Proposed Approach to Setting the PSO benchmark Price in SEM: A Consultation Paper

AIP/SEM/07/240

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1. Introduction

The introduction of the Single Electricity Market in November 2007 will require a change to the methodology that determines the setting of the Public Service Obligation (PSO) benchmark price. As part of the recently published Memorandum of Understanding[1] (MoU) and the SEM Regulation[2] consultation paper the Commission for Energy Regulation and the Northern Ireland Authority for Utility Regulation (jointly "the Regulatory Authorities") committed to reviewing the current process with a view to aligning the processes in both jurisdictions.

Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in electricity sets out the legislative basis for the PSO. The Public Service Obligation is designed to apply to a range of areas. Directive 2003/54/EC states:

> "…..Member States may impose on undertakings operating in the electricity sector, in the general economic interest, public service obligations which may relate to security of supply, regularity, quality and price of supplies and environmental protection, including energy efficiency and climate protection."

The aim of the PSO Levy in Ireland is to ensure that Ireland has reasonable self sufficiency in terms of electricity generation capacity, and to help protect the environment through the use of renewable energy sources. The PSO requires the incumbent to purchase electricity generated from peat and other renewable, sustainable or alternative forms of energy, and the levy mechanism is intended to compensate the incumbent for the additional costs incurred in complying with these obligations. The PSO levy is allocated among final customers on the basis of the maximum import capacity.

In Northern Ireland a PSO levy is charged on all suppliers covering the excess costs of the legacy generation contracts which were signed between NIE Power Procurement and

[1] http://www.allislandproject.org/en/information-documents.aspx?article=a7bd845f-8e20-46d9-9527-66475bcb2541

[2] [2] AIP/SEM/07/16- A Strategy for the Regulation of ESB and NIE in the Single Electricity Market: A Consultation Paper

independently owned generators. This was to ensure that the burden of historic cost was not being forced solely upon an ever decreasing customer base as customers moved away from NIE Supply. The NI PSO is also applied to other costs which should be paid for by all NI customers.

1.1. Consultation Timeline

The Regulatory Authorities welcome the views and comments of interested parties on not only the specific questions raised in this paper, but also more generally on the ideas and approaches that are suggested. It is intended to publish all comments received. In the event that any respondent wishes parts of their submission to remain confidential then these should be submitted as an annex marked “Confidential”. Comments on this paper should be forwarded to Alan O’Kelly and Kenneth Dane, preferably in electronic form, to arrive no later than **12.00 noon** on the **22nd June 2007.**

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2. Background

2.1. Background to PSO (IRL)

The Electricity Regulation Act 1999 sets out the legislative basis for the PSO in IRL. The Act specifies four obligations to which the PSO applies;

- security of supply,
- regularity, quality and price of supplies,
- environmental protection, and
- Use of indigenous energy sources.

The Commission is required under SI 217 of 2002[3] to review the costs associated with the PSO to ensure that they are appropriate. 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 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 Commission has defined a 'Best New Entrant' (BNE) power plant in terms of plant type, output, investment and operating costs. These parameters have been used to quantify monies to be paid by the ESB to independent generators for 'spill' electricity and, conversely, by independent operators to ESB for the provision of 'top-up' electricity.

The amount of the Levy in each year is the excess of the ESB's PSO related purchases over the market price (BNE) for that generation. 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.

As part of the PSO process the Commission forecasts the potential costs for the levy and decides on the benchmark price. As part of the current process the Commission does not

[3] S.I. No. 217/2002 — Electricity Regulation Act 1999 (Public Service Obligations) Order 2002

adjust the benchmark price after the Levy period to take into changes to the assumptions underlying its calculation such as actual fuel costs. However the Commission adjusts the forecast of costs to take account of the actual costs incurred by ESB in meeting its obligations. The difference between the forecast and the actual costs is passed back to customers via a correction factor in PSO for the following year.

2.2. Background to PSO (Northern Ireland)

In Northern Ireland a PSO levy is charged on all customers to pay for the excess costs of the legacy generation contracts which were signed between NIE Power Procurement and independently owned generators. This was to ensure that the burden of historic cost was not being forced solely upon an ever decreasing customer base as customers moved away from NIE Supply. The NI PSO is also applied to other costs which should be paid for by all NI customers.

Currently NIE makes a forecast of its out-of-market costs and revenues and sets the PSO to recover this. The costs apply to both the energy and availability elements of the PPA contacts with the generators. Any over or under recovery is paid back or collected in the following year though a correction mechanism in the PSO schedule of charges.

The PSO is levied on all units of electricity sold. It is intended to cover many of the legacy costs of generation and other costs which for social reasons are spread over the whole customer base. Without a PSO, the costs they reflect would be borne only on those customers who are ineligible or who did not exercise their choice to switch supplier. The costs included in the PSO in Northern Ireland include;

- Excess NFFO Costs;
- Fuel Diversity Costs;
- Land Bank Costs;
- Excess Rathlin Purchase Tariff;
- ROF support costs;
- CBO cost recovery;
- Market opening costs;
- Energy Efficiency programme funding;

- Excess legacy Generation Costs
- Excess cost of LTI3
- Excess Kilroot Cost

The PSO benchmark price is calculated by taking an annual forward looking view of what the revenue to the PSO stations will be. This involves both energy and an availability element.

Each year the Power Procurement Business assesses the likely future costs and revenues which it will receive in regard to the stations contracted to it taking account outage plans and fuel cost predictions, the PPB makes an estimate of the out-of-market costs associated with the legacy plant which it is contracted to. The level of these costs above the forecast BST is passed through as a PSO. In the future a measure of the pool SMP will be required to benchmark these costs against.

2.3. PSO methodology in the SEM

At present the market structure in both jurisdictions is a bilateral contracts market with a top up and spill balancing mechanism. There is no price that could be considered a true market price that is one set by the supply and demand in the market.

In absence of this, each Regulatory Authority has developed a proxy for this price (in IRL this is known as the Best New Entrant price). In the SEM however, the market price will comprise separate energy (pool) and capacity prices determined by market forces. These prices can vary in each every half hour in the year. The energy price is determined by the short run cost of the generation unit it takes to meet the total demand in the particular half hour. The capacity price is derived from the value of capacity and the availability of generators in the market.

3. *Key Considerations for the Determination of the PSO Benchmark Price*

3.1. Guiding principles

The Regulatory Authorities have developed a set of principles to assist them in determining the most appropriate options for determining the benchmark price in the SEM. These principles include;

- ***Transparent:*** *The price must be set in a manner that is transparent and open*
- ***Equality of treatment:*** *The preferred methodology should not discriminate unfairly between different generators or suppliers.*
- ***Implementation timeline:*** *The chosen methodology must be implemented by July 2007*

These principles provide us with a framework for assessing the chosen approach in the SEM.

3.2. Setting a market Price

As part of the legislation underpinning the PSO[4] in Ireland, the Commission is obliged to use a market based price for the determination of the PSO benchmark price. The Notification to the European Commission in relation to the PSO sets out that the benchmark price will be a time-weighted market price determined by the CER in an open consultative process. While the Northern Ireland legislation is not as prescriptive, both Regulatory Authorities have determined that using a market based price (that is a price that reflects the conditions in the pool) is the most appropriate option for setting a benchmark PSO price.

However there are still a number of options that can be considered when determining what a market price (and the PSO benchmark) should look like. The following sections set out the options that can be pursued and the Regulatory Authorities proposed approach. Sections

[4] S.I. No. 217/2002 — Electricity Regulation Act 1999 (Public Service Obligations) Order 2002

3.2.1 to 3.2.3 deal with the calculation of the energy component of the market price while Section 3.2.4 concentrates on the options for calculating the capacity value.

3.2.1. Summary of Energy Options

The Regulatory Authorities have considered a range of options for setting the energy component of the PSO bench mark price. The options put forward include;

- ***Modelled Pool price***: This is a price based on a modelled pool price forecast developed for the purpose of setting the PSO
- ***Directed contacts price:*** This is a price based on the current directed contracts price setting process.
- ***Non-directed contracts price:*** This would involve setting the price on the average price of the forwards contact market.
- ***Continuation of existing arrangements:*** This would involve continuation the current arrangements in both jurisdiction:

    - ***BNE:*** This option would involve the continuation of the current arrangements in IRL.
    - ***PPB assessment of 'Out-of-market' costs:*** This option would be a continuation of the current arrangement in NI.

The next section sets out the Regulatory Authorities preferred approach as well as the consideration given to the other options.

3.2.2. Proposed approach to setting energy component

The Regulatory Authorities propose to base the methodology for determining the PSO benchmark price on the directed contracts pricing mechanism.

The directed contracts are made up of up to twelve products (baseload, mid- merit, and peaking contracts set out into quarterly products.) Each of these products will be priced separately. As part of the directed contracts process the Regulatory Authorities, in mid-May, published base load, mid merit and peaking prices for the different products. On June 1st the directed contracts allocation process commenced and contracts will be allocated over a period of 21 business days.

There are a number of reasons to favour this approach. Firstly, it's transparent. The directed contracts pricing methodology has been set out in detail in last number of months. The assumptions in the model have been validated and reviewed by both the Regulatory Authorities and industry. Secondly, the proposed approach can easily be implemented within the required timetables. Third, it is important to adopt a consistent view of future market prices in the various SEM related areas of work.

3.2.3. Other Options considered

The Regulatory Authorities considered using a forecast of the pool price. This price would be based on special runs of the PLEXOS model with the specific purpose of setting the PSO benchmark price. Basing the benchmark price on the pool price (either actual or forecast) would have the benefit of being transparent for all suppliers', customers, generators and new entrants. It can be set on time to meet both SEM and legislative requirements faced by the Regulatory Authorities. However, the Regulatory Authorities see little merit in re-running the PLEXOS model to obtain a pool price that has already been developed as part of the directed contracts approach.

The Regulatory Authorities also considered setting the benchmark price on an outturn of the non-directed contracts price. However this option was discounted for a number of reasons. First, these contracts are based not just on participants' view of pool price but also adjusted for their expected risk premium. It is not appropriate to take this into account when determining the PSO. Further, setting the PSO benchmark based on an outturn of non directed contracts prices would mean that final price would not be available in time to publish for consultation on July 1st 2007 which is required by a legislative deadline in IRL.

The last option involves the continuation of the current arrangements. This would involve the Commission basing the price on the Best New Entrant price and the Authority approving a PSO methodology based on PPB's assessment of future costs and revenues. The advantages of these options are that they are a known process and could be implemented in time to meet SEM. However both Regulatory Authorities are of the view that this methodology does not directly relate to any price seen by a generator or supplier in the SEM pool. Further the PSO notification states that a market price must be used. Therefore the Regulatory Authorities have discounted this option. In addition, in the ROI market, a best new entrant price can only be used in the absence of a market price being available.

3.2.4. Proposed approach to setting capacity component

As noted above, the market price has two components; energy and capacity. The Regulatory Authorities have considered proposals for the addition of a capacity adder to the PSO energy benchmark price. The exclusion of the capacity value would have the net effect of inflating the PSO charge.

The Regulatory Authorities propose to add a flat €/MWh £/MWh to the energy component of the benchmark price. It is proposed that, in the period Jan 2008 to September 2008, the forecast capacity pot is divided by the total generation output. This €/MWh £/MWh will not be profiled across the year. The Regulatory Authorities will determine the level of capacity (the capacity pot) to be paid to the market in the coming weeks.

4. Implementation Considerations

4.1. Ex-post vs Ex-ante

If the PSO benchmark price is based on the directed contracts price this raises a number of questions. The key consideration is whether or not the PSO benchmark price should be set on an ex-ante or on an ex-post basis.

Setting the PSO benchmark price on an ex-ante basis involves setting the PSO benchmark prices on the basis of directed contract prices. The tools are already in place to allow the Regulatory Authorities proceed in this manner. There would be no need for an ex-post adjustment to the forecast once the pool price is known. This approach has the benefit of providing certainty to the market as to what the benchmark price would be. It would also allow both ESB and NIE to offer hedge contracts based on their own PSO backed contracts. Adopting this approach would require the Regulatory Authorities to ensure that neither ESB nor NIE financially benefit from such an arrangement. Any benefit accruing to the regulated entities as a consequence of the sale of such contracts at a premium to the PSO benchmark price could be offset against the overall cost of the PSO to customers in subsequent years.

Setting the PSO bench mark price ex-post means that there will be an adjustment to the benchmark price at the end of the year. This adjustment would be based on the actual known pool price at the end of the year. The benefit of this approach is that it provides absolute clarity as to the benchmark price and ensures that no party benefits from the arrangement. However this approach reduces certainty in the PSO, will lead to greater adjustment factors and undermine the viability of the hedges offered that are based on PSO contracts.

Therefore the Regulatory Authorities are proposing to set the PSO benchmark price on an ex-ante basis.

4.2. Single benchmark Price

There remains the question as to whether or not it is appropriate to have one PSO benchmark price. At present the PSO benchmark price applies to a range of different conditions and contacts ranging from the out of market costs associated with thermal generation to the out of market costs associated with wind.

The Regulatory Authorities intend to set the benchmark price using the directed contracts methodology outlined above in section 3.2.2. However because of the different mixes of generation included in the PSO in both jurisdictions it is not appropriate to set the exact same single price in both jurisdictions.

In Northern Ireland the PPB will make an assessment of the mix of directed contracts products (baseload, mid-merit and peaking contracts) which best align with the actual generation portfolio to which it is contracted and use these directed contract prices.

In Ireland the load factors of plant in the PSO portfolio is less diverse and the Regulatory Authorities are considering using a single benchmark price.

The rationale for this approach is that it reduces the potential for estimation errors leading to large swings in PSO under or over-recovery from year to year. However, this approach, where the same basic methodology is used in both jurisdictions should allow transparency all suppliers and generators as to how the PSO is established. PPB will be required to furnish an explanation of how the composite benchmark was derived so that all suppliers and generators have a degree of certainty to the level of the PSO when establishing their own contracts.

4.3. Correction mechanism

The establishment of a PSO to apply to tariffs in both jurisdictions necessitates the use of a forecast of the bench-mark pool price and a forecast of costs associated with the PSO generation. There will inevitable be a divergence between actual costs and revenues at the end of the year.

The RAs intend to apply correction mechanisms so that the setting of a PSO does not imply additional risk to the relevant companies.

4.4. December/November PSO

On November 1st the SEM will come into operation. In IRL the PSO still run for two months under the old methodology. The Regulatory Authorities have considered changing the legislation and methodology for the last two months of the year but have determined that this will not be possible within the necessary timeframes. In Northern Ireland tariffs will be reset from 1st November. It is intended that the new PSO will apply from this date too.

5. Conclusion

The Regulatory Authorities understand the importance of setting the PSO benchmark price in a timely manner. This consultation will be followed by the publication in IRL of the level of the benchmark price on July 1st 2007. Northern Ireland will publish in due course.