Commission for Energy Regulation
An Coimisiún um Rialáil Fuinnimh

High-Level Methodology for calculating the Public Service Obligation (PSO) Levy for 2007

A Response and Decision Paper

CER/06/036
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1. Executive Summary

The Commission for Energy Regulation (CER) is required to calculate and notify all relevant parties of the level of the Public Service Obligation (PSO) levy each year in accordance with section 39 of the Electricity Regulation Act 1999 (the Act), (Public Service Obligations) Order 2002 (SI 217 of 2002) as amended.

Under Section 9(2) and (3) of Statutory Instrument (SI) 217 the Commission must approve ESB's estimated additional costs incurred by complying with the PSO, inclusive of the administration costs incurred by the Transmission System Operator (TSO), suppliers and the Distribution System Operator (DSO) in collecting payment of the PSO levy, within the relevant levy period. The SI sets out the timetable to be followed by all relevant parties in this approval process.

A key element in the calculation of the PSO levy has historically been the Commission's decision on the Best New Entrant (BNE) price. The BNE price is essentially a substitute for the market price, representing the all-in cost (per MWh) of a BNE Combined Cycle Gas Turbine (CCGT) operating at baseload, and at efficiencies, availabilities and cost parameters determined by the Commission. The use of the BNE price as the basis for calculating the PSO levy was approved by the European Commission for a transitional period until such a time as a market price is available.

The introduction of the Single Electricity Market (SEM) in July 2007 – and with it a market price[1] - raises some important issues in relation to the calculation of the PSO levy. In particular, given that a market price will be available for half of the 2007 calendar year, the Commission must address the question of what benchmark price is to be used for the *ex ante* calculation of the PSO levy for 2007.

The methodology underpinning the calculation of the PSO has a significant impact on ESB's Public Electricity Supply (PES) tariffs, which continue to be the benchmark for independent players in the market. There is a strong argument for ensuring a consistent approach between the PES tariff-setting and the PSO levy-calculation processes. With this in mind, possible options were outlined in the Commission's earlier consultation paper, *"ESB PES Tariffs and the Transition to the SEM"* (CER/06/002), published on 16th January 2006. However, there was no evidence of consensus on the preferred methodology for calculating the levy in the responses submitted to this consultation.

Given the importance of PSO levy in terms of the electricity volume[2], the final electricity price[3] and the PES tariff, the Commission felt that this matter

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[1] In fact, the SEM will introduce a number of prices in the market – a single pool price, a capacity payment and the prices underpinning forward contracts.
[2] The estimated PSO volume of electricity for the purposes of calculating the 2005 levy was almost 4 TWhs, representing approximately 17% of total electricity sales.
[3] The amounts to be recovered through the levy in 2005 and 2006 were €103 million and €44 million, respectively.

merited a separate consultation. On this basis, the Commission published a consultation paper entitled, "*Proposed High-Level Methodology for Calculating the PSO Levy for 2007*" (CER/06/026) on 10th March 2006, which outlined four options, including the Commission's proposed option, for calculating the 2007 PSO levy.

In coming to its final decision the Commission has carefully reviewed and considered the responses to this consultation. It has assessed the options against a number of criteria as outlined in this paper. It has also been mindful of the related discussion and consultation concerning the approach to be taken in determining the PES tariffs in 2007. Given the above, the Commission's chooses Option 1, which will operate as follows:

(a) There will be two PSO levies in 2007;

(b) The first levy will cover a period of six months up to the SEM go-live date of July 2007. The levy will be based on the BNE and will be determined in line with the dates specified in SI 217 of 2002. The calculation of BNE will also be consulted upon in accordance with standard tariff process timelines; i.e. a BNE consultation paper will be issued in June 2006.

(c) The levy for the second period will cover the latter six-months of 2007. It is envisaged that the levy will be determined over quarter 4 of 2006 and quarter 1 of 2007. The Commission will determine an appropriate market price for calculating the PSO levy under the SEM. This will be consulted on with the industry in advance of a decision.

(d) The first six-month levy will not comprise a fuel variation component. The Commission will examine the merits of a PSO levy fuel variation clause for the second 2007 and subsequent levy periods.

This decision – Option 1 – is contingent on the necessary legislative amendments being made in advance of the Commission's draft levy notification on the 30th June 2006. The required changes pertain to the definition of the levy period in SI 217 and the timelines for issue of the PSO levy notification. The Commission has contacted the Department of Communications, Marine and Natural Resources (DCMNR) in this regard.

In the event that legislation is not amended the Commission will revert to the use of BNE as the basis for the calculation of the PSO levy for the calendar year 2007. The Commission believes that this is the only workable alternative.

2. Background

The additional costs incurred by the ESB from holding the relevant PSO contracts form the basis of the PSO levy and are calculated annually in accordance with parameters specified in the relevant PSO Notification and the corresponding European Commission State Aid decision.

The European Commission's State Aid decision (N826/01), in relation to the Alternative Energy Requirements (AERs), defines the additional costs as the difference between:

> *"(…) the price of electricity as acquired by ESB from the green electricity producers under the AER long term contracts.*
>
> *[and]*
>
> *(…) the price at which ESB could have sold this electricity on the market, as estimated yearly by the CER on the basis of a time weighted average of the electricity market price as sold by electricity producers in a fully liberalised Irish market. Until the full liberalisation of the Irish electricity market, in year 2005, it is likely that such market price will not exist. In the absence of market price, the CER will compute the benchmark value on the basis of the assumption that such price would be driven by the costs of a best new entrant".*

The current electricity market in Ireland is a bilateral wholesale market and the appropriate benchmark price for the purposes of calculating the PSO, in the absence of a price which can be derived from a centralised market, is currently the BNE.

The BNE price comprises *"the all-in cost per MWh of a BNE Combined Gas Turbine (CCGT) operating at baseload, and at efficiencies, availabilities and cost parameters determined by the CER".*

To date this has been the methodology utilised and applied to the annual PSO levy in line with paragraph 5.10 of the November 2000 PSO Notification.

The new wholesale electricity market, the SEM, will be in place in July 2007. The SEM will be a pool market and will introduce a number of prices, including a single pool price, capacity payments and forward contract prices. Therefore, an appropriate market price, other than BNE, will be available for half of the 2007 calendar year.

The existence of an SEM market price for only half of a levy period[4] raises the most immediate issue in relation to the PSO levy. The Commission must address the question of what benchmark price – BNE or an SEM market price (or both) - is to be used for the *ex ante* calculation of the PSO levy for 2007. There are a number of legislative and practical issues which may inhibit the Commission's options of resolving this issue.

In its consultation paper (CER/06/026), the Commission's proposed methodology was to set two six-month PSO levies in 2007, the first based on the BNE price and the second on a modelled SEM market price. Comments

[4] The levy period is 12 months.

were invited on the issues and proposals in the paper by Friday 24th March 2006.

The following three parties responded to the consultation paper:

- Airtricity
- ESB Customer Supply (ESB CS)
- Viridian Power and Energy (VP&E)

The submissions are published on the Commission's website (www.cer.ie).

3. Options Outlined in Consultation Paper (CER/06/026)

This section provides a summary of the four options explored by the Commission for setting the 2007 PSO levy. The Commission assessed the four options against its legal obligations and the practical issue of determining a reliable SEM modelled price within the statutory timeframe. The Commission also assessed the options for consistency with the PES tariff approach and the corresponding criteria used for assessing the PES options.

Option 1: Two six-month PSO levies, the first based on BNE and the second based on a SEM market price
This option involves utilising a BNE benchmark price for the first half of the year and thereafter a time-weighted average SEM market price. While at odds with the 12-month levy period specified in SI 217 of 2002 it is consistent with the high-level methodology outlined in the PSO Notification and the corresponding European Commission decision. The first six-month levy would be approved according to the normal process, while it is envisaged that the second levy would be determined over Quarters 3 and 4 of 2006, when a modelled SEM market price will be available.

Option 2: Single-year levy based on the mean of BNE and a SEM market price
This option involves utilising a mean of the BNE price and a time-weighted SEM market price. While consistent with the calendar-year levy period specified in SI 217 it may be at odds with paragraph 5.10 of the Notification due to the fact that during the period January to July 2007, when a market price is not available, the BNE is not utilised as the benchmark price, and vice versa. However, on a practical level a modelled SEM market price will not be available within the statutory timescale to form the basis of the PSO.

Option 3: Single-year levy based on BNE
This option involves utilising a BNE price for the entire year 2007. As in the case of Option 3 this may be at odds with paragraph 5.11 of the Notification as for periods when a market price is available, i.e. from July 1st 2007, a time-weighted market price is not utilised as the benchmark price. This option is consistent with the calendar-year levy period specified in SI 217 and is the most straightforward to implement.

Option 4: Single-year levy based on a SEM market price
This option involves utilising an *ex ante* estimate of a time-weighted average of a market price for the entire year 2007. This may be at odds with paragraph 5.11 of the Notification, due to the fact that during the first half of the year, when no market price is available, the BNE is not utilised as an equivalent to a market price. This option is consistent with the calendar-year levy period specified in SI 217. However, on a practical level a modelled SEM market price will not be available within the statutory timescale to form the basis of the 2007 PSO levy.

Variation on Options
The consultation paper also raised the option of a mechanism – a fuel variation clause - to deal with fluctuations in market conditions throughout the tariff or levy period. The main advantages of the fuel variation clause is that it ensures that the price of PSO electricity tracks market prices close to real time and reduces the need for substantial and distortionary correction factors to be used in subsequent years. However, it would remove an intra-year hedge which is currently provided.

4. Summary of Submissions and Commission's Response

This section provides a summary of the main points raised by the respondents to the consultation. All respondents have indicated their preferred option and specific comments on each individual option were provided in most cases. Suggested principles for choosing the final option and for calculating the benchmark price were submitted by two respondents. In addition, the submissions drew attention to the significant interaction between the PSO and PES tariffs, and the resultant impact on the market as a whole.

This section also provides a Commission response to the mains points raised.

4.1 Summary of Responents' Preferred Options

Airtricity believes that the chosen option should be either Option 1 or Option 2, with a preference for Option 2. This is on the basis that it does not favour an explicit mid-year adjustment in tariffs as this could lead to the SEM being blamed for underlying energy cost issues.

ESB Customer Supply (ESB CS) proposes that the BNE be used for the full 2007 calendar year – Option 3. It believes that this would be the best means of dealing with issues of timeliness, resource management and economic efficiency. It emphasises, throughout its submission, that further detailed analysis will be required to establish an enduring methodology for setting the PSO levy under the SEM.

Viridian Power and Energy (VP&E) favours a modified version of Option 4. VP&E believes that a modelled SEM price would form a better proxy for a market price than the BNE. In the absence of a fully developed and validated

SEM model in time for setting the PSO levy, VP&E suggests that the best case model available be used and subsequently adjusted when the full model solution is available.

	Option 1	Option 2	Option 3	Option 4
Airtricity	√ (2nd)	√ (1st)		
ESB Customer Supply			√	
Viridian Power and Energy				√

4.2 Suggested Principles and Criteria

In making a decision on the appropriate high-level methodology for the calculation the 2007 PSO levy, Airtricity and ESB CS suggest a number of principles and criteria to be followed.

Airtricity suggests that the chosen methodology should:

- represent the best practical approximation to reality;
- utilise the best available, or potentially available, market information;
- minimise tariff disturbance;
- be consistent with the methodology likely to be used for 2008 and beyond; and
- should be compliant with the law.

ESB CS suggests that the following principles be adopted for a benchmark market price to be used for the calculation of PSO levy. A benchmark price:

- must be that seen by the majority of suppliers for their energy purchases,
- should reflect the best price that suppliers can buy energy and not the price that generators can get from selling that energy;
- should be as transparent as possible and allow accurate measurement;
- should be robust and keep any 'R' factor to a minimum; and
- should reflect the value for a complete year and not just part of a year as the PSO period is defined as a calendar year in the Notification.

Commission Response

The Commission's consultation paper (CER/06/026) outlined the practical and legal issues of the four options. The Commission is also guided by the additional criteria set out in the PES tariff consultation paper (CER/06/002), namely the:

- *impact on the independent sector and on competition;*
- *impact on the regulated sector;*
- *impact on customers;*

- *robustness to SEM start date slippage; and*
- *impact on the SEM work programme.*

Many of the suggested criteria above are dealt with in the Commission's more high-level criteria, which it believes are in line with its statutory duties and are therefore appropriate.

4.3 PSO Interaction with PES Tariffs

ESB CS supply emphasises the importance of PSO contracts to its business. It estimates that it will make payments of the order of €0.5 billion per annum under the contracts. In line with the tariff approval process, ESB CS applies the BNE price to the energy it procures from the PSO contracts and which it charges customers through the tariffs. Additional costs from holding the PSO contracts are recovered via the PSO levy.

ESB CS states that the approaches to setting the PES tariffs and the PSO levy have to be consistent as the data used to determine any tariff change will need to be amended at the time the new PSO benchmark price is established or changed. Therefore, ESB CS believes that either two tariffs and two PSO levies or one tariff and a single PSO adjustment are required.

VP&E states that the PSO timetable should closely track the tariff timetable for hedging purposes. It advises that if all-island harmonisation of the tariff timetable dictates that the PSO and tariff timetables may fall out of step, legislative changes should be considered at this early stage to enable the PSO timetable to track the tariff timetable.

Commission's Response

The Commission recognises the close and significant interaction between the PSO and PES tariffs. The benchmark price used as the basis for calculating the PSO levy materially affects the PES tariffs and consequently the price against which independent players are competing.

The Commission also accepts the need to ensure consistency between the tariff and PSO levy periods. It also believes it is important that the timetables for determining the PES tariffs and the PSO levy are consistent. At present, the final decision date on the PSO levy of 1st August is consistent with its PES tariff-setting process and timelines. The Commission is currently discussing the legislative requirements regarding the PSO levy timetable with the Department of Communications, Marine and Natural Resources (DCMNR).

4.4 PSO Methodology and the Single Electricity Market (SEM)

ESB CS believes that the basis of how the PSO costs are to be derived should be subject to a further consultation once the SEM market design and related issues are finalised. It believes that greater clarity is required before an enduring decision is made on the basis of PSO charges. Also, it states that the determination of PSO charges under the SEM in Northern Ireland should be consulted upon in parallel.

ESB CS states that there is considerable uncertainty over the appropriate benchmark for a market price to be applied to different contracts under SEM. For instance, it believes that thermal and wind plant should be referenced to different market prices, reflecting the different values of dispatchable and non-dispatchable facilities. It discusses why the complexity of various market prices under the SEM (pool price, forwards market prices, capacity payments etc.) and their interaction with the PSO needs to be considered. ESB CS also indicates that a review of the current principle, inherent in BNE, of buying the cheapest replacement energy for PSO-related contracts needs to be reviewed.

A more detailed discussion on these issues can be found in the ESB CS submission which is available on the Commission's website.

ESB CS proposes that further consultation be undertaken to determine the best benchmark price that should be used to calculate the price that its customers will pay for the PSO-contracted energy in their tariffs and through the levy.

Commission's Response

The Commission agrees that more detailed discussion and consultation will be required on the determination of an appropriate benchmark price to be used in the calculation of the PSO levy under SEM. This will be undertaken throughout 2006. The Commission will also be discussing common PSO related-issues under the SEM with its colleagues in the Northern Ireland Authority for Energy Regulation (NIAER).

While the SEM programme is progressing on schedule, it is accepted that there are decisions to be made in relation to the various prices in the SEM and how these will fit into the PSO. Indeed the appropriate contracting of PSO energy under the SEM and the impact of this on the levy will also need to be discussed at length. In consideration of the above, all necessary changes to legislation would need to be advanced.

It was on this basis that the Commission recognised, in its consultation paper, that it would not be practical to confidently set a PSO levy for the whole of 2007 based on a SEM market price under existing timelines.

4.5 Comments on Option 1

Airtricity believes that Option 1 will use the best available market data and is therefore the best approximation to reality. Airtricity states that two levies are likely to lead to some level of tariff disturbance. However, on the issue of tariff disturbance, Airtricity points out that, because rising energy prices in the past year show little sign of softening, the required PSO level is likely to remain low and therefore any tariff impact is likely to be low. Airtricity views Option 1 as acceptable in terms of consistency of methodology beyond 2008.

However, it recognises the restriction of current national law in relation to the levy period.

VP&E believes the use of BNE as a proxy for the market price, or the current definition of BNE, is inappropriate given that market conditions have changed significantly recently and the European Commission decision did not anticipate the BNE being used beyond 2005.

If the BNE is to be used, VP&E argues that the basis for determining the gas price for BNE should be fully transparent and the timetable for setting this should be such that market participants can access this gas price for hedging purposes.

Commission's Response

The Commission agrees that Option 1 should yield the most accurate benchmark market price and consequently the most accurate PES tariff and PSO levy. It will also be more consistent with the market price signals from July 2007 under the SEM than the other options. Tariff changes may occur, however this should only result from an estimate of different and more efficient price signals in the SEM. This will not become apparent until the SEM modelling workstream is sufficiently advanced. The Commission believes that Option 1 is a practical and workable solution should the relevant legislation be amended.

The methodology and calculation of the benchmark price for the calculation of the PSO levy will be consulted upon in detail during 2006.

4.6 Comments on Option 2

Airtricity believes that Option 2, in theory, should represent the best approximation to reality and would avoid mid-year tariff disturbance. However, given the incompatibility of the timetable for the delivery of SEM modelling data and the timetable for the calculation of the PSO, Airtricity believes that Option 2 would not utilise best market data in practice.

Airtricity states that the advantages of a single levy for 2007 outweighs any benefit from a more accurate two-levy approach, when both will be subject to subsequent correction and given that the latter carries the additional risk of mid-year change. Airtricity argue that this option could be interpreted as being compliant with paragraph 5.10 of the PSO Notification.

Airtricity suggest that the timetable for publication of the PSO levy in SI 217 be changed to allow time for SEM modelling to be completed.

Commission's Response

The Commission is concerned with the accuracy with which an SEM market price could be forecast within existing, or even reasonably extended timelines, and used as the basis for the 2007 PSO levy calculation. As discussed in its response in section 4.4 above and raised in ESB CS's submission, *consultation and discussion will be required on the methodology for calculating the SEM market price for calculating the PSO levy. The appropriate contracting of PSO energy in the SEM will also need to be examined, which may have an impact on the levy.*

These issues would render the determination of the 2007 PSO levy in accordance with Option 2 unwieldy.

The Commission's notes the respondent's point in relation the provisions in the Notification and accepts that this is open to interpretation.

4.7 Comments on Option 3

Airtricity considers the non-representative nature of option 3 to rule it out for further consideration. It believes it fails its suggested criteria of representing the best practical approximation to reality and use of the best potentially available market information.

In line with its position on PES tariffs, ESB CS believes that Option 3 is the most appropriate basis for calculating the PSO for 2007. Further work and analysis is required to develop an enduring methodology for subsequent years. ESB CS suggests that it may also be necessary to use this time to seek approval from the DCMNR to get changes to the Notification to reflect the most appropriate market price in the context of the PSO benchmark and its implications for tariffs.

Commission's Response

The Commission believes that Option 3 will not be consistent or reflective of the SEM. As discussed in its responses above, the Commission believes there are a wide range of SEM-related PSO issues to be considered and consulted upon over the coming months and possibly before a 2007 SEM PSO levy can be calculated. The Commission will, in parallel, be considering any necessary legislative changes.

4.8 Comments on Option 4

Airtricity's position on Option 4 is identical to that on Option 3 – see above.

VP&E believes that a modelled SEM price will form a better proxy for a market price for 2007 than the BNE alternative. If a fully developed and validated SEM model is not ready in time VP&E suggests that the best case model available be used and then adjusted subsequently when the full model solution is available. VP&E therefore favours a modified version of Option 4. VP&E does not consider this option to be at variance with paragraph 5.11 of the Notification as the Notification did not anticipate the use of BNE beyond 2005.

Commission's Response

In its previous responses above, the Commission has highlighted the serious market and practical issues in relation to deriving an SEM market price over the next few months to be used as the basis for determining the 2007 PSO levy. It will certainly not be possible to derive an enduring solution for the PSO levy under SEM before a draft decision on the level of the PSO levy is required in early July 2006.

4.9 Comments on a PSO Fuel Variation Mechanism

Airtricity is not in favour of a fuel variation component as it believes the additional complexity is not warranted.

ESB CS also disagrees with the inclusion of a fuel variation clause in the PSO levy on the basis that:

- it would be inconsistent with setting the levy for a calendar year as specified in the Notification;
- PSO contracts would no longer provide a within-year hedge and therefore there would be insufficient hedges available in the market for suppliers to hedge pool price exposure; and
- it would be complex to administer and bill and would lead to customer confusion and impact on cash flow.

VP&E states that it would welcome a fuel price variation clause for the PSO levy if carefully implemented and hedgible.

Commission's Response

The introduction of a fuel variation clause in the PSO would need further examination from a legal and practical perspective before a decision could be made. A fuel variation component would entail setting a variable element in the market price used for the PSO levy. This would be extremely difficult to implement for renewable and peat generation. This may also not be consistent with the PSO Notification. In addition, the PSO levy is charged to all customers on a capacity basis (or a proxy thereof) and therefore applying a variable component would be difficult. The Commission believes that sufficient work will not be undertaken for such a mechanism to be introduced in the next levy period.

5. Commission's Decision

In making a decision with regard to which of the four options to adopt the Commission has fully considered the comments received. The Commission has also assessed each option in relation the criteria listed below and also, on a practical level, the basic workability of each option. Of course, the importance of consistency between the PES tariff and PSO levy approach must be borne in mind. The criteria comprise the:

- impact on the independent sector and on competition;

- impact on the regulated sector;
- impact on customers;
- robustness to SEM start date slippage;
- impact on the SEM work programme; and
- legal issues.

The Commission continues to believe that Option 1, on balance, offers the most appropriate and workable solution.

- Option 1 will allow a more accurate estimate of the SEM price to be reflected in PSO-contracted energy and more accurate out-of-market costs to be reflected in the PSO levy. This will be to the benefit of competition, all market players and ultimately the customer.

- The calculation, at this time, of the appropriate SEM price as envisaged under Options 2 and 4 would yield uncertain results which could greatly distort the market and result in large under- or over-recoveries of costs. Also a wide range of SEM-related PSO issues need to be scoped over the coming months which may impact on the calculation of the PSO levy.

- It is recognised that Option 1 may lead to a change in the tariff. The option is also not conducive to slippage in the SEM programme. However, the Commission believes that these two disadvantages outweigh the risk of sending inaccurate price signals, via the PSO, to the market. This could undermine the proper functioning of the SEM and be contrary to encouraging accurate and efficient pricing signals.

- Option 1 will be subject to the necessary legislative amendments which will be required in advance of the Commission's draft levy notification on the 30th June 2006. The required changes pertain to the definition of the levy period in SI 217 and the timelines for issue of the PSO levy notification. The Commission has contacted the DCMNR in this regard.

- Should the legislative amendments not be made, the Commission will revert to Option 3 – a single-year levy calculated on the basis of a 2007 BNE price. The Commission considers this to be the only viable alternative given that further work is required to calculate the market price underlying the PSO in the SEM and, in particular, the ongoing nature of the SEM modelling workstream.

Option 1 will operate as follows:

(a) There will be two PSO levies in 2007;

(b) The first levy will cover a period of six months up to the SEM go-live date of July 2007. The levy will be based on the BNE and will be determined in line with the dates specified in SI 217 of 2002. The calculation of BNE will also be consulted upon in accordance with standard tariff process timelines.

(c) The levy for the second period will cover the latter six-months of 2007. It is envisaged that the levy will be determined over quarter 4 of 2006 and quarter 1 of 2007. The Commission will determine an appropriate market price for calculating the PSO levy under the SEM in consultation with the industry.

(d) The first six-month levy will not comprise a fuel variation component. The Commission will examine the merits of a PSO levy fuel variation clause for the second 2007 and subsequent levy periods.