



Single Electricity Market

SMO Revenue and Tariffs

Consultation Paper

11th June 2007

AIP/SEM/246/07

EXECUTIVE SUMMARY

Background

The All-Island Single Electricity Market (SEM), due to commence operation on 1st November 2007, will be administered by a Single Market Operator (SMO), formed through a contractual joint venture between EirGrid and SONI.

Once established, the SMO will need to recover from market participants its operational costs, capital costs associated with the establishment of the SEM, constraint costs associated with the balancing of the transmission systems, and constraints costs associated with generator units which are being tested.

This consultation paper by the Regulatory Authorities includes proposals on the form of SMO regulation, the allowed revenue for the SMO, the cost of constraints, and all associated tariffs. Comments are invited from the public by Friday 13th July, as detailed in Section 10. A decision paper on this issue is due to be published by the Regulatory Authorities in September.

Form of Regulation

For an initial tariff period from 1st November 2007 to 30th September 2008, the Regulatory Authorities propose that the SMO be subject to rate-of-return regulation, with the energy and capacity cash-flows being regarded as a cost pass-through.

In view of the start-up nature of the SMO and the associated uncertainty involved in estimating its costs, all costs allowed for the initial tariff period will be subject to an *ex-post* review and determination by the Regulatory Authorities. This determination may result in an over or under-recovery of revenue being fed through to the subsequent tariff period(s).

This proposed form of SMO regulation applies to the initial tariff period only and other forms of regulation for the subsequent tariff period(s) will be considered separately.

SMO Allowed Revenue

Applying the Regulatory Authorities' proposed inflation assumptions, in mid-tariff period prices the total revenue sought by the SMO to cover its costs for the tariff period is €26.5m. The Regulatory Authorities have carried out an analysis of the various costs categories (as detailed in Section 6) and propose a total SMO revenue of €22.4m for this period. A comparison between the costs sought by the SMO and proposed by the Regulatory Authorities is shown below, in mid-tariff period prices. All SMO costs for subsequent tariff periods will be subject to a separate review by the Regulatory Authorities.

Mid-Tariff Period Prices	Sought by SMO €m	Proposed by RAs €m
Operating costs (excl. depreciation)	13.3	11.0
Depreciation	10.4	9.0
WACC	2.8	2.4
Total:	26.5	22.4

SMO Charges

The Regulatory Authorities propose the following tariffs to recover the proposed allowed SMO revenue:

- a variable SMO charge to suppliers of €0.609 / MWh;
- a fixed SMO charge to generator units of €113 / MW installed capacity; and,
- a fixed SMO charge to supplier units of €1,056 / supplier unit.

An accession fee of €4,500 and participation fees of €11,000 and €12,500 for supplier and generator units respectively are also proposed.

Imperfections Charge

The proposed cost of constraints is €113.5m in mid-tariff period prices, resulting in an imperfections charge to suppliers of €3.234 / MWh.

Generator-Under-Test Tariffs

It is proposed that a tariff that varies according to a generator unit's capacity be used to recover the constraints costs associated with the testing of a generator unit.

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1. INTRODUCTION

1.1 THE SINGLE ELECTRICITY MARKET

The Northern Ireland and Republic of Ireland governments, the Northern Ireland Authority for Utility Regulation and the Commission for Energy Regulation (together “the Regulatory Authorities”), and industry are currently working together to create an All-Island Energy Market, as outlined in the All-Island energy market development framework paper¹.

The first step in this process, the implementation of an All-Island wholesale electricity market, the Single Electricity Market (SEM), is currently underway and the market will Go-Live on 1st November 2007.

The design of the SEM was set out by the Regulatory Authorities in June 2005³. It will be a centralised or gross mandatory pool market, with electricity being bought and sold through the pool under a market clearing mechanism. Generators will receive the System Marginal Price (SMP) for their scheduled dispatch quantities, capacity payments for their actual availability, and constraint payments for changes in the market schedule due to system constraints. Suppliers purchasing energy from the pool will pay the SMP for each trading period, capacity costs, and system charges. The SEM market rules are set out in the Trading and Settlement Code (the TSC²).

1.2 THE SINGLE MARKET OPERATOR

The development of the SEM led to a design which required that a Single Market Operator (SMO) be in place to administer the market³. With this in mind the Regulatory Authorities approved the plans of EirGrid and SONI, the transmission system operators for the Republic of Ireland and Northern Ireland respectively, to establish a SMO on a contractual Joint Venture basis⁴.

The SMO's position in the market is explicitly defined in the TSC, which sets out the rules, procedures, terms and conditions which all parties including the SMO must adhere to in order to participate in the SEM. The SMO will, among other things, administer daily bid/offer capture, schedule the market and determine the price. It will also produce daily, weekly and monthly settlement and invoicing statements for electricity, constraints, capacity payments and SMO charges, and execute weekly and monthly clearing services for these charges. The SMO will manage currency risk and market participants' credit requirements. Furthermore, it will be involved in the resolution of queries and disputes, market change, and the provision of market information.

1.3 SINGLE MARKET OPERATOR REVENUE AND CHARGES

The SMO will incur operational costs while carrying out the above functions, and will recover these costs, as well as the costs of establishing the SEM, through SMO tariffs, which will be levied on market participants.

To facilitate this recovery of costs the TSC requires the SMO to submit proposals on its allowed revenue, and the charges required to recover this revenue, to the Regulatory Authorities. While developing its submission, the SMO carried out a public consultation process during the second half of 2006 to ensure that there would

¹ All-Island Energy Market: A Development Framework, Nov 2004, www.allislandproject.org

² www.allislandproject.org

³ SEM: High level decision paper, www.allislandproject.org

⁴ Single Market Operator Decision, www.allislandproject.org

be some consensus on the methodology used to create the submission⁵. The SMO's consultation and response papers, as well as comments received from the public, are available on the SMO website, and were also reviewed by the Regulatory Authorities.

Subsequently, on 27th February 2007 the SMO submitted a paper to the Regulatory Authorities detailing its revenue requirements and the associated tariffs; this paper is published by the Regulatory Authorities for information purposes⁶. It should be noted that the SMO's submission also covers costs and charges associated with constraints, makewhole payments and uninstructed imbalances⁷.

1.4 REGULATORY APPROVAL PROCESS

The Regulatory Authorities have carried out a review/analysis of the SMO's submission and of associated support information. On the basis of that review, the Regulatory Authorities now publish this consultation paper, proposing the allowed revenue for the SMO, the cost of constraints, and all associated tariffs.

Comments on this consultation paper are invited from members of the public as per Section 10, and will be taken into account by the Regulatory Authorities prior to the publication of the final decision paper on this topic in September 2007.

1.5 OBJECTIVES OF THIS PAPER

The objective of this consultation paper is to solicit comments from members of the public on a range of proposals associated with SMO allowed revenue. These proposals cover:

- The appropriate length of the initial tariff period,
- The form of regulation,
- The allowable revenue for the SMO,
- The recovery of constraints costs, and,
- The form and magnitude of each charge through which the revenue will be recovered.

Information related to providing comments on this paper, and how the comments will be taken into account, are set out in Section 10.

⁵ SEM Tariff Charges Methodology, Aug 2006, www.allislandmarket.com

⁶ SMO revenue submission, www.allislandproject.org

⁷ These are defined in the TSC.

2. STRUCTURE OF THE PAPER

This paper outlines proposals and seeks comments on issues related to SMO allowed revenue. It is structured as follows:

- Section 1 (the introduction) outlines the background to the SEM, the role of the SMO within the market, and the process behind the approval of the SMO allowed revenue. The objectives of this paper are also detailed.
- Section 3 outlines the regulatory principles that will be adhered to during the decision making process.
- Section 4 covers the length of the initial tariff period.
- Section 5 outlines the form of regulation for the SMO.
- Section 6 covers SMO allowed revenue, including operating costs, depreciation, and the Weighted Average Cost of Capital (WACC).
- Section 7 outlines proposals on the imperfections charge, which covers the net cost of constraints, makewhole payments, and uninstructed imbalances.
- Section 8 makes proposals on methodology to be used for the estimation of generator-under-test tariffs.
- Section 9 covers the form and magnitude of SMO and market related charges.
- Section 10 outlines the appropriate format and timeframe for the provision of comments on this paper.

Upon receipt of comments on this consultation paper, a decision document will be drafted and published by the Regulatory Authorities in September 2007.

3. REGULATORY PRINCIPLES

This section outlines the principles that were adhered to while outlining the regulatory proposals contained in this paper. Decisions will also be evaluated against these principles.

As a starting point it can be stated that best practice regulation of the so-called natural monopolies, can be characterised as sustainable, stable, transparent, predictable and cost-effective. The Regulators task essentially consists of creating a framework within which, in return for providing monopoly services to an acceptable quality, the regulated business receives a reasonable assurance of a revenue stream in future years that will cover its costs, including an appropriate rate-of-return on investments made and the recovery of capital invested.

The regulatory framework therefore needs to be **sustainable**. The regulated business must be able to finance its operations, and any necessary capital expenditure, so that it can continue to operate in the future to the ultimate benefit of customers. Sustainability also entails avoiding any barriers to market entry or market exit, and avoiding any inconsistency in the treatment of any participant, or class of participant.

To be **stable**, the framework must also satisfy all the parties affected by it - customers, the Governments and Regulatory Authorities (acting on behalf of customers), the SMO itself, and independent generators and suppliers. Frequent complaints and disputes will lead to the regime being continually adjusted by the Regulators. This creates uncertainty in the industry and discourages investment and long-term planning. The stability of the regime is particularly important to privately owned businesses, if investors are to be encouraged to make long-term investments in the sector.

The rules that govern the regulatory regime should also be **unambiguous** in their interpretation and **predictable** in the way they are applied. In particular, it should be clear how costs relate to prices. Regulations which are unclear will cause disputes, which create instability in the regulatory regime, add to the costs of regulation and are likely to raise the cost of capital, ultimately to the detriment of customers in the form of higher prices. An important corollary is that there should be “no surprises” for participants. This does not imply that the Regulators cannot change their view on issues, or revise the regulatory framework as necessary and in response to unforeseen developments, but it does mean that the Regulators will endeavour to:

- avoid changes which apply retroactively, with adverse consequences for the regulated businesses,
- take decisions following a due process of consultation and consideration of the relevant issues, and,
- publish a full account of the reasoning behind those decisions.

The **costs of monitoring and enforcing compliance** need to be low relative to the benefits of regulation. Ideally, the regulatory framework will involve minimum costs of data collection and analysis. The procedure for processing disputes should also be simple, although the more transparent and stable the regulatory system, the less often disputes will arise.

4. LENGTH OF THE INITIAL CONTROL

This section outlines the Regulatory Authorities' proposal on the appropriate length of the initial SMO tariff period.

4.1 GENERAL

During the initial period of SEM operation the estimation of the SMO's operating costs and market related costs will be particularly difficult. Costs are being estimated on an All-Island basis for the first time, with very little comparative information available.

Therefore, in order to reduce the risk of a large over or under-recovery of revenue during the tariff period, leading to the need for a mid-tariff period change, or the requirement for a large allowance to be made in the subsequent tariff period, it would be preferable to set the initial tariff period over a short (for example, one year) rather than long (for example, five year) timeframe.

The implications of another consultation process also need to be considered.

4.2 IMPLICATIONS OF PES ALIGNMENT DECISION

A consultation process has already been carried out in relation to the alignment of PES tariff periods in Northern Ireland and the Republic of Ireland⁸. As a result it was decided that the PES tariffs would be aligned to have a 12 month tariff starting on 1st October in both jurisdictions. This means that there will be an initial 11 month PES tariff period from 1st November 2007 (the go-live date for the SEM) to 30th September 2008, with a 12 month PES tariff period starting on 1st October thereafter.

The PES alignment consultation process also highlighted the advantages associated with aligning the PES tariff periods and their underlying cost components. Specifically, not aligning the tariff periods would increase the risk of PES tariff revenue not recovering costs. This in turn would lead to the application of k-factors (that is, an allowance in the following tariff period) and cause significant distortions in retail prices from period to period. This would negatively impact the market by causing frequent switching of customers between PES and independent suppliers.

That consultation process recommended that the tariff periods for underlying cost components, including the SMO tariff period, also be aligned with the PES tariff period.

4.3 PROPOSAL

It is proposed that the initial SMO tariff period will run from:

1st November 2007 to 30th September 2008.

This is in agreement with the recommendations of the PES tariff alignment consultation process, the regulatory principles outlined in Section 3, and the benefits of a relatively short initial tariff period as outlined in Section 4.1.

⁸ PES retail tariff alignment in the SEM decision paper, www.allislandproject.org

5. FORM OF REGULATION

This section evaluates and makes proposals on the appropriate form of regulation for the SMO. Section 5.1 outlines various regulatory approaches that can be used, either as standalone methods or in conjunction with one another; Section 5.2 details cost of capital considerations that must be taken into account; Section 5.3 evaluates the different forms of regulation; and Section 5.4 outlines the regulatory proposals.

5.1 REGULATORY OPTIONS

Rate-of-return and permanent price caps lie at the two extremes of regulatory approaches. However, between these there are a range of regulatory approaches that combine incentives for efficiency with some form of profit control. A number of these approaches, including rate-of-return and price caps, are explained in Sections 5.1.1 to 5.1.5.

5.1.1 Rate-of-return regulation

Under rate-of-return regulation, the regulated business is allowed to charge tariffs that will cover its operating costs and give it a reasonable rate-of-return on the value of the capital employed in the business. When tariffs move out of line with costs, the business makes an application for a new set of tariffs. Rate-of-return regulation thus eliminates all prospects of excess profit and has the advantage of keeping the cost of capital low. However, it does not give the regulated business a strong incentive to reduce costs, and under certain conditions it can encourage unnecessary and inefficient investment, since the business is generally assured of being able to recover the costs of that investment and earn a given rate-of-return on the increased asset base.

Rate-of-return regulation is a viable option for the regulation of some aspects of the SMO function. It is discussed further in Section 5.3, where the different options are evaluated.

5.1.2 Price caps

This was the starting point of incentive based regulation. Price caps involve a setting of tariffs for defined period, beyond which all efficiency gains are retained by the business. They mimic the desirable incentives for cost minimisation found in competitive markets, where prices are not generally set in relation to the costs of individual producers, but by reference to conditions in the market as a whole. The regulated business has a strong incentive to reduce costs, but the regulator must define comprehensive output standards (to remove incentives to cut quality), and may have to tolerate higher-than-expected profits for a time.

The benefits of price cap regulation arise only over a reasonable investment timescale, over which efficiencies can be achieved. Initially rate-of-return and price cap regulation are effectively the same, in that a tariff must be set based on required cost recovery and reasonable profit.

5.1.3 Yardstick regulation

Yardstick regulation, or competition by comparison, is suitable for the regulation of utilities with regional monopolies. It seeks to provide an incentive for utilities to strive for lower costs by inducing them to compete with one another for cost reductions.

However, the relatively unique nature of the SMO's business combined with its start-up nature means that precise benchmarked cost comparisons would not be suitable as a standalone option at this stage. The use of benchmarked cost comparisons will

be separately considered for the subsequent tariff period(s) as knowledge of the resources required to operate an efficient SMO develops.

5.1.4 Key performance indicators

The SMO could be incentivised by accessing its performance against key performance indicators and rewarding it accordingly.

The performance indicators and revenue implications proposed by the SMO are published for information purposes⁹. Given the fact that the SMO is a new business, it is not proposed that it be incentivised at this time through the use of key performance indicators, though as above this issue will be re-considered for the subsequent tariff period(s).

5.1.5 Cost-pass-through

A cost-pass-through approach involves estimating the costs of providing the regulated function and establishing tariffs that recover those costs. This approach is suitable where the service being regulated is provided on a not-for-profit basis, and it is often used with an end of year reconciliation mechanism to allow for differences between forecast and actual costs.

Some elements of the SMO revenue will be managed on a not-for-profit basis, that is, providing a service where the cost is being passed through from one service provider to the end customer, and these elements are suited to cost-pass-through regulation.

5.2 COST OF CAPITAL CONSIDERATIONS

Section 3 states that Regulatory proposals must be sustainable and stable. To ensure the sustainability and stability of the SMO, it must be allowed an appropriate cost of capital. However, it has been shown that the appropriate cost of capital for a given function varies according to the chosen form of regulation.

Section 5.2.1 outlines the costs of capital considerations associated with choosing between price cap and rate-of-return regulation.

5.2.1 Rate-of-return versus price cap

One of the main considerations when choosing between rate-of-return and price cap regulation is the cost of capital associated with each. Analysis confirms that the risks associated with price cap regulation are perceived to be higher than those for a rate-of-return regulated body, leading to a higher cost of capital for a price cap regulated body relative to the rate-of-return approach. Given that both approaches are effectively similar over the proposed tariff period of 11 months, and given that the benefit of the price cap approach in relation to avoiding the need for extensive transparency is not relevant for the SMO function, it is felt that a rate-of-return approach would be more beneficial in this case.

5.3 EVALUATION OF THE APPROPRIATE FORMS OF REGULATION

In this section the SMO's functions are separated into a number of distinct areas, and an appropriate form of regulation is proposed for each.

5.3.1 Energy and Capacity payments

As detailed in the TSC the SMO is responsible for charging suppliers for electricity purchased from the gross mandatory pool, and paying generators for electricity sold into the pool. The charge for this electricity is set by market clearing mechanism and

⁹ SMO performance metrics, www.allislandproject.org

so is not specified *ex-ante*. This is effectively a non-profit cash-stream, and therefore there is no need for any form of either price cap or rate-of-return regulation. Cost-pass-through is proposed as the appropriate form of regulation for this function.

The same is proposed for the capacity payments revenue flow.

5.3.2 Imperfections charge

The TSC requires that the SMO establishes a charge (the imperfections charge), to be levied on suppliers on a MWh basis, to allow the recovery of the cost of constraints, net of uninstructed imbalance and make-whole payments,¹⁰. The SMO will be responsible for the recovery of the Imperfections charge from suppliers and the payment of the associated costs. This is effectively a non-profit cash-stream, in which case there is no concept of price cap or rate-of-return regulation. Cost-pass-through is therefore also proposed as the appropriate form of regulation for this function.

5.3.3 SMO operation

As per the TSC, SMO charges, accession and participation fees will be recovered by the SMO and will cover the costs of establishing the SEM and the SMO's operating costs. More detail on each charge/fee is given in Section 9.

The nature of this SMO function means that a regulatory mechanism that includes some incentive to control costs, such as rate-of-return or price cap, is more appropriate than cost pass through.

As described in Section 5.1.1 rate-of-return regulation meets the basic objectives of controlling costs, while ensuring that all costs are recovered. On the other hand, price cap regulation, as described in Section 5.1.2, involves a less intrusive regulatory assessment, and establishes stronger incentives over a regulatory review period.

However, price cap regulation can also increase the cost of capital for the regulated function, as shown in Section 5.2.1. Therefore, a price cap approach is typically used where the function is complex and not conducive to comprehensive cost analysis by a regulator. This is not true in this case, as the SMO obligations are set out in the TSC and it has a reporting requirement that is set out in its licence. Furthermore, many of the cost drivers are external to the SMO and may not be amenable to incentives being placed on the SMO.

For these reasons, and the fact that the initial tariff period is proposed to span a period of only 11 months, the advantages usually provided by price cap regulation would not be evident. In essence, it would have the same result as a rate-of-return approach, but with a potentially higher cost of capital.

Therefore it is proposed that a rate-of-return approach be used for this element of the SMO's role.

The SMO had provided a set of performance criteria to the Regulatory Authorities against which its performance could be incentivised. However, given that this will be the first year of operation for the organisation, the Regulatory Authorities do not propose to incentivise the SMO using performance criteria during the initial tariff period. The use of performance incentives will be separately considered for the subsequent tariff period(s) as experience and knowledge of the day-to-day operation of the SMO grows.

¹⁰ These terms are defined in the TSC, www.allislandproject.org

5.4 PROPOSALS ON FORM OF REGULATION

It is proposed that the SMO be subject to rate-of-return regulation (that is, it will receive a rate-of-return on its asset base), with the energy and capacity cash-flows being regarded as a cost pass-through.

In view of the start-up nature of the SMO and associated uncertainty involved in estimating its costs, it should be noted that all SMO costs which are allowed for the initial tariff period, including capital-related costs, will be subject to an *ex-post* review and determination by the Regulatory Authorities. This determination of efficiently incurred costs may result in an over or under-recovery of revenue being fed through to the subsequent tariff period(s). This also applies to revenue covered under the imperfections charge.

Furthermore, this proposed form of regulation applies for the initial tariff period only (that is, from 1st November 2007 to 30th September 2008). Other forms of SMO regulation, including the use of a price cap, performance incentives and cost benchmarking, will be considered separately for the subsequent tariff period(s) when there is more certainty on SMO operation and costs.

6. DETERMINATION OF ALLOWABLE REVENUE

This section makes proposals on SMO allowed revenue, and covers the operating costs of the SMO during the initial 11 month tariff period, the capital costs involved with the establishment of the market, and the Weighted Average Cost of Capital (WACC) that is proposed as remuneration for the parent companies. The proposed costs/revenues are shown in detail from Section 6.1 below and are summarised in Section 6.6.

As referred to in Section 5, in view of the start-up nature of the SMO and the associated uncertainty involved in estimating its costs, all SMO costs allowed for the initial tariff period will be subject to an *ex-post* review and determination by the Regulatory Authorities. This determination of efficiently incurred costs may result in an over or under-recovery of revenue being fed through to the subsequent tariff period(s).

In addition, all proposed costs/revenues apply to the initial tariff period only and will be separately reviewed for the subsequent tariff period(s) as the SMO function beds down and its costs become more certain.

6.1 OPERATING COSTS

Operating expenditure covers all costs incurred by the SMO from 1st November 2007, or "Go-Live", to 30th September 2007. The figures proposed by the Regulatory Authorities are outlined in the below table and detailed in the following sections:

	Sought by SMO €m	Proposed by RAs €m
Payroll	5.4	4.0
Professional fees	1.2	0.9
Facilities	1.2	1.1
IT & communications	2.4	2.4
Research & development	0.3	0.0
General & administrative	0.5	0.4
Depreciation	10.0	8.6
Energy imbalances	1.8	1.8
Total:	22.8	19.2

Table 1: Operational costs sought by the SMO and proposed by the RAs (mid-2007 terms)

6.1.1 Payroll

This covers all management, specialist and support staff within the SMO function including:

- Market Operations,
- Development,
- IT,
- Corporate support functions, and,
- Communications.

The above breakdown is detailed further in the SMO revenue submission, where a total figure of €5.4m, covering the cost of 57 staff at an average yearly staff cost of €0.103m, was included for the first 11 month tariff period.

After an analysis of the information provided by the SMO, the Regulatory Authorities arrived at a figure of €3.5m for payroll for the initial tariff period, based on 48 staff with an average yearly staff cost of €0.080m per staff member. The average yearly staff cost of €0.080m per staff member includes allowances for PRSI contributions in the Republic of Ireland, National Insurance contributions in Northern Ireland and pension contributions in addition to salaries and bonuses. This figure also includes an allowance made for the managerial structure of the SMO, and the seven-day-a-week and on-call nature of some positions.

However, it is acknowledged that there are some quite unique features to the forthcoming and new SMO function which make it difficult at this stage to gauge authoritatively what level of payroll resources will be required by an efficient SMO on an ongoing basis. It is also important for the operation of the SEM that the SMO has sufficient payroll resources to discharge its functions effectively. Taking these considerations into account, the Regulatory Authorities propose to allow €3.5m for payroll with an additional contingency of €0.5m.

This allowance (totaling €4.0m) is made on the assumption that the SMO will recruit staff on an efficient basis taking into account the relative cost of employment in each labour market. With this in mind, a review and determination of the allowed payroll (as with all SMO costs) will be undertaken by the Regulatory Authorities *ex-post* and any resulting under or over-recovery will be fed through to the subsequent tariff period(s).

In addition, this does not infer that any particular assumed staff number and associated payroll cost will necessarily be allowed on a continual basis - that is after the eleven months tariff period - as this will be subject to a separate review by the Regulatory Authorities as the SMO function beds down.

6.1.2 Professional fees

After an analysis of the SMO revenue submission, a figure of €0.897m (€0.3m less than the €1.2m initially sought by the SMO) has been proposed by the Regulatory Authorities for professional fees. The figures included in the SMO revenue submission and those proposed by the SMO are outlined in the below table, followed by a description of each cost:

	Sought €m	Proposed €m
Regulatory legal	0.250	0.250
Disputes/Modifications committees	0.335	0.060
Consultancy services/Contractors	0.225 ¹¹	0.197
Market auditor	0.260	0.260
Other professional fees	0.130	0.130
Total:	1.200	0.897

Table 2: Professional fees sought by the SMO and proposed by the RAs (mid-2007 terms)

Regulatory legal covers legal advice provided to the SMO on regulatory issues arising from SMO licences and the TSC. This varies from providing legal input regarding the implications of changes to the TSC to providing interpretation of SMO responsibilities under the TSC and licences. It is proposed that €0.250m be allowed, as per the SMO's submission.

¹¹ €0.225m was initially proposed by the SMO but this was later revised by the SMO to €0.197m.

A provision of €0.060m is proposed to allow the SMO carry out its responsibilities in relation to the modification committee as detailed in the relevant Agreed Procedure¹². The Regulatory Authorities do not propose that an allowance be made for the Disputes Resolution Board (€0.275m had been sought by the SMO), but an allowance may be made for these costs *ex-post*, that is, in the subsequent tariff period, subject to the usual regulatory scrutiny to ensure that they have been efficiently incurred.

In order to ensure business continuity in the event of staff turnover, the provision of advice in relation to market reports and financial disputes, and an independent IT audit, a figure of €0.225m had been included in the SMO revenue submission for consultancy/contractor services. Following analysis by the Regulatory Authorities this figure was revised downwards by the SMO to €0.197m; the Regulatory Authorities propose that this revised figure be allowed.

Under the TSC, the Regulatory Authorities are expected to appoint a Market Auditor every 3 years, who will conduct an audit of the code and its operations, procedures and processes at least once every calendar year. It is expected that this will only happen once over the course of this revenue submission period. The TSC provides for the SMO to recover the costs of the Market Auditor and a provision of €0.260m is included in the revenue submission. This is consistent with previous TSO requirements, and the Regulatory Authorities propose that the full €0.260m be allowed.

Other professional fees cover requirements for corporate audit, recruitment and communications expenditure. As per the SMO's submission a figure of €0.130m is proposed.

6.1.3 Facilities

The SMO will be co-located on property provided by both parents for the period covered by this revenue submission. Facilities costs cover all shared space and include cleaning services, maintenance, car parking, security, mail service, copy bureau, switch board and catering and canteen services as well as the more obvious rent, insurance and utilities. The SMO included a figure of €1.247m in the revenue submission to cover this cost. The Regulatory Authorities have scaled the figure of €1.247m to allow for the reduction in payroll, that is, the proposed reduction from 57 to 48 staff as detailed in Section 6.1.1, resulting in a figure of €1.050m being proposed to cover this cost.

6.1.4 IT & telecommunications

The SMO have included a figure of €2.377m in its submission for the support and maintenance of the SMO's IT and Telecoms infrastructure, covering extended support agreements and operational support and maintenance agreements for the market software. This will ensure the SMO can build internal expertise on the software without the market or participant's service being affected. This figure also covers the cost of links between the two SMO facilities and the market software providers.

The Regulatory Authorities propose that the full €2.377m be allowed.

6.1.5 Research and development

The SMO included a figure of €0.250m in its revenue submission to cover research and development. However, as this role is not required under the TSC, and given

¹² www.allislandmarket.com

that this tariff covers the first 11 months of the SMO operation, the Regulatory Authorities do not propose to allow any revenue for this area.

6.1.6 General and administrative

The SMO included a figure of €0.497m in its submission to cover general and administrative costs, as per the below table. Some aspects of this cost have been scaled by the Regulatory Authorities to allow for the payroll proposals detailed in Section 6.1.1, that is, the proposed reduction from 57 to 48 staff, and a reduced provision of €0.443m is proposed.

	Sought €m	Proposed €m
Travel and subsistence	0.247	0.208
Staff training	0.095	0.080
Bank charges	0.115	0.115
Office supplies	0.040	0.040
Total:	0.497	0.443

Table 3: General & administrative figures sought by the SMO and proposed by the RAs (mid-2007 terms)

6.1.7 Depreciation

A figure of €10.0m had been included in the SMO revenue submission for depreciation during the initial 11 month tariff period. The Regulatory Authorities propose a provision of €8.6m. The difference is due to proposed revisions to the total allowed capital expenditure as outlined in Section 6.2.

6.1.8 Energy imbalances

It had been assumed that the SMO would simply administer payments to generators and receipts from suppliers for energy, and that these monies would always equal. However, it is now recognised that this is not the case as there will be an energy imbalance in the SEM. This energy imbalance means that money received from suppliers will not equal the money paid out to generators and the SMO is now required to finance any differences, ensuring that generators are paid for their loss adjusted market schedule quantities.

The imbalance arises from the implementation of loss factors in SEM, which it is expected will lead to differences between losses arising from meter quantities and actual market schedule quantities. Generators will be paid SMP times the loss adjusted market schedule quantities, however payments from suppliers will be based on loss adjusted meter quantities. Losses will be locational in SEM and therefore these payments will not always be equal¹³.

¹³ Losses are incurred on the transmission system as electricity is transported from generators to the bulk supply points. In settlement, the transmission losses are allocated to generators (including distribution connected generators) using Transmission Loss Adjustment Factors. Some generators are responsible for proportionally more losses than others depending on their point of connection to the grid. Therefore transmission loss factors are locational. The Transmission Loss Adjustment Factors are derived by the system operators using marginal loss factors derived for each affected generator based on forecast assumptions of average system demand and average generation dispatch for the designated seasons.

The SMO have provided an estimate of €1.75m for the cost associated with this imbalance. This estimate was based on an analysis of 2005 Republic of Ireland figures using the Transitional Electricity Settlement System. This was determined assuming an average SMP of €80 per MWh and while no comparable data is available for Northern Ireland, an allowance has been made to reflect losses on the All-Island system. The analysis did not consider the impact of distribution connected generation.

On the basis of this analysis the SMO requested that €1.75m be provided in its operating costs to allow for this energy imbalance. The Regulatory Authorities propose that the full €1.75m be allowed for the initial tariff period, subject to a full *ex-post* review.

6.1.9 Other costs

The SMO have requested that the Regulatory Authorities allow full *ex-post* pass through on any costs incurred by the SMO when financing interest payments to generators for underpayments related to the settlement reallocation process.

The SMO have stated that they are not in a position to carry out a credible analysis of this cost at this time, and therefore the Regulatory Authorities propose that the cost associated with this process be reviewed *ex-post* with allowed costs feeding into the subsequent tariff period(s).

The SMO have also stated that they may incur costs due to the VAT arrangements that will be in place, and requested that the associated costs be dealt with *ex-post* as they cannot be estimated accurately at this time. The Regulatory Authorities propose that the costs associated with the VAT arrangements be reviewed *ex-post*, as requested by the SMO, with allowed costs feeding into the subsequent tariff period(s).

6.1.10 Interest provisions

The SMO's revenue submission proposes that the working capital requirements of the SMO, including any currency related imbalances not covered by the TSC currency charges, be provided by EirGrid and SONI on a 3:1 basis and that financing be repaid with the WACC of each parent applied to their respective portions.

6.1.10.1 Proposals

However, it is the Regulatory Authorities' view that working capital provided by the parent companies should be subject to the methodology outlined below, which is consistent with that currently in place for working capital provided by the parent companies while carrying out their transmission system operator functions.

For EirGrid, the following methodology has been used for determining the interest rate (I) that is applied to allowed under and over-recoveries of transmission revenue for the previous year ($t-1$), and has been in use by the Commission since 2002¹⁴:

I_{t-1} is the mean of the twelve monthly average three month Euribor rate between April and March of the year $t-1$ (that is, April of year $t-2$ to March year $t-1$) and adjusted for the difference in the mean of the twelve point to point Euro zone harmonised index of consumer prices and the Irish harmonised index of consumer prices between April and March of the year $t-1$.

¹⁴ In addition, EirGrid is also allowed working capital which includes 20% of EirGrid's external costs to which WACC is applied.

For SONI the following interest rate is used:

the arithmetic mean of the daily base rates of Northern Bank Limited (or such other bank as the Authority shall specify from time to time) current from time to time during the period in respect of which the calculation falls to be made.

The Regulatory Authorities propose that working capital provided by the parent companies to cover fluctuations during the tariff period, and allowed under-recovery of revenue during the tariff period, be paid back in the subsequent tariff period(s) with the appropriate amount of interest as determined using the above methodology. As the SMO proposes that working capital will be provided by the parent companies on a 3:1 basis, this means that the “Euribor rate” will be applied to three quarters, and the “Northern Bank Limited” rate will applied to one quarter, of the working capital provided. This reflects the cost of short-term financing required to provide the SMO’s working capital needs.

In addition, it is proposed that any allowed over-recovery of revenue be recovered from the SMO in the subsequent tariff period(s) with the appropriate amount of interest determined using the above methodology.

It should be noted that while it is proposed that the total amount of interest be based on the ratio proposed by the SMO for the provision of working capital by the parents, the ratio by which funding is provided will not be specifically approved here.

These proposals may be updated, prior to the publication of the final decision document, to ensure consistency with any update to the Regulatory Authorities position on the interest rate to be applied for the transmission operator function.

6.2 ASSET BASE AND DEPRECIATION

6.2.1 Options for assessment of asset base

There are four popular methods for the determination of initial rate bases:

- Book value: the value of the original investment, that is, the sum paid for assets, less cumulative depreciation, is used. This method is usually reliable, once there are auditing procedures in place, and stable values are usually attained.
- Reproduction cost: the cost of reproducing the asset in question is used.
- Replacement cost: the replacement cost or the new replacement value, that is, the cost of replacing the assets using the technology available at the time. This is the most economically efficient method for valuation, but the influence of technological innovations (related to reproducing the asset) may lead to sharp variations in the value.
- Market value: the price the assets would command if sold on the market is used. This may lead to a figure that is substantially different from the book value, giving rise to stranded assets.

6.2.1.1 Proposals

The book value method is proposed for the evaluation of the SMO asset base. This method allows the SMO to recover the costs incurred while establishing the market in a stable, sustainable and predictable manner, as per the regulatory principles outlined in Section 3.

6.2.2 Asset base

This section covers the actual and budgeted capital costs related to EirGrid and SONI's involvement in establishment of the SEM. These include project implementation costs related to the SEM programme and SMO establishment project, and costs associated with market trial. It should be noted that these costs are only those which have been, or will be, incurred prior to Go-Live. In addition, costs incurred by EirGrid and SONI in relation to system operator readiness for the SEM will be recovered through mechanisms other than the SMO tariffs and so are not detailed here.

These costs will be recovered through the SMO tariffs, as per Section 9 and subject to the method and length of depreciation as outlined in Section 6.2.3.

The capital costs to be recovered are detailed in the below table. These have been updated to reflect the most recent approved costs and, in the case of market trial, proposals included in this paper.

SEM capital expenditure	Sought by SMO	Proposed by RAs
	€m	€m
SEM programme	42.609	37.275
SMO establishment	8.070	6.489
Market trial	3.783	3.328
Total:	54.462	47.092

Table 4: Capital costs sought by the SMO and proposed by the RAs (in mid-2007 terms)

SEM Programme Expenditure

The objective of the SEM programme is to ensure the smooth implementation of the market systems and processes required for operation of the SEM. The SEM programme expenditure relates to the costs involved in the analysis, design, specification, procurement and implementation of market systems. This expenditure is being incurred on a phased basis with oversight and approval of all costs conducted by the Regulatory Authorities.

The above figures are based on those included in the SMO revenue submission, but have been updated to include the most recently approved figures.

SMO Establishment Expenditure

The objective of the SMO establishment project is to ensure that a SMO organisation is established, and operationally ready, in time for commencement of the market trial. Establishing the SMO has significant legal, contractual, system and process impacts for SONI and EirGrid. Implementing this change requires a large number of activities to be undertaken, with contributions from a wide range of personnel. The establishment of the SMO involves the procurement of numerous corporate IT systems to enable its operation, the requirements for which have been identified as part of the SEM establishment programme.

This expenditure is being incurred on a phased basis with oversight and approval of all costs conducted by the Regulatory Authorities.

The above figures are based on those included in the SMO revenue submission, but have been updated to include the most recent approved figures.

Market Trial

A number of SMO costs will be incurred before the “Go-Live” date of November 1st 2007. These are required to ensure the SMO organisation is operational during Market Trial. Market Trial is the penultimate project step ensuring that the people, processes and systems are operationally ready for market opening. Market Trial spending includes payroll, IT, facilities, professional fees and general & administrative.

The figures for market trial are scaled to allow for reduction in proposed SMO staff number as detailed in Section 6.1.1. Specifically figures related to payroll and IT have been reduced. This allows for the fact that if staff are not required after “Go-Live” as per Section 6.1.1, then they will not be employed during the market trial period, and less personal IT equipment will be needed.

6.2.2.1 Proposals

It is proposed that the above costs totalling €47.092m be capitalised and the depreciation recovered through the SMO tariffs.

As not all of these costs have been incurred to date (some are budgeted provisions) the actual outturns will be allowed for in subsequent tariff periods, subject to the usual regulatory scrutiny.

6.2.3 Depreciation

This section gives a brief description of different types of depreciation, and evaluates the most appropriate option for the regulation of the SMO. The appropriate length of the depreciation period is also covered.

6.2.3.1 Method of depreciation

There are a number of possible methods through which asset bases may be depreciated, such as sinking fund, declining balance, activity based, sum-of-years-digits, units-of-production, and units-of-time depreciation.

However, the most common form of depreciation is the straight line method, where it is assumed that the value of the asset drops in equal, constant yearly increments over a given amount of time. That is, the asset is depreciated by the same amount each year over a given time period. This method is very common.

6.2.3.2 Timeframe for recovery

Typically where IT systems are implemented these costs are recovered over a five year period. This is consistent with current depreciation rules applied by the parent companies and international practice. Both BETTA and NEMMCO market implementation costs were depreciated and recovered over a five year time frame. In the US, ISO NE and CAISO depreciation is conducted using straight-line methods over an estimated useful asset life ranging from three years to five years for IT systems.

6.2.3.3 Proposals

It is proposed that in common with other MO functions and for IT functions more generally, straight line depreciation over a five-year period be adopted.

When accessed against the principles outlined in Section 3, this proposal is seen to be sustainable, stable, unambiguous and predictable. The capital costs will be recovered by the SMO in a manner that is consistent with current international best practice and the method currently employed by the parent companies.

The treatment of the asset base may be reassessed in subsequent tariff periods.

6.3 Treatment of new investment

The SMO revenue submission does not propose that any new investment incurred during the initial tariff period would be recovered during that tariff period. The treatment of new investment costs will therefore be considered at a later date, once any future investment costs have been assessed.

6.4 WEIGHTED AVERAGE COST OF CAPITAL

The Regulatory Authorities agree that the SMO should be allowed to recover its reasonably incurred capital costs, and that the recovery of these costs should include fair remuneration for the parent companies, that is, a fair WACC.

6.4.1 Options

A number of sources can be assessed while determining an appropriate WACC for the SMO activity:

- The cost of capital of the two SO organisations. This provides guidance on what returns the stakeholders require, but does not take into account differences in risk between an SMO operation and an SO activity.
- The cost of capital allowed for infrastructure projects throughout Northern Ireland and Ireland. The obvious difference in risk between these types of projects and a SMO means that this may not be a particularly useful comparison.
- The cost of capital allowed for SMOs elsewhere. This is not straightforward as many SMOs are not-for-profit organisations. In addition, many SMOs are also SOs which have different levels of risk.
- The cost of borrowing for SMOs. The level at which a SMO could borrow funds on the open market might provide a good guide as to the risk associated with the activity and the appropriate cost levels. This would be an upper end indication as in practice one would expect some degree of equity financing which has inherently lower beta, within the overall cost of capital for the SMO.

6.4.2 Proposals

While none of the above comparisons give a direct result for the appropriate cost of capital for the SMO, the Regulatory Authorities propose that the cost of capital for the parent companies be used for the SMO activity for the initial 11 month period.

This does not take the different risk levels between an SMO operation and an SO activity into account, but provides guidance on the returns which stakeholders require, and is in the Regulatory Authorities view the most appropriate option for the first tariff period.

These proposals lead to a WACC for EirGrid of 5.63%, and while the WACC for SONI's portion of these costs has not been finalised, a rate of 6.5% has been assumed for SONI at this time.

Using the updated capital and market trial costs as outlined in Section 6.1, and based on the 3:1 ratio by which EirGrid and SONI fund these costs, these proposed WACC's result in a total figure of €2.3m.

However, it should be noted that, while it is proposed that the total WACC provided to the parent companies during the initial 11 month tariff period be calculated on the basis of a 3:1 split of funding between EirGrid and SONI, this proposal will not affect the calculation of the WACC in subsequent tariff periods.

It should also be noted that differences between the figure included by the SMO in its revenue submission and that proposed by the Regulatory Authorities, that is, €2.7m versus €2.3m, are due to the Regulatory figure being based on the most recent approved capital costs (and revised market trial figures), and the use of a SONI WACC of 6.5% (instead of the 6.9% value used by the SMO).

6.5 INFLATION RATE

The figures provided by the SMO are in mid-2007 prices. In order to increase these figures to mid-April 2008 prices, that is the mid-point of the initial tariff period, the Regulatory Authorities increased these figures by a value based on the average increase in the Consumer Price Index (CPI) for the past 12 months (May 2006 to April 2007 inclusive) as per the Irish Central Statistics Office website, and the average increase in the Retail Price Index (RPI) for the past 12 months (May 2006 to April 2007 inclusive) as per the UK National Statistics Office website. A combined 12 month value of 4.34% was reached by weighting the values from each jurisdiction (that is, the CPI value for Ireland and the RPI value for Northern Ireland) according to the 3:1 financing split used by the SMO.

This methodology may be updated prior to the publication of the decision paper once the Regulatory Authorities' assumptions in relation to inflation in 2007 and 2008 have been finalised. As with all costs the inflation rate will also be reviewed *ex-post*.

6.6 SUMMARY

The total revenue proposed by the SMO in its submission is €25.5m for the initial tariff period in mid-2007 terms, covering its proposed operational costs, capital costs, depreciation and WACC. The Regulatory Authorities have carried out an analysis of these categories and propose a total SMO revenue of €21.5m for this period. The differences are summarised in the table below (detail is provided in preceding sections).

	Sought by SMO €m	Proposed by RAs €m
Operating costs (excl. depreciation)	12.8	10.6
Depreciation	10.0	8.6
WACC	2.7	2.3
Total:	25.5	21.5

Table 5: Total allowed revenue sought by SMO and proposed by RAs in mid-2007 terms

Applying the inflation rate proposed by the Regulatory Authorities to bring these figures to mid-tariff period prices (mid April 2008 - see Section 6.5) the total allowed revenue sought by the SMO is €26.5m and the total allowed revenue proposed by the Regulatory Authorities is €22.4m.

	Sought by SMO €m	Proposed by RAs €m
Operating costs (excl. depreciation)	13.3	11.0
Depreciation	10.4	9.0
WACC	2.8	2.4
Total:	26.5	22.4

Table 6: Total allowed revenue sought by SMO and proposed by RAs in mid-tariff year terms

All SMO costs allowed for the initial tariff period will be subject to an *ex-post* review and determination by the Regulatory Authorities. This determination of efficiently incurred costs may result in an over or under-recovery of revenue being fed through to the subsequent tariff period(s). Furthermore, all proposed costs/revenues apply to the initial tariff period only and will be separately reviewed for the subsequent tariff period(s) as the SMO function develops and its costs become more certain.

7. IMPERFECTIONS CHARGE

7.1 BACKGROUND

The imperfections charge covers the net cost of constraints payments, makewhole payments, and uninstructed imbalances. This cost is estimated *ex-ante* and recovered from suppliers on a MWh basis through the imperfections charge. In the SMO revenue submission the cost of makewhole payments and uninstructed imbalances are estimated to be zero, with most attention being paid to the cost of constraints.

7.2 ESTIMATION OF CONSTRAINTS COSTS

An estimate of €109m is included in the SMO revenue submission for the cost of constraints during the 11 month period from 1st November 1st 2007 to 30th September 2008. The detail behind the calculation of that figure is also included in the SMO's submission.

Essentially, by performing multiple runs of the PLEXOS model, adding in key reserve requirements and specific transmission constraints, the effect in terms of increases in total production cost was analysed. This difference in production cost between these simulations represented the constraint costs associated with the modelled transmission and reserve constraints. Since it was not possible to model all constraint cost drivers in PLEXOS, further analysis of specific constraint effects was performed. This built on the PLEXOS modelling described above and also looked at the effect and impact of:

- perfect foresight,
- market modelling assumptions,
- specific transmission system constraints,
- specific reserve constraints, and,
- other factors.

The figures attributable to each are detailed in the SMO revenue submission.

In addition to the information provided in the revenue submission, the System Operators have also facilitated workshops with the Regulatory Authorities, which allowed further discussions regarding their modelling work. This examination led to the regulatory proposals outlined in the following sections.

7.3 RECOVERY OF CONSTRAINTS COSTS

As stated previously, the cost of constraints is estimated *ex-ante* and this estimate is recovered during the relevant tariff period through the imperfections charge. However, it is almost certain that differences between the costs being recovered and paid out will lead to instances where the SMO will:

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

To allow for the first scenario, the SMO have proposed that the parent companies provide this funding on a 3:1 basis, with EirGrid providing 75% and SONI providing 25% of the funding.

The SMO proposes that in the SEM both EirGrid and SONI will have standby facilities in place cover their share of the costs. This is consistent with the situation in the current Irish market, where EirGrid have entered into an agreement with a number of banks to provide a standby facility for the provision of funding. To the extent that funds are actually drawn under the standby facilities provided by EirGrid and SONI, the SMO propose that the actual interest costs incurred be allowed on a pass through basis. This cost will be based on a rate as charged to EirGrid by its banks for its share of the funding, and a rate as charged to SONI by its banks for its share of the funding.

The SMO also proposes that differences between constraint outturns and forecasted amounts, and the associated cost of funding be dealt with in the following tariff period.

7.4 PROPOSALS

7.4.1 Imperfections charge

The Regulatory Authorities propose that the full estimate provided for the net cost of constraints, makewhole payments and uninstructed imbalances, that is €109m, be recovered through the imperfections charge during the first 11 month tariff period. This cost allowed for the initial tariff period will be subject to review and determination ex-post, with allowed under or over-recoveries feeding into the subsequent tariff period(s).

Of this, €4.5m covers constraint payments related to wind curtailment. While the policy in relation to wind curtailment in the SEM has not been finalised by the Regulatory Authorities at this time, it is proposed that this cost (included in the €109m) is allowed at this stage, but that this will be reviewed prior to publication of the final decision on SMO revenue and tariffs in September in view of regulatory policy on this issue.

Given that this figure is in mid-2007 terms it is also proposed to inflate this to mid-April 2008 prices, that is the mid-point of the tariff period, using the methodology outlined in Section 6.5, leading to a total figure in mid-April 2008 prices of €113.5m.

Using the assumptions provided in the SMO revenue submission, this leads to an imperfections charge of €3.234 / MWh.

7.4.2 Provision of working capital

The Regulatory Authorities propose that, as per the SMO revenue submission, the funding of working capital requirements be provided by EirGrid and SONI.

However, the Regulatory Authorities propose that funding required to cover fluctuations during the tariff period, and any allowed under-recovery of revenue during the tariff period be paid back, in the subsequent tariff period(s), with the appropriate amount of interest as determined using the methodology outlined in Section 6.1.10. This reflects the cost of short-term financing required to provide the SMO's working capital needs.

Similarly, for situations where the revenue recovered by the SMO through the imperfections charge is greater than that paid out in constraints, it is proposed that the imperfections charge in the following tariff period(s) will be reduced by an appropriate amount to reflect the allowed over-recovery and the associated interest as determined using the methodology outlined in Section 6.1.10.

The SMO's revenue submission proposes that in some cases, when constraint costs reach a certain level, the money would not be paid out right away. Instead the

validity of the level of constraints would be investigated prior to payment. However, the non-payment of constraints to generators is not allowed by the TSC and hence this proposal cannot be allowed. Nevertheless it is agreed that the SMO should highlight exceptional levels of constraints to the Regulatory Authorities, as per the revenue submission, if such scenarios arise.

It is not proposed at this stage to incentivise on the SMO to reduce the cost of constraints in the SEM. As per the SMO's submission the SMO itself does not balance the system and has no influence over the level of constraints.

8. GENERATOR-UNDER-TEST TARIFFS

8.1 BACKGROUND

Testing of a new generating unit, or an existing generating unit returning from major overhaul, is generally required in advance of the plant becoming fully operational. During a test the generator commonly requires that it be run at certain levels of output or a certain profiled output. It may not be possible to accurately predict the actual level of output of the unit at any specific time and there may be a significantly higher risk of a fault than for a fully commissioned generator.

These factors lead to increased system operating costs for the Transmission System Operator (TSO) for several reasons.

The TSO will not be able to predict the output of the unit under test in advance with any degree of confidence, as it is common for tests to be cancelled at short notice or to vary significantly from their nominated level of output. To match supply and demand, the TSO will generally have to commit extra units to ensure a rapid response to changes from the unit under test's scheduled output and to ensure that the system would remain within normal security standards following the loss of the unit.

As the unit under test is at a significantly higher risk of tripping, the TSO will carry additional operating reserve to ensure that security of supply is not compromised. This leads to additional costs associated with constraints, increased reserve premium, additional run hours, and trips and fast wind downs¹⁵.

Under the TSC, a testing generator must pay a generator-under-test tariff which reflects the increased constraint cost (not other costs such as increased reserve) that they are causing to the system.

This section outlines proposals on the methodology for the determination of generator-under-test tariffs for recovery of the extra constraint cost and makes a recommendation on the appropriate methodology to be used for modelling these tariffs, for use during the initial 11 month tariff period.

8.2 OPTIONS

8.2.1 Option A: A single tariff

A single tariff (€/MWh to be determined), independent of unit size, MWh output or reliability (test phase), could be multiplied by the unit's metered output to derive the test charge.

Given that this proposal is for a single rate applied to all units under test, it would not be as cost reflective as a rate that varied with unit output or test phase. As the rate is likely to be based on some average constraint cost, it is likely that large units would be charged proportionally less than small units (of course the rate is multiplied by the unit output so large units will ultimately pay a larger charge than small units).

It is proposed that this tariff would only cover the constraint element of generator testing. In order to avoid the overhead and complexity associated with a second charge to recover a relatively small amount of money, EirGrid would recover any increase in Ancillary Services costs from demand customers through the TUoS mechanism rather than directly from the unit under test.

¹⁵ Further detail is provided on these charges in "2005 Generator testing tariffs, background and calculations", www.eirgrid.com

8.2.2 Option B: Single tariff per test phase

This option is similar to 'A' only that there would be a single tariff for each test phase. However, the tariffs would continue to be independent of unit size or output. This option would require the relevant TSO to notify the SMO of the relevant test phase of the unit. The SMO would then apply the test tariff applicable to that test phase.

This option has the advantage over option A of allowing different tariffs to be applied depending on the reliability of the unit under test. So unit under test would be incentivised to progress through their testing to improve reliability and reduce the testing tariff.

There are likely to be implementation issues associated with this option:

- a business process/system would need to be put in place to facilitate the TSO informing the SMO of the test phase,
- the market systems will require some form of a look-up table to convert test phase to the appropriate tariff.

It is proposed that this tariff would only cover the constraint element of generator testing. In order to avoid the overhead and complexity associated with a second charge to recover a relatively small amount of money, EirGrid would recover any increase in Ancillary Services costs from demand customers through the TUoS mechanism rather than directly from the unit under test.

8.2.3 Option C: Unit size specific tariffs

This proposal is for a tariff that varies according to defined generator capacity bands. This proposal is similar to the structure of EirGrid's existing schedule of tariffs however it would relate to a unit's size (or capacity) rather than output and would not vary according to test phase. So, a single tariff would apply to the unit throughout its testing period.

A tariff that is unit size specific will allow more cost reflective charging than a single tariff applied to all units, as proposed in options A and B, as the tariff applied to larger units would be greater than that applied to smaller units.

This proposal uses a fixed schedule of tariffs (which would be determined in advance and fixed for the year) with no testing tariff related TSO-SMO information exchanges required in settlement timescales. This option does not require any system changes and could be implemented through simple TSO-SMO business processes.

It is proposed that this tariff would only cover the constraint element of generator testing. In order to avoid the overhead and complexity associated with a second charge to recover a relatively small amount of money, EirGrid would recover any increase in Ancillary Services costs from demand customers through the TUoS mechanism rather than directly from the unit under test.

8.3 Proposals

The Regulatory Authorities propose, in agreement with the System Operators, that Option C, unit size specific tariffs, are implemented for the following reasons:

- The application of this simple charging structure reflects the relatively low frequency of occurrence and relatively small transmission system costs incurred;

- A tariff that varies according to unit size allows the recovery of more cost reflective charges for the unit under test. The risk posed by a large generator testing on the system and failing would be greater than that posed by the testing and possible failure of a smaller generator;
- Units under test will be required to contribute towards the costs of testing and will be incentivised to progress through testing in a timely manner;
- This option avoids differing charges being levied by EirGrid and SONI;
- Can be accommodated within market systems – this is critical if the proposal is to be implemented on before SEM Go-Live.

Only the proposed methodology for the calculation of generator-under-test charges is discussed in this paper. The actual tariffs will be published prior to “Go-Live”, as per the TSC.

9. FORM AND MAGNITUDE OF CHARGES

As part of its role in the administration of the market there are charges which the SMO must levy in order to recover its own allowed costs and allowed market related costs (see Sections 6 and 7). These charges consist of:

- energy and capacity charges,
- the accession fee,
- the participation fee,
- the imperfections charge,
- the MO charge, and,
- the generator-under-test tariff.

While the detail of some charges is strictly defined in the TSC, for others only an outline has been given. This section clarifies the Regulatory Authorities' proposals on any remaining issues related to each charge.

9.1 ENERGY & CAPACITY CHARGES

The structure and detail of charges for energy purchased from the "pool" is defined in the TSC. It will be a per MWh charge, the amount of which will be set for each half hour by the engine responsible for settling the market. This paper does not make any new proposals in relation to the form and magnitude of energy charges.

The detail for capacity charges is being dealt with as part of another consultation process and so no proposals are made here in relation to capacity charges.

9.2 ACCESSION FEE

The TSC states that the accession fee will be a fee paid to the SMO by each applicant for accession to the TSC, to cover the SMO's costs incurred in assessing the application.

In the SMO revenue submission a fee of €6,000 per party was proposed, based on 10 staff man-days and 0.5 days legal advice required to process an accession application. Following analysis by the Regulatory Authorities, this figure was revised downwards by the SMO to a fee of €4,500 per party, based on the seven staff man-days work and 0.5 days legal advice required to process an accession application.

The above proposal is in agreement with the TSC and, based on the SMO's revised submission on the work involved in processing an application, the Regulatory Authorities propose an accession fee of €4,500 per party.

It is also proposed that this fee will be published by the SMO in both Euro and Sterling.

Information in relation to the treatment of accession fees during the pre Go-Live period will be published separately.

9.3 PARTICIPATION FEES

In the TSC the participation fee is defined as "the fee payable with an application to register and become a Participant in respect of any Unit". In this section proposals on the structure of the fees and the magnitude of the fee charged to each Unit are provided.

In the SMO revenue submission participation fees of €12,250 per Supplier Unit and €13,750 per generator unit were proposed, based on the 24.5 and 27.5 staff man-days work respectively to process a participation application. Following analysis by the Regulatory Authorities, the SMO reduced its figures to €11,000 (22 days work) and €12,500 (25 days work) for supplier units and generator units respectively.

Based on the SMO's revised assessment of the work involved in processing an application, the Regulatory Authorities propose that a participation fee of €11,000 and €12,500 be charged to supplier and generator Units respectively.

It is also proposed that this fee will be published by the SMO in both Euro and Sterling.

Information in relation to the treatment of participation fees during the pre Go-Live period will be published separately.

9.4 IMPERFECTIONS CHARGE

This charge has been outlined in Section 7.

9.5 MARKET OPERATOR CHARGE

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

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

During the first 11 month tariff period, these charges will recover SMO operational costs, the appropriate amount of depreciation associated with the SEM related capital costs incurred by EirGrid and SONI, and the appropriate WACC. These proposed costs are detailed in Section 6.

However, the TSC does not specifically state what proportion (or type) of costs should be allocated to either the fixed or the variable element of the charge for recovery. The options are outlined below.

9.5.1 Options

A number of options can be considered in relation to the recovery of the costs outlined above through either the fixed or variable element of the market operator charge:

- All costs considered to be driven by number of Units participating in the market could be recovered through the fixed charge. However, this could lead to barriers to entry, and since the initial capital costs benefit the whole market on a per MWh basis by creating a better commercial environment for the purchase and sale of electricity, it is difficult to define the costs that are driven by the number of Units participating in the market;
- Capital costs could be recovered via the fixed charge on the basis that all other costs are MWh driven, while capital costs could be argued to be a function of the size of the settlement system, itself driven by the number of participant units that the market must cater for. This argument presumes that capital items include only settlement system development costs and that the system costs are driven by the number of participant units. However, system

costs may also be affected by other requirements and not simply the number of participating units. If this solution were applied to initial capital costs only, then it would lead to a gradual shift of capital cost recovery from the fixed charge to the variable charge, leading to unpredictability and instability in the tariff;

- The fixed charge could be set to zero on the grounds that none of the costs are driven by the number of Units participating in the market (at least to a sufficient extent to justify a charge per Unit, other than the Participation Fee).

Combinations of the above options were also evaluated against regulatory principles, leading to the below proposals.

9.5.2 Proposals

After an evaluation of the above options and combinations of the above options against the regulatory principles outlined in Section 3, the Regulatory Authorities propose that the majority of costs, 95%, be recovered through the variable charge.

In relation to the €1.75m caused by energy imbalances, as outlined in Section 6.1.8, it is proposed that all of this cost be recovered through the variable charge. This will essentially ensure that suppliers cover any difference between their energy payments to the SMO and the SMO's energy payments to generators.

Applying this methodology to the costs proposed by the Regulatory Authorities for the initial tariff period results in a variable charge of €0.609 / MWh to suppliers, bringing in total revenue of €21.4m through the variable charge.

It is proposed that the fixed charges to generators and suppliers will recover the remaining 5% of all costs between them in a 95:5 ratio. That is, the revenue recovered through the fixed charges will be weighted to ensure that for each generator Unit registered the revenue recovered through the fixed MO charge to generators will be 19 times the revenue recovered through the fixed MO charge to suppliers for each supplier Unit registered.

Furthermore it is proposed that the fixed market operator charge to generator Units varies by MW of installed capacity. This is accommodated by the TSC which states that the fixed market operator charge to generator Units may be different for each generator Unit.

In summary, the proposals lead to:

- A variable MO charge of €0.609 / MWh for the initial tariff period;
- A fixed MO charge to generator Units of €113 / MW installed capacity¹⁶. In other words, a total charge of €113 / MW installed capacity for the initial tariff period; and,
- A fixed MO charge to supplier Units of €1,056 / supplier Unit - that is, a total charge of €1,056 per supplier Unit for the initial tariff period.

This allows the total revenue proposed by the Regulatory Authorities for the SMO, €22.4m in mid-tariff period prices, to be recovered: €21.4m through the variable charge, €1.0m through the fixed charge to generators, and €26,000 through the fixed charge to suppliers.

As per the SMO revenue submission it is proposed that the fixed market operator charge be billed on a monthly basis.

¹⁶ This assumes there will be 8,855 MW installed capacity on the system in 2008

These proposals sustainable, stable, unambiguous and predictable, and are in agreement with the regulatory principles outlined in Section 3.

The avoidance of barriers to entry, which could be caused by high fixed charges to generator and supplier units, is essential in maintaining a sustainable regulatory environment. In addition, the above proposals will allow the regulated business to finance its allowed operational costs, and any necessary capital expenditure, so that it can continue to operate in the future to the ultimate benefit of customers.

The above proposals also rule out the movement of cost recovery from fixed to variable charges (or vice versa), which is caused by some other options. This movement would cause unpredictability and instability in the tariffs, and conflicts with the principles outlined in Section 3.

Information in relation to the treatment of accession and participation fees during the pre Go-Live period will be published separately.

10. PROVISION OF COMMENTS

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

Comments on this paper should be forwarded, in electronic form, to John Orme and Simon Scott at jorme@cer.ie and simon.scott@niaur.gov.uk by 17:00 on Friday 13th July 2007.