Revenue Recovery Principles for SEMO and Designated NEMO (SEMOpx) from I-SEM go-live

Consultation Paper

SEM-17-018

4th April 2016

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2 EXECUTIVE SUMMARY

The Integrated Single Electricity Market (I-SEM) is a new wholesale electricity market arrangement for Ireland and Northern Ireland. The new market arrangements are designed to integrate the all-island electricity market with European electricity markets, enabling the free flow of energy across borders.

The introduction of the I-SEM requires the development and operation of a number of systems and processes that sit at the heart of the new market, to facilitate and settle trades between energy traders (typically Generators and Suppliers). These central systems are being developed and operated by two distinct types of Market Operator (MO):

NEMO: Nominated Electricity Market Operators (NEMOs) will provide a platform for trading electricity up to a short time ahead[1] of delivery, and will then settle those trades; and

SEMO: The Single Electricity Market Operator (SEMO) is a monopoly body that will be responsible for balancing market settlement. This "balancing market" ensures payments are made in respect of any difference between the quantities of electricity a Generator or Supplier may have traded through a NEMO, and that they are recorded to have delivered or consumed across their meters.

To ensure that the I-SEM could be delivered, and that we could meet the requirements of CACM, a range of costs have been spent by the TSOs across a range of activities, including the development of SEMO systems, as well as the setup costs for an obligated NEMO (SEMOpx) which include the costs of market coupling.

These set up costs are being reviewed on an ongoing basis by the Regulatory Authorities[2], with the intent that these costs are recovered by the TSOs for Ireland and Northern Ireland (EirGrid and SONI) through their transmission charges.

The price controls considered in this consultation paper cover the recovery of costs that are incurred from the I-SEM go-live date[3] for both SEMO and SEMOpx (as the designated NEMO). This paper covers a number of policy issues that are relevant to both of these entities, as well as some policy issues that are of specific relevance to SEMOpx.

[1] NEMOs are only able to enter into trades up to "Gate Closure", which will initially be 1 hour ahead of physical delivery

[2] The Commission for Energy Regulation in Ireland, and the Utility Regulator for Northern Ireland.

[3] I-SEM "go-live" date is currently scheduled to be 23rd May 2018

Issues applying to SEMOpx price control

The RAs are minded to underwrite the establishment costs (costs associated with the establishment of SEMOpx and getting the market coupling systems in place) of SEMOpx through the TSOs charging basis. The RAs have come to this position as a result of the absolute need for at least one designated NEMO to be available for the I-SEM go-live (at least initially) the limited interest in providing that role in response to the public request made by the RAs in June 2015, as well as the licence obligation imposed on SEMO in its capacity as holder of the designation through the MO licences to fulfil its obligations as NEMO at all times during which the Designation is in effect.

There are a number of reasons why the revenue regulatory treatment of SEMOpx is important to consider. Firstly the I-SEM design is based on the Day Ahead Market and Intra-Day Market being the exclusive route to ex-ante energy market transactions, unlike other EU markets where bilateral contracts and OTCs provide a route to market. In addition to energy traded through NEMOs In each case, the I-SEM High Level Design specifies these should be the European Day Ahead or Intra-Day markets – which can only be accessed through a NEMO. This is an important consideration for the RAs due to the absolute need of ensuring that a NEMO is available, at all times, to allow market participants to trade. European legislation requires that at least one NEMO was designated by the RAs by 14th December 2015. There was limited interest from existing NEMOs in becoming a designated NEMO for the Ireland and Northern Ireland. As a result of this, the TSOs in Ireland and Northern Ireland were designated to carry out this function, according to the requirements specified in CACM.

Therefore, the importance of ensuring compliance with EU law as well as ensuring that a NEMO was available to market participants led to the RAs obligating the Market Operator to undertake the functions of a NEMO. Once designated, the Market Operator carried out a range of activities necessary for the ex-ante markets to be available for the I-SEM go live date, as well as for the I-SEM energy markets to be coupled with the energy markets in adjoining bidding zones, namely Great Britain. This has been done through the inclusion of licence obligations relating to the provision of NEMO services in the Market Operator licences. The RAs are minded that the establishment costs associated with market coupling and SEMOpx should be recoverable via the TSOs.

On the basis that the establishment costs of SEMOpx will be recoverable via the TSOs, there is consideration required of how SEMOpx's day to day business costs, i.e. Opex, should be treated. This includes whether the SEMOpx price control should be set on a "target" or "allowed" revenue basis.

A target revenue allows the Market Operator to recover variability in revenue above or below the target agreed at the outset of the control, whilst an allowed revenue would carry forward any under or over recovery over revenues to the subsequent year through a 'k' factor adjustment.

The RAs are seeking feedback on which approach is most appropriate, noting that the final decision on day to day business costs may be influenced by factors such as licence obligations, market certainty for participants and the competitive landscape.

The RAs consider that the proposals within this paper, including a potential target revenue regime with a corresponding cap and floor strikes the correct balance between reflecting the significance of ensuring that a NEMO was designated in 2015 but also ensuring that a level playing field is created for competing NEMOs following I-SEM Go-Live.

Issues relating to SEMO Price Control

Unlike SEMOpx, which operates in a competitive market, SEMO is a monopoly provider of the functions it provides in I-SEM. As SEMO is a comparatively asset light business, the RAs have conducted analysis on whether the current RAB WACC approach remains fit for purpose, as opposed to alternative approaches such as a margin based approach. The RAs have concluded that the current RAB WACC approach with an appropriate incentive mechanism continues to be appropriate for SEMOpx.

In addition, the RAs note that as SEMO is a monopoly provider, it operates in a different revenue regulatory sphere to SEMOpx. Specifically, the RAs conclude that the current allowed revenue regime will continue to apply to SEMO in I-SEM.

Issues relating to both SEMOpx and SEMO

As with any price control, a key focus will be to analyse the costs proposed by both SEMOpx and SEMO to form a view on whether those costs are efficient. The approach taken is consistent across both SEMOpx and SEMO regardless of whether SEMOpx costs are recovered under a target or allowed revenue approach.

Incentives and KPIs: The current SEMO price control has 8 KPIs and incentivises delivery by paying up to 4% of Opex revenue based upon attainment. These KPIs are predominantly based upon service delivery and availability of data. We are seeking feedback on whether these are fit for purpose or

should be amended or supplemented by other KPIs reflecting the quality of service and delivery for example.

We will also consider whether 4% of Opex revenue provides right incentive and remains appropriate and whether similar KPIs could be introduced into the NEMO price control that reflect data transparency requirements.

Length of Price Control: The first price control for the designated NEMO is expected to cover the period from I-SEM implementation to the end of the designation (2nd October 2019). This factor has influenced the RAs proposals regarding recovery of establishment costs and the proposals related to Opex recovery.

With respect to SEMO, its current operation is run down over the existing price control to March 2019. However, following the implementation of I-SEM a new SEMO with new roles and responsibilities will take effect. Our intention is to propose a price control to run to the end of September 2021, currently just over 3 years in duration.

It may be appropriate in the future to align the TSOs, SEMO and NEMO Price Controls, but given that SONI and EirGrid currently have non-coterminous price controls this aspect will be considered in future.

Basis for Charging: SEMOpx and SEMO will recover their costs through charges to its users (typically Suppliers and Generators). The price control will consider how these charges are structured, notably considering the balance between recovering costs on a "per user", "per MWh" or "per transaction[4]" basis. The RAs are seeking views on the appropriate balance of these charging bases, noting that this balance is impacted by factors such as the type of cost drivers, impact on energy competition e.g. a larger participant would pay more on a "per MWh" basis than it would on a "per participant" basis.

Funding of future capital costs: It is possible that SEMOpx and SEMO will have future capital costs, such as IT developments, after I-SEM go-live. It is then normal practice for these developments to be capitalised, and recovered over a number of years. These incremental capital costs would require a depreciation period. Historically, development costs for SEMO systems have been depreciated over

[4] "Per Transaction" would apply to the NEMO, rather than to the SEMO.

5 years. We propose to continue this for any systems required for SEMO for the I-SEM. The depreciation of incremental capex for SEMOpx would need consideration as part of the decision around any incremental capital projects submitted to the RAs.

Responses on any proposals outlined in this paper are requested by COB 16th May 2017. Responses in electronic form are preferred and may be sent to Gina Kelly gkelly@cer.ie and Joe Craig Joe.Craig@uregni.gov.uk

Stakeholders should note that the Price Control reviews consulting on the proposed revenue allowances for the SEMO and the NEMO are scheduled to be published in June with revenue decisions expected in October 2017.

3 Introduction

3.1 Overview of Single Electricity Market Operator (SEMO)

Functions under SEM and I-SEM

The Single Electricity Operator (SEMO) is a contractual joint venture (CJV) between EirGrid Plc and SONI Limited. SEMO is the market operator for the single electricity market which covers both Ireland and Northern Ireland. SEMO's role in the SEM is defined in section 1.3 of the Trading and Settlement Code, which sets out the rules, procedures and terms and conditions which all parties must adhere to in the market. SEMO's role is to;

'facilitate the efficient, economic and coordinated operation, administration and development of the Single Electricity Market in a financially secure manner'.

SEMO's operational and capital costs are currently recovered through Market Operator tariffs and fees which are levied on market participants. The functions of SEMO under I-SEM are outlined below.

1. **Balancing & Imbalance Settlement Operator**

Under I-SEM, imbalance settlement will be carried out by the SEMO to settle discrepancies between the amount of electricity that a company has contracted to produce or consume via the Day-Ahead (DAM) and Intra-day markets (IDM) and the amount of electricity which the company actually produced or consumed (as recorded on the relevant meters).

If a difference between contract and actual exists, a party is regarded as having an imbalance and these differences in quantity are settled at the imbalance price. SEMO will manage this ex-post settlement via the Balancing Market (BM).

2. **Capacity Remuneration Mechanism & Settlement of Capacity Payments and Charges**

SEMO will be responsible for the collection of charges and the distribution of payments to capacity providers (including Reliability Option difference payments) under I-SEM.

This will include the collection of all data necessary for that determination from the Capacity Delivery Body and metered settlement and pricing data, and the management of disputes relating to that data.

Revenue, charges and regulatory approval process

From a revenue perspective the Regulatory Authorities (RAs) are responsible under statute for setting the allowed revenues of the electricity market operators for the island of Ireland. To date, the RAs have established Price Controls for the Transmission System Operators (TSOs) and for the Single Electricity Market Operator (SEMO).

The EirGrid and SONI TSO Price Controls[5] are carried out by the CER and UR respectively, although there are certain common costs which are recovered via a 75:25 proportion through the Price Controls. The current TSO Price Controls run for a period of five years.

For SEMO the current Price Control began in October 2016 and runs until March 2019. This Price Control is composed of three periods: SEM active, SEM resettlement; and, SEM decommissioning. On the 23rd of November 2016 the SEM Committee communicated a stock take of the I-SEM go live date which resulted in the I-SEM go live date being altered to 23rd May 2018. As a result, the SEM-Active period below will be extended by eight months to May 2018. The SEM resettlement period and decommissioning period will also be extended to August 2019 and November 2019 respectively. A separate decision on the required allowances to facilitate SEM active will be made prior to the new tariff year in October. This is outside the scope of this consultation paper.

Period	SEM Active	SEM resettlement	SEM decommissioning
Initial End Date	September 2017	December 2018	March 2019
Revised End Date	**May 2018**	**June 2019**	**November 2019**

In line with previous price controls, SEMO's price control allowance is being recovered by EirGrid and SONI, per the agreed proportions of 75% and 25% respectively. As SEMO exists as a contractual Joint Venture (CJV) between the System Operator in ROI (EirGrid) and the System Operator for NI (SONI), SEMO price controls incorporate factors affecting each of the companies making up the joint venture, including financeability, Weighted Average Cost of Capital (WACC) and recharges.

Section 5 of this paper examines the current revenue principles approach that applies to SEMO with a view to assessing whether the approach is fit for purpose.

[5] The current EirGrid price control (PR4) runs from 2015 to 2020. The SONI price control also runs from 2015-2020.

3.2 Overview of Nominated Electricity Market Operator (NEMO)

Functions of the NEMO under I-SEM

The Capacity Allocation and Congestion Management (CACM) Network Code (Regulation EU 2015/1222) requires that a Nominated Electricity Market Operator (NEMO) is responsible for Day Ahead (DA) and Intra-Day (ID) Market Coupling. In addition, the I-SEM High Level Design details the energy trading arrangements for the new market.

The role of the NEMO(s) is to act as a market operator for the day ahead and intra-day markets in national or regional bidding zones; in this case the I-SEM. The core NEMO functions are receiving orders from market participants, having overall responsibility for matching and allocating orders in accordance with the single day-ahead coupling and single intraday coupling results, publishing prices and settling and clearing the contracts resulting from the trades according to relevant participant agreements and regulations. The detailed roles and responsibilities of NEMOs are set out in Article 7 of the CACM Regulation.

This function is new to the Irish electricity market and as such no entity has been responsible for this role in SEM. Therefore the RAS were required to designate a NEMO to carry out the functions of the NEMO in 2015. It is against this background that this consultation paper is published so as to provide an opportunity for the RAs to establish the revenue principles associated with entities which have roles and responsibilities conferred by SEM Committee as well as taking account of EU requirements in this regard.

The I-SEM design is based on the DAM and the IDM being the exclusive route to ex-ante energy transactions, i.e., the same markets as are used for cross-border market coupling and delivery within the I-SEM bidding zone. This means that the NEMO provides the only route to access the day ahead and intra-day markets. This differs from other markets, where parties are able to trade bilaterally, or using trading facilitators (e.g. brokers or power exchanges) that are not NEMOs. This is a unique aspect of I-SEM.

Background to designation under CACM

The Capacity Allocation and Congestion Management Regulation (CACM or the Regulation) came into force on 14 August 2015. Each Member State was required to designate a NEMO to carry out these functions by 14 December 2015. This requirement is laid out in Article 4 of the Regulation.

As NEMOs are an entity responsible for specific functions under the Regulation, Member States have discretion regarding the determination of whether the functions of the NEMO are in a competitive market or in a monopoly environment. These are set out in Article 4 and 5 of the Regulation. In the invitation for NEMO applications for I-SEM (SEM-15-033n) published on 13 May 2015, the Regulatory Authorities indicated that Ireland and Northern Ireland did not intend to invoke Article 5 of the Regulation, meaning that a national legal monopoly has not been declared in either Ireland or Northern Ireland.

At the time of the initial designation, consideration was given to the fact that the roles and responsibilities of the NEMOs would require the ability to facilitate certain requirements of the I-SEM market in addition to the requirements set out in Article 6 of the Regulation. Under the CACM Regulation explicit reference was given to the complexity of implementing the DA and ID arrangements for the island of Ireland. This includes references to transitional arrangements that will be required in Ireland and Northern Ireland to ensure full compliance.

The RAs received only one submission each for Northern Ireland and Ireland for initial designation; SONI Ltd for Northern Ireland and EirGrid Plc for Ireland. Both SONI Ltd and EirGrid Plc were successful in their application on the basis that they fulfilled the requirements of Article 6 of the Regulation. The SONI/EirGrid designation is based on establishing a joint venture (SEMOpx) to deliver the NEMO, with EPEX spot providing the required capabilities to interface with the Market Coupling Operator.

Cost Recovery under CACM

Having designated EirGrid PLC and SONI Ltd as the NEMOs for Ireland and Northern Ireland respectively, it is important to note the aspects of CACM that outline analysis on costs.

Article 6(c) of CACM states that NEMOs; '*shall be cost efficient with respect to single day ahead and intraday trading*'.

As the competent authorities for the designation of NEMOs in Ireland and Northern Ireland, this suggests that at a minimum the RAs hold a responsibility to review the costs associated with the establishment of NEMO functions for the I-SEM bidding zone in line with the cost categorisation

under CACM Article 80[6]. For clarity, this paper is focused on the revenue principles underlying the national costs associated with the establishment of SEMOpx only.

Article 71(1) of CACM states that; '*Costs relating to the obligations imposed on TSOs in accordance with Article 8, including the costs specified in Article 74 and Articles 76 to 79 shall be assessed by the competent regulatory authorities. Costs assessed as reasonable, efficient and proportionate shall be recovered in a timely manner through network tariffs or other appropriate mechanisms as determined by the competent regulatory authorities.'*

Similar to Article 6, this suggests that at a minimum, a review of costs is required by the RAs and that regulatory oversight of the associated charges are required where TSOs have a function under the Regulation. Given the importance of the NEMOs to the I-SEM, and the fact that the island of Ireland has not, to date had such a function established in its energy market, it is prudent that the RAs consider how SEMOpx should be revenue regulated.

NEMO licence conditions

In addition to designation of SONI/EirGrid as NEMOS for Northern Ireland and Ireland, the RAs also conducted a review of the licences pertaining to the Market Operator. The purpose of this was to ensure that there was explicit reference in the MO licences that would ensure that NEMO functions would be available to market participants from I-SEM Go-Live, in particular given that at the time of designation only one entity had applied to carry out the functions in Ireland (EirGrid) and one entity in Northern Ireland (SONI) and also due to the absolute need to have at least one NEMO operational by go-live.

The inclusion of NEMO functions within licence conditions is not a requirement of the CACM Regulation, but the RAs decision to include such licence conditions is indicative of the specific nature of the requirements of I-SEM. In particular this was to ensure that NEMO functions would be available from I-SEM Go-Live, given that NEMOs provide the single route to market for day ahead and intraday services.

As a result of obligations being imposed via the Market Operator licences related to the provision of NEMO services, SEMOpx is neither a legal monopoly nor a truly fully deregulated competitive

[6] Under CACM the NEMO costs of establishing, amending and operating a single day-ahead and intraday coupling should be broken down into three categories:

- Common costs resulting from coordinated activities of all NEMOs
- Regional costs resulting from activities of NEMOs cooperating in a certain region
- National costs resulting from activates of the NEMOs in a Member State

company, as there is a regulatory requirement on the Market Operators to provide such a service, which have a bearing on the proposed revenue principles approach to SEMOpx costs.

The EirGrid Market Operator licence condition 3A and the SONI Market Operator Licence condition 15A specifically refer to the NEMO functions that the Market Operators are obliged to carry out, which in turn references the requirements of the Regulation. As there are obligations placed on the Market Operators to carry out the functions of a NEMO while holding a Designation under CACM, the RAs consider that this is a factor which requires consideration in terms of SEMOpx's establishment costs.

There are other obligations placed on the Market Operators, such as the requirement to carry out certain functions known as the Agent of Last Resort (AOLR). This is outlined in condition 3 of the EirGrid Market Operator Licence and condition 15 of the SONI Market Operator licence.

In essence, the AOLR requirements obligate the Market Operator to provide trading arrangements *to eligible generators in the market and to act as an aggregator for generators where necessary.* This aspect is considered later in section 4 of this paper.

Section 4 outlines the RAs initial thinking on how a Price Control for SEMOpx may work in practice.

4. PRICE REGULATION OF NEMO

4.1 PRICE REGULATION PROVISIONS UNDER CACM

As detailed previously, the CACM Regulation provides some guidance in terms of the revenue regulation of NEMOs, in particular that NEMOs shall be "cost-efficient" and shall "*keep separate accounts for MCO functions and other activities in order to prevent cross-subsidisation"* (Article 5). Article 76 of the CACM Regulation deals specifically with the ability of NEMOs to recover the costs of establishing, amending and operating single day-ahead and intraday coupling once they have been established as either common, regional or national costs and the role of the competent NRAs in recovery of costs. For the purposes of this paper the focus is on national costs.

Under this Article, NEMOs are only permitted to recover costs (over and above those borne by TSOs) which are "*reasonable and proportionate*". The RAs are of the view that CACM acknowledges the need for oversight by NRAs of the cost-efficiency of those carrying out NEMO activities, in particular noting that at the time of the designation there was no certainty that any other NEMO would offer market participants a choice of service provider.

This indicates a requirement for a revenue control model to be applied in the case of SEMOpx. In addition, there is a need for a revenue control for the trading facilities offered by the NEMOs (power exchanges, auctions etc) to ensure all market participants are assured of market certainty and continuity of service – at least until effective competition between NEMOs has been established. This is reinforced by the licence requirements imposed on the Market Operator, which obligate the MOs to carry out the functions of a NEMO in its capacity as the holder of a Designation. Such licence obligations do not apply to NEMOs that operate in other markets or indeed to any NEMOs passporting into I-SEM, as any passporting NEMO may exit the provision of NEMO services in the I-SEM bidding zone at any time.

In consideration of the significance of guaranteeing that a NEMO was designated and would be available to market participants from I-SEM go live and in light of the licence obligations imposed on the Market Operators, the RAs are of the view that revenue regulation offers the most suitable form of regulation of SEMOpx as it takes account of the specific circumstances related to the establishment of this NEMO, and its importance in terms of providing a route to access to the day ahead and intraday markets in I-SEM.

It should be noted that where new NEMOs enter the market, the RAs would review the requirement to continue revenue regulation of SEMOpx towards the end of the designation period and corresponding Price Control period proposed in this consultation paper with a view to ensuring that a competitive environment is fostered amongst competing NEMOs. For clarity, as no obligations have been imposed on NEMOs who may passport into the island of Ireland to provide NEMO services, the same level of revenue regulation will not apply to passported NEMOs, or to NEMOs seeking designation in future.

Given the RA's interpretation of CACM, the licence obligations that have been placed on SEMO related to the provision of NEMO functions and the fact that SEMOpx will at least initially operate as a single service provider, a price control will apply to SEMOpx. The regulatory principles for this price control are being consulted on as part of this paper.

4.2 PRICE REGULATION PARAMETERS

The following section outlines the parameters of the Price Control. This provides an overview of the options relating to capitalised setup costs, incremental Capex, day to day business costs (Opex), obligations, tariff structures and the length of the Price Control.

Capitalised setup costs and incremental Capex

Capitalised setup costs refer to the costs being incurred to establish the functions of the NEMO before it is operational and are currently being borne by the TSOs as part of the overall I-SEM implementation project. Such costs include resources focused on readiness, operational capability, central systems and services and costs incurred in order for market coupling to go live.

Generally speaking such setup costs can be treated as capitalised under accounting conventions (IFRS) where there is a future economic benefit and the costs can be reliably measured. It should be noted that the RAs have been conducting periodic reviews of the I-SEM implementation costs for efficiency as part of the overall project.

To date, the costs of establishing SEMOpx are being borne by the TSO and the Market Operator licences oblige the MO (which in itself is a CJV of the TSOS) to carry out the function of the NEMO as

well as act as AOLR. The RAs have discretion as to the level of establishment costs that will be recovered directly from the NEMO and the level that will be recovered from other market operators such as the TSOs.

Article 76 (2) of the CACM Regulation states that;

'*subject to agreement with the NEMOs concerned, TSOs may make a contribution to the costs provided for in paragraph 1 subject to approval by the relevant regulatory authorities*'.

This indicates that there are a number of mechanisms available regarding the recovery of establishment costs incurred by SEMOpx, subject to approval from the RAs. These include;

1. Full recovery of NEMO establishment costs through SEMOpx
2. Partial recovery of NEMO establishment costs through SEMOpx
3. No recovery of NEMO establishment costs through SEMOpx

Full recovery of NEMO establishment costs through SEMOPX

Under this approach, all costs associated with the NEMO establishment would be recoverable through SEMOpx tariffs. Certain aspects of this approach should be reflected on when assessing this option.

Firstly, SEMOpx is designated until 2019, meaning the period for the revenue control is relatively short. Secondly, as SEMOpx functions in a competitive NEMO market, there is no certainty that it will continue to provide NEMO services beyond 2019. This provides the RAs with a number of options with regards to full establishment cost recovery from SEMOpx.

The first option is for the establishment costs to be recovered within the price control period. This option would require the standard depreciation profile for IT under I-SEM to be reduced from five years to circa 18 months, as the initial designation period ends on the 2nd of October 2019. A price control beyond this initial designation period would assume that SEMOpx will apply for re-designation twelve months before the end of the initial designation period. Whilst an 18 month depreciation period would ensure that the establishment costs are recovered within the Price Control, it would result in higher tariffs to account for accelerated depreciation.

An alternative option would be to apply a standard depreciation profile of five years, meaning that tariffs would not be as high as where accelerated depreciation is applied. However, if at some point in the future SEMOpx decides to exit the market, then this would need to be considered in terms or

residual establishment costs that may not have been recovered in the initial designation period i.e. up to 2019.

This could include the residual establishment costs being recovered via the TSOs if SEMOpx exited the market at the end of the designation period or before all establishment costs had been depreciated fully. This would create a Correction Factor (a K-Factor), but would ensure that whilst the NEMO was functioning it reflected all costs, including those associated with the establishment of the services it offered.

Partial or no recovery of NEMO Capex costs through SEMOpx

Alternative options may also be considered. For example, some establishment costs may be included in the TSOs RABs reflecting the fact that SEMOPX is a CJV between EirGrid and SONI as Irish and Northern Irish TSOs. As such it is the TSOs that have borne these establishment costs to date and therefore it is the TSOs that may recover the establishment costs. This approach is consistent with policy decisions which are being considered in other jurisdictions.

Some of the costs associated with SEMOPX are driven by licence requirements and policy decisions related to SEMOpx, such as obliging it to provide services to all market participants and the series of costs that are being incurred for market coupling. These costs to establish the market coupling capability with adjoining bidding zones, i.e., Great Britain, and are incurred on a one off basis (which may benefit future NEMOs in the market). Future NEMOs in a competitive market will not have faced the same level of upfront obligations and associated costs placed on SEMOpx since its designation in 2015. This distinction is important from an establishment cost recovery perspective at a national level (as opposed to regional or common costs) as it is solely SEMOpx (through the TSOs) that has incurred a level of setup costs as a result of the obligations imposed on it by the RAs.

As such, there may be merit in approaching SEMOpx establishment costs from the point of view that some costs should be borne by the TSOs, given the specific nature of the NEMO's establishment. This includes the fact that it was the only NEMO to apply for designation and meet CACM designation requirements by the 14th of December 2015. Permitting recovery of a certain proportion of costs on the TSOs RABs would reflect the fact that these obligations placed on SEMOpx require a commensurate Capex to ensure these services are available and ultimately are being provided by the TSOs in their capacity as Market Operators.

These obligations were imposed at the time of Designation and reflect a condition placed on the Market Operator to fulfil its obligations to provide NEMO functions during the Designation period

regardless of the entry (or exit) of other NEMOs into the I-SEM market. It may thus be reasonable to conclude that a proportion of establishment costs are recovered via the TSOs.

Similar to option 1 above, consideration would have to be given to the fact that if SEMOpx exited the market, then any residual establishment costs that had not been recovered through the SEMOpx price control may need to be transferred to the TSOs for recovery.

As an alternative to partial recovery, full establishment cost recovery could be attributable to the TSOs. This reflects the fact that the TSOs are currently bearing the costs of establishing the functions of the NEMO. Allocating the costs to EirGrid and SONI may also align with established cost sharing mechanisms whereby 25% of costs are attributed to SONI and 75% attributed to EirGrid which is already agreed. This approach has been agreed as part of the I-SEM Implementation costs.

In addition, a full recovery from the TSOs approach may have merits in terms of potential developments of the NEMO market. Where SEMOpx exited the market, then the RAs role in revenue regulation of SEMOpx would cease, as there would be no consideration required of where residual establishment costs would be recovered.

Both options of partial and full recovery of Capex from the TSOs would be compatible with Article 76 (2) of the Regulation where approved by the RAs. This Article states that "*Subject to agreement with the NEMOs concerned, TSOs may make a contribution to the costs provided for in paragraph 1 subject to approval by the relevant regulatory authorities*".

Taking account of the agreed approach with the TSOs on I-SEM recovery options, the requirements of CACM and the licence obligations placed on the Market Operators to provide NEMO services, and the one-off nature of the costs associated with establishing market coupling for the first time in the I-SEM bidding zone, the RAs are of the view that recovery of the capitalised set up costs should be attributed to the TSOs, and depreciated over a five year period. The review of the overall I-SEM implementation costs will be the subject of a further publication from the RAs.

Incremental Capex

During this price control, a limited amount of capital expenditure in addition to the capitalised set up costs described above may be incurred by SEMOpx. The depreciation of incremental capex for SEMOpx would need consideration as part of the revenue submission to the RAs and subsequent revenue consultation and decision papers.

At this time the RAs are proposing that SEMOpx establishment costs are recovered through TSO revenues, with any incremental Capex incurred throughout the duration of the price control to be considered separately. Feedback is requested on this proposal.

OPEX

Opex costs will include resources and facilities necessary for the NEMO to carry out its functions i.e. day to day business costs. In addition, there may be Opex related to the functioning of the price coupling algorithm. The details of the Opex requirements will be included in the Consultation Paper on NEMO revenues.

As suggested above the RAs are of the view that in consideration of the specific circumstances pertaining to SEMOpx, it is anticipated that the primary cost driver of SEMOpx will be the Opex requirements of the entity to run its day to day business. There are two options for the treatment of efficient[7] OPEX for SEMOpx;

1. The operating expenditure of the NEMO is based on a **target revenue**. This means that if SEMOpx do not recover the target revenue no correction factor is applied. This approach allows revenue regulation to end at any time as there is no ongoing obligation to correct under or over recoveries.

2. The operating expenditure is based on an **allowed revenue**. This means that if SEMOpx does not recover or over recovers the allowed revenue then a correction factor applies. Under this approach correction factors would need to apply in later years, which means that

[7] In any case, the price control will allow the recovery of "efficient" costs, with benchmarking and other approaches used to support an assessment of which costs are efficient.

consideration would have to be given as to how the RAs would exit revenue regulation in the future.

A target revenue approach allows for the RAs to exit revenue regulation in a more straightforward manner, as no ex-post K-factors would apply. In particular, given that NEMOs may operate within a competitive market, this approach would align more with potentially competing NEMOs as such revenues would not be guaranteed by the RAs.

A tariffing approach that could be considered alongside a target revenue approach would be a cap and floor approach, whereby SEMOpx is afforded a range within which tariffs may be applied. This range would ensure that tariffs do not permit a super normal profit but also afford SEMOpx flexibility to set tariffs at a level that reflects the competitive market in which it will operate. Under a cap and floor regime, tariffs could operate within a range which allows SEMOpx an element of discretion to react to market conditions, whilst also affording flexibility to recoup efficiently incurred costs as established in the price control.

Nonetheless, the RAs are cognisant that the specificities of SEMOpx has resulted in obligations being placed on the MO in its capacity as holder of the NEMO designation that would indicate a regulatory regime with an allowed revenue approach creates more market stability and certainty for I-SEM market participants, in particular ahead of Go-Live.

We have previously outlined the obligation relating to the provision of NEMO functions. In addition, 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)[8]. This regulatory requirement may result in costs which are specific to I-SEM requirements and as such require due consideration.

The RAs are considering the merits of either a target revenue (with a cap and floor regime) or an allowed revenue approach to Opex recovery for SEMOpx. At this time the RAs are requesting feedback on the differing approaches regarding Opex recovery.

[8] As the AOLR obligations are contained within the MO licence, the appropriate entity to bear the cost recovery associated with this obligation will be decided in due course.

Consideration of market entry, market exit and deregulation

In relation to the principles outlined concerning the price regulation of SEMOpx, this consultation paper considers the historical factors that led to the designation of SEMOpx, the rationale for the inclusion of certain licence conditions and the potential underwriting of certain establishment costs.

In looking forward, this paper also seeks to address the period of cost recovery under this price control up to the end of the initial Designation period. The RAs are also cognisant of the need to consider their future role in revenue regulation and the role competition plays in the market.

The preceding discussion concerning the treatment of establishment costs, incremental Capex and Opex seeks to consider both historical events and future impacts on SEMOpx operating within a competitive environment.

The proposals outlined by the RAs are influenced by a requirement to ensure a level playing field along with recognition of the obligations placed on SEMOpx at the time of designation. At this time the RAs are minded to conduct a price control for the remainder of the designation period. The future role of the RAs in a price control would need to be considered closer to the end of this designation period.

The approaches proposed for the recovery of establishment costs, coupled with proposals on recovery of future Opex of SEMOpx aim to strike a reasonable balance between certainty for market participants while fostering a competitive environment amongst NEMOs from I-SEM Go-Live.

Obligations on data transparency and service quality

SEMOpx's obligations to market participants and others are well enshrined under CACM and associated regulations referenced therein, and the core task of operating the market is not expected to require onerous definition within the Control itself.

However in the SEMOpx context, and in the sense that the I-SEM does not yet have well established working protocols, it may be appropriate to obligate SEMOpx more specifically regarding:

- the content, format, regularity, and integrity of data that must be made public
- the level of service quality provided to participants

Additional obligations may be identified by interested parties under the consultation scheduled later in 2017.

It may be further appropriate to consider development of an incentive mechanism tied to these obligations, potentially via the application of unambiguous and measurable Key Performance Indicators (KPIs).

Tariffs

This consultation paper is focused on the revenue principles that will underpin the SEMOpx and SEMO in I-SEM, as opposed to the specific tariffs that will apply. At this time it is proposed that indicative tariffs will be published with the consultation paper on the NEMO price control in July 2017. The RAs are aware of the need for visibility of these tariffs in order for market participants to make decisions on budgeting, financial modelling, and participation in the day ahead and intraday markets and will endeavour to ensure that final tariffs are as close as possible to those indicated in the consultation paper.

One of the key considerations for these tariffs is their structure and the range of options that will apply to different market participants. The price control will consider how these charges are structured, notably considering the balance between recovering costs on a "per user", "per MWh" or "per transaction" basis. The RAs are seeking views on the appropriate balance of these charging bases, noting that this balance is impacted by factors such as;

- **Cost drivers**: The factors that drive the costs of SEMOpx will need to be considered as part of the price control. This will include an assessment of the proportion of fixed costs, versus the level of costs incurred based on the number of participants, or the number of MWh traded.
- **Impact on energy competition:** The charging basis will determine how the costs of SEMOpx are allocated to specific participants – and so impact the competitive landscape in Generation and Supply. For example, a larger participant would pay a greater proportion of costs on a "per MWh" basis than it would on a "per participant" basis.
- **Predictability of charging base:** the different bases for charging may be more or less difficult to forecast – and hence set a stable price. For example the number of participants may be relatively stable, and the MWh generated and consumed is reasonably predictable; however, these factors may be less predictable depending on the level of competition.

Across Europe, there are a variety of tariff structures currently in operation. Based on comparisons with other NEMO fees across the EU, exchange fees are comprised of a combination of fixed and variable fees. Fixed fees include entrance fees and annual subscription fees for the day ahead and intraday markets. An overview of tariffs across a number of Exchanges in Europe is presented below,

but please note that this is for information purposes only and tariff structures specific to I-SEM are not considered in this paper.

- Entrance fees range from between €6,000-€25,000, but are not charged across all exchanges.
- Annual subscription fees can be combined or split between the day ahead and intraday markets, and range between €10,000-€32,000 for the day ahead markets and €5,000-€10,000 for the intraday markets. Subscription fees for day ahead markets are generally higher.

Typical Fee structures	
Entrance Fees	One off, Intra-day one off
Annual subscription fees	Trading DA, Trading ID, Trading technical
Variable fees	Trading DA, Trading ID, Clearing DA, Clearing ID,

Variable fees for the day ahead market range between 0.025 and 0.070 €/MWh, and for the intraday market range between 0.022 €/MWh to 0.100 €/MWh. In some cases smaller participants can waive the annual fee and pay a higher day ahead market variable fee, with a specified floor for fees per annum. The form of these tariffs varies across the Europe and different NEMOs apply different structures.

Typical DAM/IDM Exchange Fees	
Entrance Fees (once off)	€6,000-€25,000
Annual subscription fees – day ahead market	€10,000-€32,000
Annual subscription fees – intraday market	€5,000-€10,000
Trading – technical	€3,500-€8,000
Variable fees – day ahead market	0.025-0.040 €/MWh
Variable fees – intraday market	0.022-0.100 €/MWh

The RAs are of the view that the form of the tariffs that will apply are important so as to ensure that the unique circumstances of I-SEM, where all (including many smaller) participants are required to use a NEMO for ex-ante trades, is facilitated. In other jurisdictions smaller market participants have other routes to the wholesale market including bilateral agreements and OTCs which are not available in I-SEM.

As such, the RAs are cognisant that the mixture of fixed vs. floating charges must ensure that no undue tariff barriers are created that would discourage a range of market participants from participating in the market. Other jurisdictions apply a 'light' membership structure aimed at smaller participants which facilitates participation in the ex-ante markets. Stakeholder feedback on this issue is specifically requested from market participants.

Duration of Price Control

The first price review for the designated NEMO is expected to cover the period from the 23rd of May 2018 (the Go-Live date for I-SEM) to the 2nd of October 2019. At least twelve months prior to the expiry of this initial period the designated NEMO in Ireland and Northern Ireland will be required to confirm if it wishes to continue to be a designated NEMO.

Currently, it is anticipated that this Price Control will run until the end of the initial designation period (Baseline option). As the CACM regulation requires an initial designation of four years, the designation period will end on the 2nd of October 2019. At this point a decision will be made on the need, timing and duration of the next price control. The duration of the Price Control affects the recovery of Capex in particular, as RA decisions will need to be cognisant of this.

Summary of proposals:

The proposed principles for the price control for SEMOpx are outlined below. The RAs are seeking comment and feedback from interested stakeholders on these principles.

- Given the RA's interpretation of CACM, the fact that only one NEMO applied and was designated and the importance of having an operational NEMO for go-live of the I-SEM, licence obligations have been placed on SEMO to provide NEMO services.
- At this time the RAs are proposing options for the recovery of SEMOpx's capitalised establishment costs, whilst being cognisant of the fact that the Price Control period is relatively short.
- Opex will either be based on a target revenue or allowed revenue regime, taking account of fostering a competitive environment and licence conditions.

- Obligations on SEMOpx regarding data transparency and service standards otherwise incremental to CACM may be appropriate. Views on the need or benefit of having these tied to an incentive mechanism using Key Performance Indicators are being sought.

- The framework and content of SEMOpx's pricing will require public consultation through the price control process. A number of pricing options are currently being considered with the aim of facilitating participation by the full range of market participants (including smaller participants) in the I-SEM.

- It is proposed that the price control will run until the 2nd of October 2019. At this point a decision will be made on the RA's role in revenue regulation of SEMOpx.

Price Regulation of SEMO

5.1 PRICE REGULATION PARAMETERS

Under the Single Electricity Market, SEMO carries out certain functions in the wholesale market. The responsibilities of SEMO are set out in the SEM Trading and Settlement Code and defined in Section 1.3 of the Code which states that the role of SEMO is to;

"*faciliate the efficient, economic and coordinated operation, administration and development of the Single Electricity Market in a financially secure manner".*

With the introduction of differing functions in the I-SEM, the functions of SEMO will alter. For example, under I-SEM SEMO will be responsible for Imbalance Settlement Operator functions and Settlement of Capacity Payments and Charges. As there will be a change in the responsibilities the Price Control for the functions carried out by SEMO will inevitably also change.

SEMO's operational and capital costs are recovered through Market Operator tariffs and fees, which are levied on market participants. To date, the revenue requirements have been set as one, and have been apportioned based on comparative levels of energy consumption in Republic of Ireland and Northern Ireland on a 75% and 25% split.

The SEMO business is unique in a number of aspects. SEMO's organisational structure is a contractual joint venture between the system operators and is therefore not a separate legal entity. Some aspects of the price control have to include consideration of factors affecting the parent companies e.g. financeability (Parent Company Guarantee), Weighted Average Cost of Capital (WACC) and recharges. The market operated by SEMO are dual currency (£ and €), with SEMO (at least in the first instance) funding any resulting currency exchange risk. Secondly, the all-island market operator is cross-jurisdictional and is governed by two Market Operator licences issued by the two RAs on the island. It should be noted that these aspects that are unique to SEMO currently apply and are expected to apply in the I-SEM.

Scope of price control

The scope of this price control will include allowances in relation to the operation of SEMO under I-SEM, and the new activities of SEMO under the new market. There are a number of specific areas for the SEMO price control under I-SEM which are considered in this consultation paper. These include;

- Whether the current regulatory regime for SEMO, as detailed in the most recent price control, should apply or whether revision is needed to the existing revenue recovery principles and mechanisms.
- OPEX RPI-X approach to incentivise efficiency.
- Incentivised CAPEX approach and rate of return regulation.
- The use of key performance indicators.
- Implications of new Market Operator licence obligations.

This price control will be the first such control under I-SEM and will include provisions for the new market. It is envisaged that the following price control will take a 'business as usual' approach as opposed to the 2016-19 price control which looks at the winding down of the SEM.

Revenue basis for SEMO

SEMO has a relatively low asset base in comparison to utility companies such as ESB Networks, NIE, or Gas Networks Ireland with large RABs. The capital projects that are undertaken by network utilities are remunerated via the Weighted Average Cost of Capital (WACC) which recovers the return on capital employed in the capital projects.

Up to 2010, price controls for SEMO were based on rate of return regulation for Capital Expenditure with Operational Expenditure treated on a pass-through basis. This form of regulation provided limited incentive for SEMO to reduce its costs. From the 2010 SEMO Price Control Opex incentives were introduced.

As such, SEMO is regulated using an Opex + Cost of Capital approach, whereby the total revenues recovered are the sum of Operating Expenditure plus the return of and on capital (depreciation and WACC). In addition, incentives and efficiencies have been applied through the use of RPI-X and Key Performance Indicators. For example, for the 2016-2019 Price Control SEM Committee decided that the Cost of Capital would constitute €6.36m. This is comprised of the return

of (depreciation) and on (WACC) capital. In contrast the Operating Expenditure for SEMO was set at €13.28m. Of total revenues allowed, some 66% constituted Operating expenditure.

This indicates that SEMO has a relatively higher Operating Expenditure to Cost of Capital ratio, at least in the 2016-2019 Price Control. This partially reflects the fact that the SEM was being wound down at the time and therefore any Capex investment was expected to be minimal. However, that is not to say that Capex investments have always been minimal. For example, as part of the 2010-2013 Price Control SEMO Capex investments were higher at 10.6m versus Opex of €25.5m. This indicates that although SEMO is currently in a phase of being a more Opex oriented entity, this is not to say that it does not have sizeable Capex investments which may be more 'lumpy' i.e. occur more sporadically than other regulated utilities which may have an ongoing capital investment programme e.g. replacement of degrading assets.

As part of the forthcoming Price Control the RAs are minded to continue to apply the current RAB WACC approach to SEMO. The RAs are of the view that this approach is appropriate for SEMO as it represents a balance between ensuring that all Operating costs are recoverable and that SEMO is able to finance the Capex projects it may be required to undertake by incorporating a blended WACC of the two parent companies i.e. EirGrid and SONI. The RAs are of the view that the WACC RAB approach to SEMO is robust and quantifiable. This is because the respective WACCs of the parent companies can be verified using market data and therefore is transparent for end customers.

Margin based approach to SEMO

Alternative approaches can be taken to the SEMO price control and there are examples of price regulation where a margin approach is taken rather than using the WACC RAB approach. A margin approach is fundamentally different in two aspects. Firstly, the margin is applied on total turnover of a company. This differs from the RAB WACC approach where cost of capital is only applied to Capital projects. Operating expenditure does not receive a "reward" with the exception of any incentive payments that may be linked to KPIs of the company.

A margin approach does not have a robust and proven mechanism to determine the level of margin that is reasonable. This differs from the WACC approach, where there are several models (including CAPM – the Capital Asset Pricing Model, Dividend Growth Model and others) that can be used to analyse and evidence the required rate of return. The determination of an appropriate margin would be a significant departure for SEMO as a regulated utility. In addition, there is no tried and tested approach for determining what an appropriate margin may be. However, analysis suggests that margin based approaches have been applied to entities that operate in the United Kingdom have

applied EBIT or EBITDA type approaches which are based on accounting ratios. (Source: Deloitte, Assessment of Ofgem's Rate of Return Methodology for DCC).

In addition, the analysis undertaken by the RAs indicates that the use of margin regulation is most commonly applied in final retail prices. Examples of this include the former ESB and Bord Gáis Energy final retail tariffs in Ireland and Power NI tariffs in Northern Ireland. The margin set for the 2014-2017 price control was 2.2%. The margins set for such retail activities have in the past ranged between circa 2-3% (based on fostering competition so as to allow for deregulation of final retail prices to occur).

The Power NI Power Procurement Business (PPB) is another example of a margin-based approach. The business currently purchases power under long term contracts from generators to sell into the SEM pool. If there is a mismatch (positive or negative) between PPB's cost of sales i.e. the payments it makes to generators under the contracts and revenues (pool receipts, difference payments and PPB allowed price control amount) then that amount will be collected or rebated via the Public Service Obligation (PSO) levy. The existence of this arrangement enables PPB to recover any shortfalls between costs and revenues from Northern Ireland customers. PPB's profit margin is defined in the Price Control along with a number of incentives.

Internationally a margin approach has been taken to the Scottish retail water industry and to smart metering companies in the United Kingdom (DCC), which was the subject of a competitive procurement process. DCC holds a monopoly position and is a "CAPEX light" company with a price control conducted by the British regulator Ofgem. As part of its revenue control, DCC incurs costs and passes these onto end users. Ofgem reviews these costs after the end of the regulatory year in which the costs were incurred. This is an 'ex post' approach to DCC's price control. The value of baseline margin allowed each year is fixed in the licence. Each July, DCC can apply for an adjustment to the values in its licence. The licence provides criteria related to likely and material changes to its business activities, risks and timescales or deadlines, which DCC must demonstrate have been met in its application.

Although these companies provide examples of where margin approaches have been applied the RAs are of the view that these companies are significantly different from SEMO.

SEMO does not operate in a competitive market and is therefore not expected to be a profit raising entity. In addition, regulated retail margins are often set for incumbent suppliers at a level that will allow new entrants to compete where deregulation of the market is taking place. As such, a margin encourages new entrants to compete against the incumbent supplier. SEMO is a CJV of the TSOs

which also operate under a RAB-WACC approach. As such, the functions it carries out are not the subject of competition, nor will they be in the foreseeable future.

Regulatory stability of SEMO

The RAs have considered the merits of whether to continue to apply the RAB WACC approach to SEMO or move to an alternative approach such as margin application. The RAs are of the view that the RAB WACC approach which has been in place to date has been sufficiently robust and transparent to the benefit of customers on the island of Ireland whilst ensuring that SEMO is capable of financing its cost of capital, and therefore capable of prudent investments. As such, the RAs propose that the current RAB WACC approach will continue to apply.

CAPEX

The RAs propose to continue to apply the current RAB WACC approach to Capex. The section below outlines the proposed treatment of Capex for SEMO in the I-SEM.

The most recent SEMO price control used rate of return regulation for SEMO's historical and new CAPEX. This method of regulation provides a return to SEMO based on their Regulatory Asset Base (RAB). SEMO's RAB is calculated based on the actual historical costs of their RAB, depreciated on a straight line basis over five years and increased each year for any RAB additions, which are then subject to the same depreciation policy.

The RAB value is indexed each year, to account for inflation, and a real rate of return (representing compensation for risk and the opportunity cost of the capital) is provided. This return is referred to as a Weighted Average Cost of Capital (WACC) and is directly derived from blending the WACCs applicable for EirGrid and SONI in line with the specified proportions (currently 75% / 25% respectively).

Any outstanding k-factor amount and allowances detailed in the decision paper on the SEMO Price Control for 2016-19 will need to be recovered as part of an appropriate tariff mechanism in the I-SEM. Indicative tariffs for I-SEM be published as part of the consultation paper on the next SEMO price control, which will account for operating costs under I-SEM.

It is proposed that CAPEX is regulated by rate of return regulation as in previous SEMO price controls.

OPEX

The current SEM Price Control is composed of three phases, each of which have a designated period of time. The initial timeframe for I-SEM implementation envisaged that the reformed market would be in place for October 2017. However, as the timeframes have since been adjusted for I-SEM Go-Live, the time will also need to be adjusted.

Period	Timeframe	Adjusted timeframe
SEM Active	October 2017	May 2018
SEM Resettlement	M + 13 months	M + 13 months
SEM decommissioning	3 months	3 months

Under the current price control for SEMO, the use of Revenue Cap regulation (inflation-X) was considered to incentivise SEMO to reduce costs by increased efficiency of processes and lower input prices. RPI-X or Revenue Cap Regulation has also been applied in previous SEMO price controls. Any efficiency and price savings would be retained by the regulated company while overspends would be absorbed by the regulated company unless approved by the RAs on the basis that they have been efficiently and prudently incurred.

As the required Opex under the SEM resettlement and decommissioning periods is uncertain, with no comparable entities decommissioning for benchmarking of costs, at the time of the most recent price control the RAs proposed allowing for Opex on a cost pass-through basis during these periods. Under this approach, any underspend on Opex would be returned to consumers through the k-factor mechanism and any overspend on Opex would only be recoverable by SEMO if the RAs approve such costs on the basis that they have been efficiently and prudently incurred.

In their revenue determinations, Ofgem applied Real Price Effects (RPE) forecasting to UK utilities. This approach is complementary to the “RPI-X” approach, providing an insight into whether the underlying costs faced by SEMO will grow faster or slower than inflation for the economy as a whole (as indicated by RPI or HICP). For example, this approach can be useful for labour costs where the trend upwards or downwards in labour costs are determined separately from inflation. The RPI-X is then applied and the RPE applies on top of this to give a net figure.

Incentive Regulation applying to SEMO

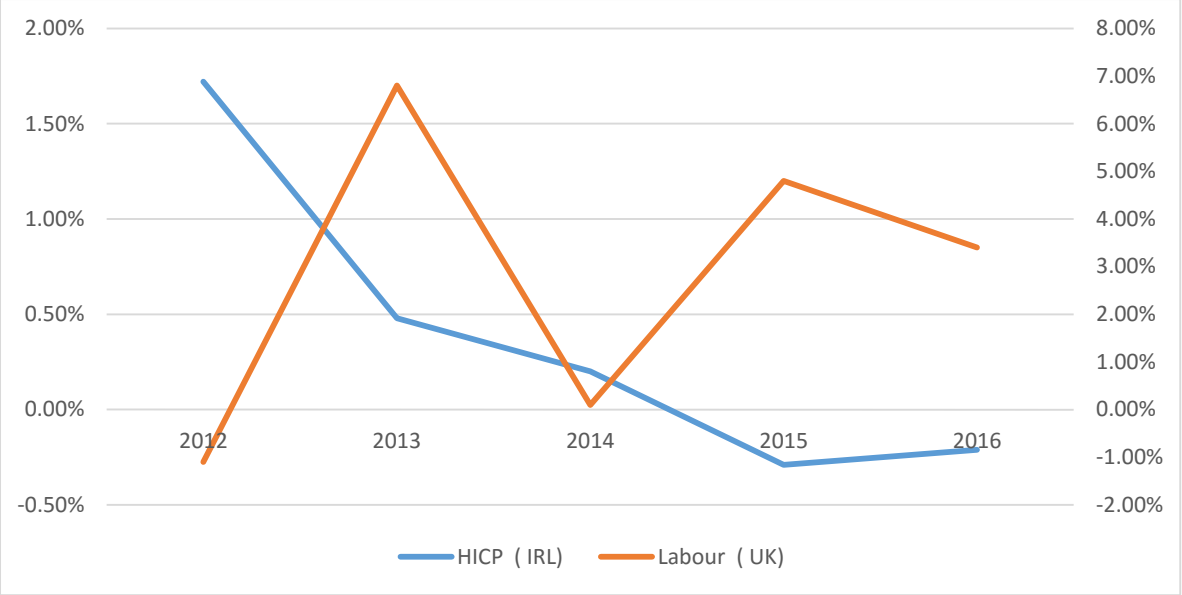
As part of previous SEMO Price Controls a decision was made to regulate OPEX under an Inflation-X regime, with an X factor of 0.3 to be applied, for the SEM period, with OPEX to be regulated on a cost pass-through basis for the SEM resettlement and decommissioning periods.

As SEMO transitions towards I-SEM, consideration is required as to whether the same regulatory controls and incentives apply to the SEMO in the new market. There are a number of incentives approaches in place that may apply.

Allowed Revenue with RPI-X (current approach)

SEMO currently works under an Allowed Revenue regime, with an efficiency target applied. Allowed revenue regimes apply a correction factor where any over or under recoveries are corrected in subsequent years. To incentivise the regulated company to reduce costs an efficiency factor may be applied. This is the current approach taken by the RAS to SEMO through the RPI-X approach (or HICP-X approach that is currently used). This approach takes the Retail Price Index i.e. inflation and subtracts a certain percentage which is the efficiency target. In this way the revenues of the company are subject to ongoing efficiency targets.

The RPE analysis described already above is complementary to the RPI- X approach as the RPI-X approach drives general efficiency in line with inflationary pressure within the economy at large, but the RPE takes account of the more specific cost inputs into the business. For example, the graph below shows HICP rates over the past 5 years, which have been comparatively low. However, for comparison statistical data from the Office of National Statistic in the UK illustrates that Labour costs do not necessarily correlate with general inflation (noting that the comparison is using Ireland and the UK). This may be of most relevance for companies where labour is a large cost component of operating the business. As SEMO's Opex is relatively stable over a Price Control period, the RAs are of the view that the scale of SEMO does not justify an RPE approach. Where underlying costs shift significantly, then it would be expected that SEMO would furnish the RAs with such analysis as part of the annual tariff setting process, should such shifts occur.



Price Cap regulation

An alternative approach is price cap regulation, where the tariff paid by market participants is capped at a certain level so as to recover a target revenue. Under this approach the company retains any over-recoveries but equally if the target revenue is not achieved then the regulated company does not apply a correction factor in subsequent years. Under this approach the regulated company is encouraged to reduce costs because it retains the benefit of any additional revenues it receives. Price Cap regulation can be useful where information is asymmetric.

Alternative approaches include a risk sharing approach whereby the regulated company and the customer shares the under/over recoveries in line with a defined percentage, which has also been discussed as part of the NEMO Opex section in this paper.

Benchmarking

Yardstick regulation or benchmarking is an incentive mechanism often applied across utilities that are largely comparable e.g. comparable. This measures the cost structure of a utility against a comparable utility so as to assess whether the company in question is efficient vis-à-vis comparators. This approach is often applied across network utilities such as electricity and gas where the service deliverables are comparable across companies. In the case of SEMO, directly comparable companies are not as easily found in terms of the CJV type entity. However, Market Operator functions are carried out by Elexon and XOserve in Britain and therefore benchmarking against these comparable entities may illustrate

how efficient SEMO is vis-à-vis comparators. Such benchmarking would need to take into consideration the applicability of different cost inputs of the respective businesses such as payroll. Benchmarking is a common feature of Price Controls that the RAs conduct, and will feature in the ex-ante Opex setting for SEMO.

Performance Based Regulation (current approach)

Performance-Based Regulation (PBR) is an enhancement to the RPI-X or Target Revenue approaches. Performance-Based Regulation may be seen as a means to reward good performance within a company in lieu of other approaches considered such as a margin-based approach. Under this incentivisation approach, the company is incentivised to perform strongly on target KPIs through a symmetrical financial element. This approach is used by Ofgem and OFWAT in the United Kingdom to incentivise superior customer satisfaction and system performance targets. In addition, regulators such as Ofgem have moved away from the traditional RPI-X approach towards more outputs based regulation known as RIIO (Revenues= Incentives + Innovation + Outputs). This form of regulation is applied to network regulation, but the principle focus is on delivering performance outputs that are of importance to customers.

SEMO is the entity currently responsible for the training and administration of market participants in the SEM, but the functions will alter in the I-SEM and include aspects such as imbalance settlement and capacity mechanism settlement which will both be carried out by SEMO due to synergies in the functions. Key Performance Indicators (KPIs) are currently applied to SEMO and are intended to improve performance, promote customer service and increase efficiencies. The current incentives pot is currently set at a maximum of 4% of total Opex revenues for each year.

The currently applicable KPIs and their weightings are set out below.

	Weightings	Target	Upper Bound
Ex-ante Pricing report	0.10	99%	100%
MIUN publication	0.05	99%	100%
Ex-post pricing report	0.10	99%	100%
Invoicing	0.20	99%	100%
Credit Cover Increase Notices	0.10	99%	100%
SEMO related resettlement queries	0.20	<9	<5
General queries	0.15	97%	99%
System availability (7am to 5PM Mon-SUN)	0.10	99.4%	99.8%

As RPI-X and Performance Indicators are the current incentive tools employed by the RAs in the SEM, it is prudent to request feedback from market participants as part of this principles paper as to whether;

1. The current incentives are fit for purpose and,
2. Whether the metrics included in the performance element should be revised in light of the changes in roles and responsibilities for SEMO in the I-SEM.

In particular, the RAs note that the roles and responsibilities of SEMO will change in I-SEM and therefore it is prudent to consider whether this change in responsibilities should lead to a review of the incentives placed on SEMO.

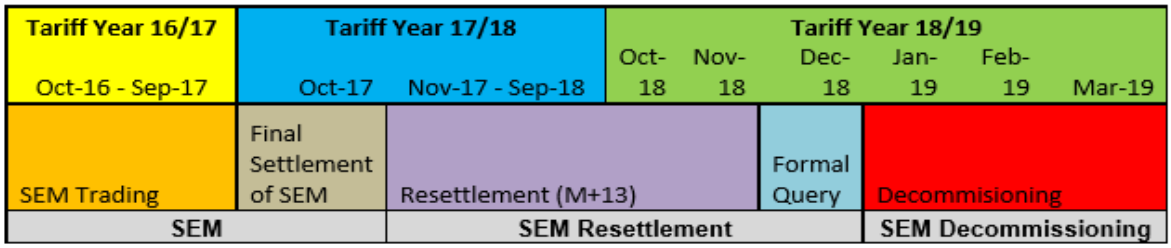
The RAs are of the view that there may be merit in considering whether the current KPIs are reviewed with a view to aligning more with the functions of the SEMO in I-SEM. The range of KPIs and Market Monitoring responsibilities will be amended as part of the consultation paper on SEMO revenues. However, in the first instance the RAs are requesting stakeholder feedback on the appropriate incentive regime to apply. A decision on the appropriate incentives to apply will be included in the Decision Paper on the SEMO revenues.

Tariffs

As SEMO will be providing different services under I-SEM, their tariff structures will also need to be reviewed. Tariffs will be calculated so that OPEX and CAPEX revenues are recovered based on forecasted market demand. This in turn requires the over or under recovery of revenue to be taken into account when finalising tariffs for the following year thus correcting SEMOs revenues from any revenue uncertainty arising from the difference from forecasted and actual market demand.

Duration of price control

The current price control covers the period detailed in figure 1. More information on these periods and their breakdown can be found in SEM-16-043 (Single Electricity Market Operator (SEMO) Revenue Requirement – Price control commencing 1st October 2016).



As there has been a delay to the Go-Live date for I-SEM, SEMO's revenue allowance to bridge between October 2017 and May 2018 will be decided separately

At this time, the new roles and responsibilities of SEMO will take effect. The revenues required to conduct these functions will be outlined in the forthcoming price control.

At this time, given that there the functions of I-SEM and the roles and responsibilities are established, the RAs propose a three year price control. The RAs have considered other possibilities such as aligning the Price Control with the current TSO Price Controls. However, as the EirGrid Price Control is conducted at a different time to the SONI Price Control this approach is not feasible at this time. The RAs will look at the potential of alignment of TSO, SEMO and SEMOpx price controls in future price controls.

Summary of Proposals:

The proposed principles for the price control for SEMO are outlined below. The RAs are seeking comment and feedback from interested stakeholders on these principles.

- This price control will be the first such control under I-SEM and will include provisions for the new market. It is envisaged that the following price control will take a 'business as usual' approach as opposed to the 2016-19 price control which looks at the winding down of the SEM.

- It is proposed that CAPEX is regulated by rate of return regulation as in previous SEMO price controls

- It is proposed that Opex is subject to RPI-X efficiency regulation

- A number of approaches are being considered in relation to incentives, and feedback is requested on suitable metrics.

- It is proposed that a three year Price Control is to be put in place, for the purposes of reviewing efficiency gains between Price Controls

5. I-SEM Implementation charges

6.1 I-SEM Implementation Charges

EirGrid/ SONI are heavily involved in the systemisation of the I-SEM and have been incurring costs associated with the I-SEM design and implementation since April 2013. To date, EirGrid plc and SONI Ltd have submitted resource costs, capital costs, and NEMO establishment costs to the RAs for consideration and recovery. Such costs are not included within the scope of any of the current EirGrid TSO, SONI TSO or SEMO price controls.

In January 2015, an 'Agreed Approach Document' (AAD) was published on the [previously AIP] SEM Committee website, which included an 'Expenditure Recovery Framework' for I-SEM. This was agreed between the CEO of the Utility Regulator, the Commissioner (Chair) of the CER, and the Chief Executive of EirGrid Group.

The Expenditure Recovery Framework of the AAD confirms that I-SEM related project costs which are identified as being:

- efficiently incurred,
- demonstrably necessary for progression of the I-SEM, and
- incremental to existing price controls and capable of being robustly validated by the RAs

These will be subject to recovery via the appropriate tariffs. The RAs will publish a document in due course regarding the approach to recovery of such costs.

7 CONCLUSIONS, NEXT STEPS

7.1 CONCLUSIONS

This consultation paper has outlined the high level principles of revenue regulation of SEMOpx and SEMO under I-SEM and invites feedback from interested stakeholders on these principles.

Although the focus of this paper has been on the treatment of the SEMOpx and SEMO under the new I-SEM arrangements, the RAs are also cognisant of developments relating to Common NEMO costs across Europe, which are currently being considered at an EU level. At this time the conclusions of these discussions are not finalised, but the RAs will continue to engage with these discussions. Any decisions regarding common costs at an EU level will be inputted into the NEMO revenue consultation paper or decision paper, where the common NEMO costs and division between Member States and NEMOs has been settled.

7.2 NEXT STEPS

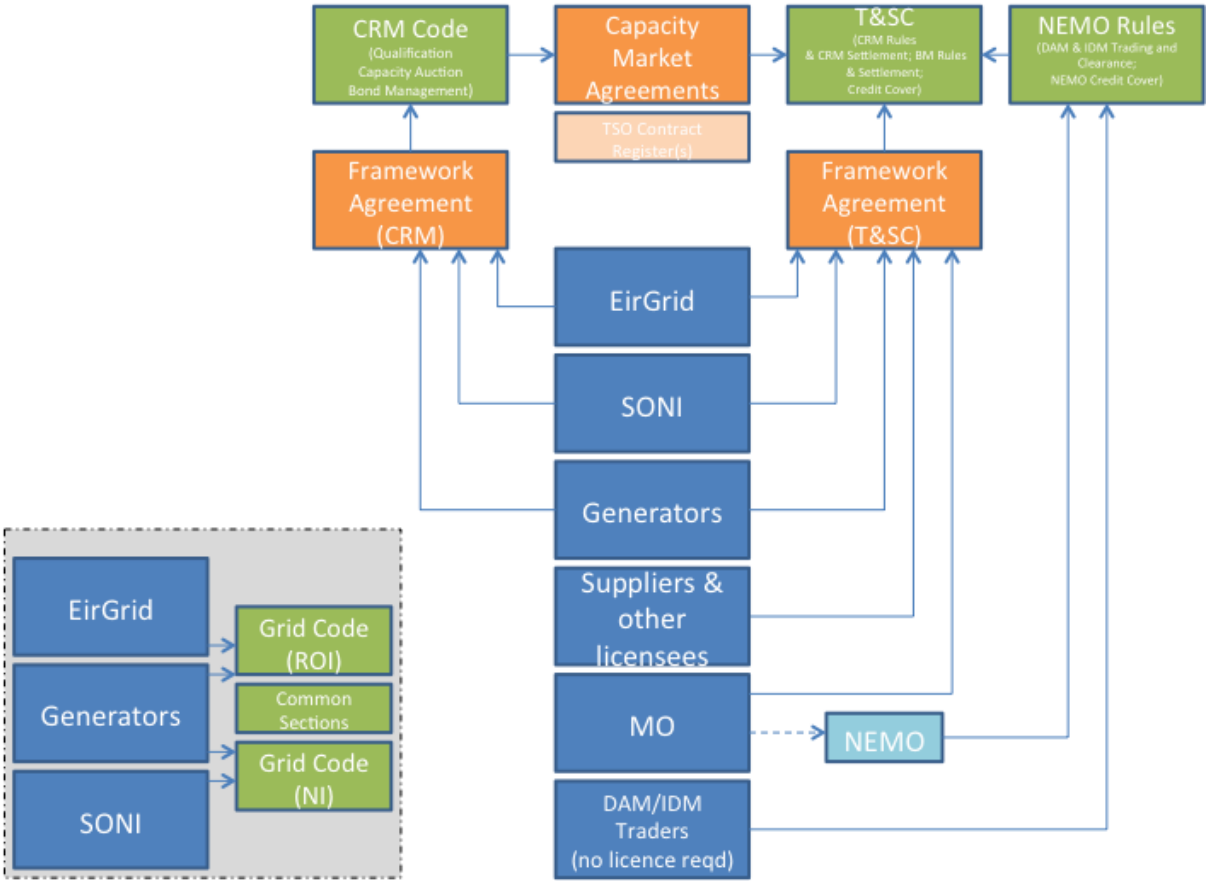
Stakeholders are now requested to respond specifically to the aspects of SEMOpx and SEMO revenue regulation aspects outlined in this Consultation Paper. Following receipt of responses to this consultation, a Decision Paper on the principles of price regulation of SEMOpx and SEMO will be published.

Responses may be sent to Gina Kelly gkelly@cer.ie and Joe Craig Joe.Craig@uregni.gov.uk by COB 16th May 2017.

A price control will then be carried out for SEMOpx and SEMO with accompanying Consultation and Decision papers. It is the intention of the RAs that the Consultation Paper will include details of indicative SEMOpx and SEMO charges.

ANNEX 1: I-SEM REGULATORY FRAMEWORK

Figure 1: I-SEM Regulatory Framework[9]



[9] It should be noted that this diagram is intended for illustrative purposes only. It is not intended that the diagram is a definitive guide to the operations of I-SEM across all timeframes; nor is it intended that the diagram be an accurate depiction of every single entity which will operate in I-SEM. Rather, the diagram provides a high-level pictorial representation of the I-SEM Regulatory Framework.

ANNEX 2: NEMO DESIGNATION CRITERIA AS OUTLINED IN ARTICLE 6 OF CACM

CACM Regulation Article Reference	CACM NEMO Requirement as a condition of Designation
6.1(a)	It [NEMO] has contracted or contracts adequate resources for common, coordinated and compliant operation of single day-ahead coupling and/or single intraday coupling, including the resources necessary to fulfil the NEMO functions, financial resources, the necessary information technology, technical infrastructure and operational procedures or it shall provide proof that it is able to make these resources available within a reasonable preparatory period before taking up its tasks in accordance with Article 7;
6.1(b)	It [NEMO] shall be able to ensure that market participants have open access to information regarding the NEMO tasks in accordance with Article 7;
6.1(c)	It [NEMO] shall be cost-efficient with respect to single day-ahead and intraday coupling and shall in their internal accounting keep separate accounts for MCO functions and other activities in order to prevent cross-subsidisation;
6.1(d)	It [NEMO] shall have an adequate level of business separation from other market participants;
6.1(e)	If designated as a national legal monopoly for day-ahead and intraday trading services in a Member State, it [NEMO] shall not use the fees in Article 5(1) to finance its day-ahead or intraday activities in a Member State other than the one where these fees are collected;
6.1(f)	It [NEMO] shall be able to treat all market participants in a non-discriminatory way;

CACM Regulation Article Reference	CACM NEMO Requirement as a condition of Designation
6.1(g)	It [NEMO] shall be subject to appropriate market surveillance arrangements;
6.1(h)	It [NEMO] shall have in place appropriate transparency and confidentiality agreements with market participants and the TSOs;
6.1(i)	It [NEMO] shall be able to provide the necessary clearing and settlement services;
6.1(j)	It [NEMO] shall be able to put in place the necessary communication systems and routines for coordinating with the TSOs of the Member State;
6.2	The designation shall be applied in such a way that competition between NEMOs is organised in a fair and non-discriminatory manner.