across each of the proposals. For example, costs have previously been incurred in relation to participant training for the new market so it would be expected that the estimated cost associated with this proposed project would be quite close to the outturn cost. In comparison, the scope as submitted for the Product Development Project is quite broad and the cost submitted is based on a number of potential new products in the ex-ante markets.

Comparison with previous SEMO Capex Submissions

This submission has been compared to the treatment of the 2013-2016 SEMO Capex submission, in response to which the RAs commissioned Gemserv to carry out an objective assessment of each of SEMO's proposed business cases. It was concluded that as the Capex proposals included only provisional estimates of costs, it was difficult to carry out any effective benchmarking and market testing for efficiency. As Gemserv were unable to carry out any form of benchmarking of the Capex budgets, it was recommended that a baseline Capex allowance was set at a level that was comparable to the Capex outturn of the price control in operation at the time.

The SEMC approved a subset of the business cases submitted under the 2013-2016 Capex submission which were recognised as being critical for the business, while other more discretionary projects were not approved. A baseline of efficient expenditure was then set with an overall efficiency reduction in order to be comparable to the Capex outturn of the previous price control compared with the approved budget. Gemserv also recommended an alternative baseline representing 95% of SEMO's submission, which could be applicable to SEMOpx given that there is currently no Capex outturn to compare the submission to.

In terms of proportional scale, Capex accounted for approximately 16-20% of total allowed revenue under the 2013-2016 SEMO Price Control and SEMOpx's proposed allowance accounts for approximately 16% of the total revenue requested for this price control.

Proposed Projects

The RAs have assessed the submissions for each of the proposed projects and have attempted to categorise these into projects which reflect operational requirements of SEMOpx and more discretionary projects based on the drivers of each project and justification of costs provided in SEMOpx's submission.

In the RAs' view, the projects on the left of Table 23 below have been sufficiently justified in the submission by SEMOpx. The projects on the right of Table 23 are considered in turn below.

- In terms of participant training, the RAs acknowledge the usefulness of the training provided as part of the Participant Market Readiness work stream before go-live of the new market, however sufficient detail on the basis for costs has not been provided in the submission along with justification that this training is required by market participants.
- In terms of Product Development, the submission is unclear as to what exactly the Capex Project aims to deliver in order to justify a cost of €200,000 per year. It states that the potential product additions which have been identified to date include Complex or Block Orders in the Intraday Auctions, Block Orders in the Day Ahead Auctions and All or Nothing block bids in the continuous market. The RAs query the assumption in this business case that additional product types can currently be accommodated in the Day-Ahead market under the Euphemia algorithm. In addition, it is not evident that cost benefit analysis of the implementation of additional intraday products within the interim intraday solution has been conducted which takes account of the eventual implementation of the Pan-EU intraday solution. The RAs recognise the importance of potential product additions to market participants however and propose an allowance of €100,000 per year on the basis of such product development only being feasible for the intraday market. Interested stakeholders' feedback is sought in relation to this proposal.
- As stated in the SEMOpx submission, there are currently eight centralised Urgent Market messaging Platforms listed on the ACER website which market participants may make use of to meet their reporting obligations under REMIT. The RAs are not clear on the added value provided by an additional platform being developed and welcome stakeholder feedback on this.

- Finally, sufficient justification has not been included in the submission for a separate compliance management system to improve SEMOpx’s compliance with its relevant agreements and protocols.

Projects identified as necessary for SEMOpx operations	Total Cost	Projects identified as discretionary	Total Cost
Market System Data Storage and Archiving	280,000	Participant Training (e-learning system)	18,000
Website Enhancements	200,000	Product Development	600,000
Registration and Transfer Improvements	555,000	Urgent Market Messaging	30,000
REMIT Transparency	20,000	Compliance Management System	15,000
Market Analysis Tools	100,000		
Middleware Enhancements	50,000		
TSO/SEMO Driven Capital Expenditure	150,000		
Total	1,355,000		663,000

Table 23, Projects identified as necessary for SEMOpx Operations

In summary, the RAs propose to allow for the projects identified on the left of Table 23 and allow €100,000 per annum for the Product Development Project.

Proposed Baseline

Due to the difficulty in assessing these project estimates against any benchmarks and the lack of any outturn Capex costs incurred by SEMOpx to date, of the total project costs allowed for, the RAs propose a baseline of 95% to account for any efficiencies which can be achieved in relation to final outturn costs. Based on this, the RAs’ proposal in relation to Capex is outlined in Table 24.

Predictable Capex (March 2019 Prices €)	Forecast for PC Period (based on a baseline of 95%)		
	2019/20	2020/2021	2021/2022
Market System Data Storage and Archiving	114,000	133,000	19,000
Website Enhancements	95,000	95,000	
Product Development	95,000	95,000	95,000
Registration and Transfer Improvements	114,000	261,250	152,000
REMIT Transparency			19,000
Market Analysis Tools	47,500	23,750	23,750
Middleware Enhancements	33,250	14,250	
TSO/SEMO Driven Capital Expenditure	47,500	47,500	47,500
RA Proposal	546,250	669,750	356,250

Table 24, RA Predictable Capex Proposal (with a 95% baseline)

Capex Incentivisation

In the RAs' view, incentivisation of efficient Capital Expenditure is required as part of this price control for a number of reasons. Forecast costs for capital expenditure have been prepared up to 3 years in advance so it would be reasonable to assume that these incorporate contingencies. In addition, the scope of each predictable capex is not fully defined as no competitive procurement process for relevant projects has taken place yet. In addition, the RAs have not been provided with a detailed derivation of estimated project costs.

There are two approaches that are being considered by the RAs for this Capex determination. The first approach is based on the provision of a single ex-ante allowance to SEMOpx as per the proposed baseline in Table 24. This would be based on a subset of approved projects with a baseline of 95% applied to cost estimates provided by SEMOpx to account for any efficiencies which can be achieved in relation to final outturn costs. The RAs propose that SEMOpx would be incentivised to under spend this allowance by retaining 50% of savings derived from efficiency gains, with 50% of any over expenditure being absorbed by SEMOpx. The table below outlines the regime of rewards and penalties that SEMOpx would be subject to.

Outturn Expenditure	Allowed Expenditure	Reward/Penalty
80%	1,257,800	157,225
85%	1,336,413	117,919
90%	1,415,025	78,613
95%	1,493,638	39,306
100%	1,572,250	0
105%	1,650,863	-39,306
110%	1,729,475	-78,613
115%	1,808,088	-117,919

Table 25, RA Capex Incentivisation Proposal

An alternative approach is to apply menu regulation to the SEMOpx price control. Menu regulation has been employed in successive SEMO price controls to date. Under this approach, SEMOpx could choose between a lower cost allowance with an incentive scheme which allows them to retain significant benefits from under spending or a higher cost allowance with relatively small rewards for under-spending.

The RAs would set the 'baseline' level of expenditure for SEMOpx under this price control, which would form the basis for calibration of different menu choices. Menu rewards or penalties would then be calculated by applying the incentive rate correlating to the package chosen by SEMOpx and outturn achieved. Where an option is chosen, SEMOpx would still have an incentive to out-perform and aim for efficient expenditure by rewarding out-performance against more challenging expenditure targets. The smaller scale of the proposed Capex allowance under this price control may not necessitate the complexity of this second option however.

Monitoring the delivery of Capex Items

The RAs also propose that the following requirements will apply to any Capex allowance provided for under this price control;

- Notice should be provided to the RAs where SEMOpx does not intend to take forward any of the business cases approved for the price control period.
- Where any approved projects are not progressed by SEMOpx, the RAs will revise the baseline and revenue requirement downward.
- RA approval will be required for any substitution to the list of approved projects.
- The RAs will monitor the delivery and costs associated with the final approved baseline.
- SEMOpx will be required to submit an end of year capital report with a summary of actual outturn for each project at the end of each tariff year.

3.2 Unpredictable Capex

3.2.1 SEMOpx Submission

An allowance for Unpredictable Business Capex has also been requested under a discretionary, pass-through fund to cover smaller scale and unforeseen capex requirements that may arise during the course of the price control. This may relate to software upgrades, operational efficiency products or applications or other small capex requirements which are not currently identifiable.

Unpredictable Capex (March 2019 Prices €)	Provision under SEM-17-096		Forecast for PC Period	
	2018/19	2019/20	2020/2021	2021/2022
Unpredictable Capex Allowance	0	50,000	50,000	50,000

Table 26, SEMOpx Unpredictable Capex Submission

3.2.2 RA Proposal

The RAs understand that the requested unpredictable Business Capex allowance is a discretionary fund which is used to cover the aggregate costs of smaller scale but ongoing levels of business Capex and to enable SEMOpx to respond to IT issues requiring immediate resolution. The RAs are minded to allow for this and note that the provision of an allowance on a pass through basis will mean that only actual expenditure will be placed on the SEMOpx RAB up to a cap of €50,000.

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.

Unpredictable Capex (March 2019 Prices €)	Provision under SEM-17-096	Forecast for PC Period		
		2018/19	2019/20	2020/2021
RA Proposal	0	50,000	50,000	50,000

Table 27, RA Unpredictable Capex Proposal

4. Applicable WACC, RAB and Requested Margin

4.1 Regulatory Asset Base, Applicable WACC and Depreciation

Under this price control, an allowed revenue regime is applied to SEMOpx, with any incremental Capex being placed on SEMOpx's Regulatory Asset Base (RAB). SEMOpx does not have an opening RAB at the start of this price control on 3 October 2019 as the costs associated with establishing SEMOpx are being recovered as part of overall I-SEM Implementation Project Costs.

The Weighted Average Cost of Capital (WACC) mechanism which applies to SEMOpx blends the two system Operator WACCs in accordance with the specified proportions of 75% for EirGrid and 25% for SONI. The application of a WACC to a Regulated Asset Base is a form of remuneration for the exposure to systematic risk.

Under the current SONI Price Control from 2015-2020, a WACC of 5.85% applies, while under the current EirGrid price control a WACC of 4.95% applies. Any Capex placed on SEMOpx's RAB will be subject to a pre-tax Weighted Average Cost of Capital rate of 5.18%. Throughout this price control the WACC will be updated to reflect any changes associated with the relevant price controls and adjustments made in the corresponding k-factor.

TSO Price Control	Specified Proportion	WACC Rate	Blended Rate for SEMOpx
EirGrid Transmission System Operator	75%	4.95%	5.18%
SONI Transmission System Operator	25%	5.85%	

Table 28, Blended WACC Rate for SEMOpx

Depreciation of assets is subject to straight-line depreciation over a five-year period, as per the Market Operator Price Control. This is considered a reasonable asset life for IT and related assets and is consistent with SEMO price controls to date.

The table below shows SEMOpx's estimated cost of capital over the next three years.

	Forecast	Forecast	Forecast
	2019/20	2020/21	2021/22
Opening Regulatory Asset Base	0	696,600	1,323,900
Return on Asset Value	18,042	52,331	72,305

Table 29, SEMOpx estimated cost of capital

The table below shows the RA's estimated of the cost of capital for the next three years based on the proposed baseline of capital expenditure outlined in Section 3. This also

includes the unpredictable Capex allowance for illustration although it will not be placed on SEMOpX's RAB unless it is incurred.

	Forecast	Forecast	Forecast
	2019/20	2020/21	2021/22
Opening Regulatory Asset Base	0	536,625	1,065,150
Additions	596,250	719,750	406,250
Depreciation	59,625	191,225	303,825
Asset Value Close	536,625	1,065,150	1,167,575
Half Year Asset Value	268,313	800,888	1,116,363
Return on Asset Value	13,899	41,486	57,828

Table 30, RA estimated cost of capital

4.2 Requested Margin

4.2.1 Current SEMOpX Allowance

No margin is currently allowed for in the SEMOpX price control which applies until 2 October 2019. Furthermore, no Capex was included in the SEMOpX submission for the current price control, however the SEMOpX price control decision, SEM-17-096 recognised that in principle any future Capex would be placed on a SEMOpX Regulatory Asset Base (RAB).

The regulatory framework for designated NEMOs in the SEM from October 2019 was considered, and decided upon, earlier this year in SEM-19-019. SEM-19-019 stated that any remuneration applied to SEMOpX in the absence of a sufficient RAB would be consistent with other parts of the licencees' activities as Market Operator.

4.2.2 SEMOpX Submission

SEMOpX, within their submission, has interpreted SEM-19-019 to directly relate to the remuneration framework which applies currently to the Market Operator (SEMO) under the SEMO price control 2018-2021 decision paper, SEM-18-003. The framework in SEM-18-003 set out that SEMO would receive a 0.25% margin on collection agent revenues in respect of managing the capacity market, the socialisation fund and residual error. As documented in the SEMOpX submission, the SEMO margin of 0.25% is translated as being equivalent to 9% of the total SEMO annual Opex allowance.

The SEMOpX submission then seeks to map across a similar framework for SEMOpX, however it recognises that it is important to give consideration to the different set of risks SEMOpX has under its obligations when compared to SEMO's responsibilities. While SEMO has a degree of risk of revenue mismatches under its collection agent function, SEMOpX does not. SEMOpX does however need to manage its fiduciary duties, reputational risk, operational expenditure risk and forecasting error and the submission states that some of these risks are greater than for SEMO; some are less.

In acknowledging these differences, the SEMOpX submission requests an overall margin of 5% of total Opex, providing a return of circa €175,000 per annum as detailed in Table 31 below.

Margin Requested (March 2019 Prices €)	Provision under SEM- 17-096		Forecast for PC Period	
	2018/19	2019/20	2020/2021	2021/2022
SEMOpx Submission (5% of total Opex based on the Opex allowance submitted by SEMOpx)	-	174,989	175,623	176,595

Table 31, SEMOpx Margin Submission

4.2.3 RA Proposal

The RAs are mindful that the 0.25% margin for SEMO reflected SEMO's limited opening RAB under the price control. In addition, there is currently no RAB within SEMOpx. This reflects the decision that all capital costs associated with implementing the I-SEM project (including TSOs, SEMO and SEMOpx) have been placed on the respective TSOs' RAB.

The RAs have engaged further with SEMOpx in respect of the nature of the risks faced by the designated NEMO under the regulatory framework set out in SEM-17-096. SEMOpx advised that level of turnover in the ex-ante markets brings with it a level of reputational and associated fiduciary risk associated with the management of such cash flows on behalf of market participants.

SEMOpx have also advised the RAs that they face cash flow exposure in terms of energy volume forecasting and operational expenditure risk in terms of the timing of receipts and payments for the carrying out of the SEMOpx operations and for which associated lines of working capital are required to be put in place.

As part of the 2018/19 price control process a number of SEMOpx risks and mitigating factors were identified and it is the RAs view that these will continue to be applicable under this 2019-2021 price control. These are outlined in Table 32 below.

Change in market share or additional costs associated with minimum volumes in auctions	This price control underwrites the continuing efficient costs of providing a NEMO service for the designation period, irrespective of SEMOpx's market share or additional costs associated with price floors for minimum volumes in each of the day ahead and intraday auctions. These arise where participation in the market is below contracted volumes and additional costs are incurred.
Changes in legislation or regulation, major or exceptional market changes	Where costs escalate either individually or in aggregate over the period of the price control above a material threshold of €0.250m due to any of these factors, a reopener to the price control will be carried out by the SEM Committee.

Increase in costs from individual participant requirements	Any incremental costs imposed on SEMOpX that can be directly attributable to a Participant, for example shipping costs charged to ICOs, should be incurred by the party imposing such costs and SEMOpX should be held cost neutral from such requests. In summary, these would be treated as a pass-through cost.
Exchange rate fluctuation	Exchange rate fluctuations are not controllable in this context and can be passed through.

Table 32, Proposed mitigating factors for risks faced by SEMOpX

The RAs are of the view that some level of margin is appropriate under this price control, due to the relatively small RAB and associated return for SEMOpX for this period. However, the margin needs to take into account the mitigating factors that have been put in place by the RAs based on a number of unique risks faced by SEMOpX and the level of return that will be earned by SEMOpX on its RAB based on a blended WACC of 5.18%.

SEMOpX's submission requested approximately €175,000 per annum representing a margin on turnover of 0.0176% (which SEMOpX equated to being 5% of their OPEX submission). Assessing an appropriate margin for SEMOpX is difficult given the limited information provided by SEMOpX and also the lack of benchmarking information available of comparable entities facing similar risks. Furthermore, the identified risks appear to more closely relate to the overall revenue of the business rather than OPEX requirements, for example cash-flow exposure through forecasting error.

Reflecting on the limited information received from SEMOpX on these risks, and the associated difficulty assessing the specific risks, the RAs propose, on balance, a margin of 2.5% of the proposed OPEX allowance as a proxy for the risk SEMOpX face in relation to managing the overall revenue of the SEMOpX business.

The proposals are set out in Table 33 below.

Margin Requested (March 2019 Prices €)	Provision under SEM- 17-096	Forecast for PC Period			
		2018/19	2019/20	2020/2021	2021/2022
SEMOpX Submission (5% of total Opex)	-		174,989	175,623	176,595
RA Proposal (2.5% of OPEX proposal)			81,861	82,178	82,477

Table 33, RA Margin Proposal

It should be noted that this proposed approach is specific to SEMOpX and to this price control and the period covered by it and cannot be seen as precedent for any future determinations in respect of the Market Operator and the TSOs. The structure, status of SEMOpX as a NEMO and risk profile is unique to SEMOpX.

5. Key Performance Indicators

5.1 Proposed KPIs

5.1.1 Current SEMOpx KPIs

As part of the 2018/19 Price Control, the SEM Committee considered a range of performance standards that could be applied to SEMOpx. Given that the 2018/19 Price Control was limited in duration and the application of any performance standards would usually require a bedding in period under new market operation, it was decided not to apply an incentive mechanism at the time.

In addition, there was no certainty that the SEM Committee would continue to regulate SEMOpx's revenue beyond the initial price control period which created a level of uncertainty around how any financial aspect of incentive related performance standards would be applied.

5.1.2 SEMOpx Submission

As part of the current price control submission, SEMOpx was requested to provide proposals on KPIs to be used between 2019 and 2022. The following KPIs have been proposed by SEMOpx;

- 1. Auction Results:** The percentage of occurrences where the day ahead and intraday auction results are published within 1 hour of the target publication times through the auction trading system (ETS). The target times, as documented in the SEMOpx Operating Procedures, are;
 - DAM 11:55
 - IDA1 18:10
 - IDA2 08:40
 - IDA3 14:15.
- 2. System Availability:** Availability of the auction and continuous trading systems according to their required availability (i.e. 24/7) excluding any planned outages. This is a ratio of the time in which systems are said to be in a functioning condition to the total time they are required to be available.
- 3. General Queries:** The percentage of occurrences where a general query received is addressed within 30 Business Days. This KPI aims to maintain efficiency and customer focus within SEMOpx. A general query is defined within the metric as any request logged through the SEMOpx helpdesk (info@semopx.com). Time spent for market participants to provide further information or accept resolution of a query will not be counted as part of the query resolution time. Nor will time be counted where a procedural change or system change is needed in order to close a query.

The proposed weightings and targets proposed by SEMOpx include;

SEMOpX KPI	Weighting	Proposed Lower Bound	Proposed Upper Bound
Auction Results	50%	98.0%	99.9%
System Availability	30%	99.5%	99.9%
General Queries	20%	88.0%	99.9%

Table 34, SEMOpX KPI Weightings and Targets Submission

SEMOpX has also proposed that an entitlement of 4% of internal Opex, which is currently applied to the SEMO price control, would not be proportionate as it would lead to an entitlement of circa €70,000 per annum and has proposed a potential entitlement of €200,000 per annum under these KPIs.

5.1.3 RA Proposal

The RAs broadly support the proposals and definitions for KPIs related to Auction Results, System Availability and General Queries with some minor changes to the definitions of each indicator. In addition, it is proposed that a requirement for website availability is added to the System Availability KPI. The definitions of each KPI have been amended below.

- 1. Auction Results:** The percentage of occurrences where the day ahead and intraday auction results are published within 1 hour of the target publication times through the auction trading system (ETS). The target times, as documented in the SEMOpX Operating Procedures, are;

 - DAM 11:55
 - IDA1 18:10
 - IDA2 08:40
 - IDA3 14:15.
- 2. System Availability:** Availability of the auction and continuous trading systems according to their required availability (i.e. 24/7) excluding any planned outages and website availability between 8am-6pm Monday to Friday. This is a ratio of the time in which systems are said to be in a functioning condition to the total time they are required to be available.
- 3. General Queries:** The percentage of occurrences where a general query received is resolved within 20 Business Days. This KPI aims to maintain efficiency and customer focus within SEMOpX. A general query is defined within the metric as any request logged through the SEMOpX helpdesk (info@semopx.com). Time spent for market participants to provide further information or accept resolution of a query will not be counted as part of the query resolution time. Nor will time be counted where a procedural change or system change is needed in order to close a query.

Proposals from interested stakeholders are also welcome on any key market information outlined in the Data Publication Guide and SEMOpX Operating Procedures that may be included in an additional KPI or as part of the proposed KPI related to Auction Results.

The RAs' proposed weightings and targets are shown in Table 35 below.

SEMOpx KPI	Weighting	Proposed Lower Bound	Proposed Upper Bound
Auction Results	50%	99.0%	99.9%
System Availability	30%	99.5%	99.9%
General Queries	20%	95.0%	99.9%

Table 35, RA KPI Weightings and Targets Proposal

The RAs propose that the potential KPI entitlement is set to 2% of internal Opex to reflect the smaller number of KPIs in comparison to those currently applied to SEMO. In the 2009/10 SEMO price control, four KPIs were introduced based on a reward mechanism equivalent to 2.5% of total internal costs. Based on the fact that three KPIs are proposed for SEMOpx the RAs propose to reduce this accordingly.

This would lead to a potential entitlement of approximately €65,000 per year.

Potential KPI Entitlement (March 2019 Prices €)	Provision under SEM-17-096	Forecast for PC Period			
		2018/19	2019/20	2020/2021	2021/2022
SEMOpx Submission	-		200,000	200,000	200,000
RA Proposal			65,489	65,743	65,981

Table 36, RA KPI Entitlement Proposal

6. Summary and Forecast Charges

6.1 Summary of Proposals

Tables 37 and 38 provides a summary of the proposals submitted by SEMOpX as part of this price control and the RAs' proposals in this regard.

March 2019 Prices	SEMOpX Submission				RA Proposal			
	2019/20	2020/21	2021/22	Total	2019/20	2020/21	2021/22	Total
Opex Submission	3,499,785	3,512,455	3,531,892	10,544,132	3,274,456	3,287,126	3,299,063	9,860,646
Return on Regulatory Asset Base	18,042	52,331	72,305	142,678	13,899	41,486	57,828	113,212
Depreciation	77,400	241,700	381,100	700,200	59,625	191,225	303,825	554,675
Margin Submission	174,989	175,623	176,595	527,207	81,861	82,178	82,447	246,516
KPI Incentive Entitlement Submission	200,000	200,000	200,000	600,000	65,489	65,743	65,981	197,213
Total	3,970,216	4,182,109	4,361,892	12,514,217	3,495,331	3,667,758	3,809,174	10,972,263

Table 37, Revenue Summary

March 2019 Prices	SEMOpX Submission				RA Proposal			
	2019/20	2020/21	2021/22	Total	2019/20	2020/21	2021/22	Total
Unpredictable Capex Submission	50,000	50,000	50,000	150,000	50,000	50,000	50,000	150,000
Predictable Capex Submission	774,000	869,000	525,000	2,168,000	546,250	669,750	356,250	1,572,250
Total Capex	824,000	919,000	575,000	2,318,000	596,250	719,750	406,250	1,722,250

Table 38, Capex Summary

6.2 Estimated 2019/20 Charges

For the purpose of the 2019/20 tariff year, the tariffs for the 2018/19 tariff year will be applied by SEMOpx and these are published in a separate statement of charges for 2019/20. Any over or under recovery based on the difference between these and the final charges to be included in the Decision Paper for this price control will be addressed through the K-Factor.

Estimated outturn SEMOpx Charges are included here for the 2019/20 tariff year for information only based on the proposed revenue set out in this Consultation Paper, a forecast traded volume of 79,192,000 MWh and 50 Exchange Members registered with SEMOpx. It should be noted that the estimated fee is for the tariff year 2019/20 only and that the SEMOpx fees will be subject to an annual approval process based on SEMOpx's approved revenues, applicable inflation and any k-factor.

SEMOpx charges are based on three elements; an entry fee to the exchange, an annual subscription fee and a variable fee per MWh.

Fee Structure	Approved 2018/19 Charges	Applicable 2019/20 Charges	Estimated fees based on this Consultation Paper ⁶
Once off entry fee (€)	5,000	5,000	5,000
Annual subscription fee (€/annum)	5,000	5,000	5,000
Variable trading fee DAM (€/MWh)	0.044	0.044	0.041
Variable trading fee IDM (€/MWh)	0.044	0.044	0.041

Table 39, Summary of Charges

6.3 Next Steps

Interested stakeholder's views on each of the proposals in this Consultation Paper are invited until 24 December 2019 and can be submitted to gkelly@cru.ie and Karen.Shiels@uregni.gov.uk.

⁶ To take effect in tariffs from 2020/21 with any changes between the final revenues in the Decision Paper and the applicable charges in 2019/20 to be addressed through the k-factor.