



Commission for Energy Regulation

An Coimisiún um Rialáil Fuinnimh

Review of Market Prices

A Proposed Decision by the Commission for Energy Regulation

**CER/02/84
23 July 2002**

Introduction

The following document contains the details of a proposed Decision on the alteration of market pricing (top up and spill). The Commission for Energy Regulation will make the Decision under Regulation 3(4) of SI No. 49 of 2000 – Electricity Regulation Act, 1999 (Trading Arrangements in Electricity) Regulations, 2000.

Interested parties are invited to comment on the issues raised in this paper by close of business on Tuesday 30th July 2002. Submissions should be forwarded to:

Cliona McNally
Commission for Energy Regulation
Plaza House
Belgard Road
Tallaght
Dublin 24

[Mailto:cmcnally@cer.ie](mailto:cmcnally@cer.ie)

Tel: + 353 1 4000 800
Fax: + 353 1 4000 850

Background

The Minister for Public Enterprise issued a Policy Direction in July 1999 setting out the high level principles for the electricity trading system for the period to February 18th 2005. The Direction required the Commission to review the market pricing arrangements in early 2002 and the overall trading arrangements in 2004. This paper relates to the review of market prices.

According to the policy direction, the Commission may change the pricing arrangements if they are found to be inadequate when compared with the stated objective for the trading arrangements. The objective of the trading arrangements is the promotion of “efficient competition amongst licensed generators and suppliers within the market segment being opened to competition.”

This review was initiated in September 2001, largely in response to concerns about market conditions. The Commission began by inviting interested parties to submit comments on the current pricing arrangements. Comments and submissions received seemed to suggest that these arrangements might be inadequate when compared with the objective of the trading arrangements, and should therefore be modified.

Subsequently, on 11th January last the Commission issued a consultation paper (Ref.: CER/02/07) reviewing the present pricing arrangements. The paper examined the effectiveness of the current imbalance pricing arrangements in meeting the overall objective of the Minister’s policy direction and set out a number of options for change. Comments were invited on the ideas included in the paper.

Commission’s Consultation Paper

In the consultation paper, the Commission considered how the effect of a change in the pricing arrangements might impact on promoting efficient competition. Specifically, the Commission considered the impact of market pricing on:

- ?? The level of entry by generators and suppliers into the market;
- ?? The extent of trading between suppliers and generators established in the market; and
- ?? The ability of the market to provide a sustainable level of competitive prices to customers.

The present market was intended to and is structured to operate as a bilateral contracts market in conjunction with an imbalances market to deal with mismatches between contracted and actual generation and/or contracted supply and actual load. Generators and suppliers are meant to earn the bulk of their revenue in the bilateral contracts market. Suppliers develop a customer base and back up their sales with generator contracts. ESB Power Generation (PG) purchase any “excess” generation at a spill price

that is related to, in the first instance, PG's avoidable fuel cost and then the best new entrants avoidable fuel price. PG also sells at limited amount of power at top up prices that is related to the average annual cost of the best new entrant. There is an assumption that the bilateral contracts market is sufficiently liquid to allow efficient licensed generators contract with licensed suppliers and to earn a reasonable return on their investments.

However, comments from existing and potential market participants suggested that the contracts market is difficult to enter and compete in effectively. The eligible market may be able to support one or two new entrants as these generators (through their supplier) can sell to a relatively small number of large price sensitive customers. It appears to become increasingly difficult for further generators seeking to sell the output from their plant. One reason is the limited number of eligible customers in the market. When the market opening there were about 380 eligible customers and this number rose to about 1,600 in February 2002. Generators have commented that another option would be to contract with ESB Power Electricity Supplier (PES) as PES currently has a large customer base. However, they are precluded from selling to PES. Accordingly, new entrant generators face a significant level of uncertainty regarding their future electricity off take and are thus discouraged from entering the market place.

On the supply side, there were concerns about the dominance of ESB and the difficulty (perceived or otherwise) of encouraging customers to switch from PES to other suppliers. Recent developments such as ESB's Virtual Independent Power Producer (VIPP) scheme may have mitigated some of these concerns. Under this scheme, suppliers can buy output from PG at prices that represent a discount on PES's tariff prices. The flexibility of VIPP II allowed suppliers contract for these purchases prior to having a customer base. Suppliers could then look for customers with the assurance that they had generator contracts to support these sales.

Given these types of conditions in the generation and supply markets it was suggested that generators would look to the imbalance market to provide sales opportunities to supplement sales to licensed suppliers or to top up with mid-merit and peaking generation. Thus there is a view that the imbalance market should be used to make up for the perceived shortcomings of the bilateral contracts market – a use that was not originally anticipated by the Minister's policy direction. It was felt that generators would be provided with some revenue assurance if they could sell output at the imbalance market spill price

A number of concerns were expressed about spill prices and how they are calculated. Spill prices are viewed as being volatile and insufficiently reliable or transparent to provide financial security to new generators. If generators need to have some assurance about the level of future spill prices if they are to rely (in part) on these prices when making the decision about whether or not to invest in the market. There is insufficient information in the market to enable parties (a) forecast the likely level of spill prices into the future and (b) the reasonableness of spill prices on any particular day. Aside from this, spill prices are not considered as reflective of the value of capacity in the market. Furthermore they are determined by the dominant generator in the market and are unknown at the time of trading.

The effectiveness of the current pricing arrangements also needs to be considered in the context of delivering a sustainable and competitively priced supply to customers. Respondents did not explicitly deal with this topic. However, the Commission is of the view that an efficiently competitive market in generation and supply is a necessary requirement for the delivery of sustainable and competitively priced electricity to customers. Without sufficient (and efficient) market entry there cannot be efficient competition that will deliver the stated benefits to customers.

Much of the assessment of the effectiveness of market arrangements is inevitably subjective. However, there are a number of pointers that should be considered. It appears that the initial interest in the market has diminished. Some of the generators that have established are concerned about imbalance prices. Parties that are considering investing in the generation market are concerned about their future revenue streams. Some suggest that investment in other electricity markets is preferred due to factors such as market size (impacting on sales opportunities) or market conditions (e.g. position of ESB in the electricity market).

Commission's Discussion Paper

While the Commission was considering the different responses made to the consultation paper, an industry meeting was held in the Commission's offices on 26th February 2002. This was held to provide the Commission with the opportunity to further discuss these issues with the industry prior to making its decision about the current pricing arrangements. The Commission wanted to focus discussion on two main areas. The first related to possible changes to the top up and spill pricing mechanisms (if the Commission was to decide that the present pricing arrangements do not meet the objective of the policy direction). At that time, the Commission was considering the option of one market price for both top up and spill. This price could include both an energy and capacity element and be set, to the greatest extent possible, by market forces. Another area the Commission wanted to focus on was the issue of market information and the calculation of imbalance market prices.

Another meeting was held on 13th March 2002 where a single price was discussed further. On 20th March 2002 the Commission published a discussion paper on Market Pricing (Ref.: CER/02/32) setting out an approach where the single price could be calculated with reference to a Marginal Energy Price plus a capacity component, calculated as Value of Lost Load (VOLL) times Loss of Load Probability (LOLP), where VOLL = €7,550. The Commission was of the view that this would (a) provide existing and potential market participants with a capacity value signal and (b) reduce some of the complexity in pricing arrangements as illustrated by the number of different prices in the market.

In addition the Commission held a series of bilateral meetings with market participants. In general there was support for a single market price (although not unanimous) but there was some concern about the effects on a supplier of a market price that was not known in advance.

Prior to the bilateral meetings, the Commission considered, in more detail, the effects of this approach to market pricing over time and the impact on prices of an unforeseen unavailability of generation plant. A number of issues became clear and these are summarised below.

1. Currently there are a number of different prices in the market. The Commission is minded to ensure that the relativity between these prices is conducive to a properly functioning market. The PG sales price to PES is determined with reference to PG's allowable costs. The VIPP price is estimated as a discount on the PG price. Then there is the top up price that is calculated to match the estimated annual average cost of a best new entrant (assumed to be a combined cycle gas turbine plant). Finally there is the spill price that is derived from generator bids into the market. All but the last of these prices are **not** calculated with reference to system conditions on the day. The suggested market price would be calculated with reference to system conditions as it is based on system marginal cost plus a capacity element derived from a loss of load probability in each trading period.

Thus there is a strong possibility that, depending upon what is happening in the market at a particular point in time, the single market price can fall below the PG, VIPP and top up prices. The calculation of the single market price is very sensitive to the loss of load probability (LOLP). If LOLP is very low, the capacity value of the market price is also very low. Currently two CCGT plant are commissioning and are expected to be in full commercial operation by the end of the year. As a direct consequence the LOLP values, at that time, will fall away. This will have the effect of reducing the capacity component of the market price and will probably lead to a market price that is below the PG, VIPP and top up prices.

One consequence is that generators entering the market will face spill prices that are not significantly higher than they are today (at least until the LOLP values increase again). A second consequence is that suppliers have the opportunity to sell to customers at a relatively low price and this can undermine (a) the VIPP scheme and (b) the sales opportunities for efficient generators operating in the market.

2. This approach to pricing does not provide an adequate investment signal to new generators considering market entry. As noted above, a single market price calculated on this basis will fall with the market entry of two new plants at a time when additional capacity is required on the system. This may be a timing issue, as the capacity value should increase prior to the entry of another generator. However, this pricing mechanism does not provide a sufficiently advanced investment signal to generators with a construction lead-time of two to three years.
3. This approach to pricing can be very volatile. For example the forced outage of a particular unit (such as Moneypoint) can have a significant effect on the market price. The loss of 300 MW has a significantly increases the LOLP and hence the market price. The impact would not be as great in a larger market (such as England and

Wales) with more generating units bidding in for dispatch. This volatility was of concern to some suppliers.

4. During the transitional period, PG may face potentially considerable financial exposure from this approach to the extent that the single market price falls below the PG sales price to PES. This loss would occur where suppliers buy at this market price for its customers. These customers would be supplied at a lower price than the franchise market.

It was also pointed out during the consultation that this methodology for pricing capacity was no longer used in other markets for the following reasons. It was considered that the VOLL by LOLP signal was a short-term measure and would not provide the long-term signal necessary to attract additional generation. Suppliers, in particular, expressed concern that it introduced additional uncertainty for them, increased their exposure and in certain circumstances had the potential to eliminate sales margins entirely.

Reasons for Commission's Decision

The Commission has carefully considered the question of whether or not current pricing arrangements meet the main objective of the trading arrangements – the efficient competition amongst licensed generators and suppliers within the market segment being opened to competition. The Commission is of the view that the initial interest in the market by new generators and suppliers has diminished in part due to the overall structure of the market but also due to the operation of top up and spill. It would appear that potential new generators face a significant level of risk in securing a revenue stream in the bilateral contract market. This risk is not reduced when the new entrant takes the pricing regime into consideration.

Given that there has been limited market entry, it is reasonable to conclude that there has not been efficient competition between generators and suppliers established in the market. In this case, it is also reasonable to conclude that customers are not receiving the full benefits of a sustainable and competitively priced supply of electricity. Efficient competition would suggest that there are a reasonable number of generators in the market competing (through suppliers) to sell electricity to eligible customers. At present there are two new Combined Cycle Gas Turbine plants about to commence operation in the eligible market. The combined output of these plants is less than the total size of that market and the balance of output is being provided by ESB generation (either through the operation of a Virtual IPP scheme or sales by ESB PES to eligible customers).

Taking all these factors into account, the Commission has decided to amend the current market pricing arrangements as part of an overall plan to provide an environment that will encourage market entry by efficient generators and suppliers. In this manner, customers will be provided with a sustainable supply of reasonably priced electricity. The Commission is aware that changing the calculation of market prices will not, in itself, secure market entry. However it will provide a signal to interested parties of the Commission's intention.

It is worth noting that the Commission has decided to instigate the review of the overall trading arrangements earlier than anticipated in the Minister's policy direction. This second review is underway and the Commission aims to set out the high level principles of the post February 2005 market early in 2003. This will provide interested parties (existing and potential) with a clear signal of how the market will develop and should reduce the level of uncertainty faced by parties considering entry into the Irish electricity market. It will also allow for the timely development and implementation of any necessary systems required to underpin the post February 2005 market.

Commission's Proposed Decision on Market Pricing

The Commission proposes that the current top up and spill arrangements continue to apply to "green" and Combined Heat and Power market participants to facilitate balancing. The revised top up and spill rules will apply to all other generators and suppliers operating in the competitive market.

Spill Prices

The Commission is of the view that security of supply is a very important aspect of the Irish electricity market particularly as this market, unlike most others electricity markets, is both relatively small in size and has a low level of interconnection with other markets. At times of new capacity need, the Irish electricity market does not have the opportunity to rely (to any significant degree) on neighbouring markets for support. Accordingly, the Commission aims to provide the market with a signal to encourage long term investment in the generation market. The Commission is also mindful of the fact that, in the shorter-term, it is important to encourage generation that has established in the market to be available to meet the system demands. In this context, the Commission proposes to adopt the following approach to setting spill prices.

1. *The spill price shall include a capacity element.*

This component shall be set such that the forecast spill price (including the capacity element) will not be greater than the best new entrant price (i.e. the average top up price).

Generators in the competitive market should be able to cover their fuel costs and should be guaranteed some contribution towards their fixed costs. Thus generators should earn a marginal energy price, based on current spill prices, plus an additional capacity payment of some kind. At the same time, the Commission does not want to undermine the development of a bilateral contracts market and if generators are fully compensated for capacity there is no incentive to enter into such contracts.

2. *The capacity element of the spill price shall be calculated ex ante.*

This will provide some certainty to generators and suppliers operating in the market.

3. *The value of capacity in the spill price shall be equivalent to the Capacity Margin payment.*

The Capacity Margin payment is a mechanism to encourage generators, with spare capacity, make this capacity available to the market. This capacity is important to the market, as it is required to replace other more efficient generators that unexpectedly become unavailable. Electricity markets require this plant margin to maintain a secure supply of electricity to customers. For such plant to remain viable (given that it will not run very often) it either needs to earn a very high price at the times it does run, or receive an additional payment in recognition of the Capacity Margin service it provides. In Ireland we provide the latter. The Transmission System Operator operates the Capacity Margin scheme and at present pays a generator €6.15/MW per hour that a generator is available but not dispatched but only where the generator provides this service on a day ahead basis for a continuous 24 hour period.

4. *The capacity element of the spill price shall be a flat price across all days and seasons, subject to conditions set out in paragraph 8 below.*

The €6.15/MWh is paid to all output provided to the system that has not been sold on to independent suppliers. The Commission considered profiling this payment by time of day. However, the view was taken that a prices profiled by time of day related more to short term system conditions (relating to generator availability in a particular hour or day) and that a flat payment would be more appropriate longer-term capacity signal.

5. *There shall be a 350 MW limit to the amount of spill energy that receives a capacity payment.*

While providing the market with an investment signal, the Commission wishes to limit the potential cost of this arrangement. Therefore, the amount of energy spilled at this price is limited to 25% (or 350MW) of eligible customer demand. This is consistent with the current volume of spill that attracts payments relating to ESB's avoidable fuel costs.

6. *Beyond this limit the spill price shall be calculated as at present.*

This avoidable fuel cost will be calculated in the same manner, as is currently set out in the Trading and Settlement Code (the Code). All other limits set out in the Code will no longer apply. In other words, the current rule that the spill price changes to the best new entrant fuel costs after 350 MWs of spilled output will be removed.

7. *The minimum spill price shall be set at the best new entrant fuel price.*

Respondents to the Commission's papers have expressed concern that the calculated ESB avoidable fuel cost (in some trading periods) falls below the best new entrant's fuel costs. The Commission is currently reviewing spill data (a) to determine the reasons why this is occurring and (b) to decide whether or not corrective action is required. However, it is clear that the Minister's policy direction, in settling out

the calculation of spill prices, did not envisage that ESB's avoidable fuel price would fall below the best new entrant's fuel price. As an immediate step, the Commission proposes that the calculated spill price cannot fall below the best new entrant fuel price.

8. *The capacity element of the spill price shall be adjusted in circumstances where the spill price exceeds the top up price.*

At present, when the spill price exceeds the ex ante top-up price (and secondary top up price), the top-up price (and secondary top up price) rises to match the spill price. The Commission proposes to adopt a similar approach under the new pricing regime. If the spill price (marginal energy price plus capacity) exceeds the top up price the capacity element of the spill price will reduce to equal the difference between the energy only spill price and the top up price. At the same time, the capacity element of the spill price cannot fall below a zero value. Where the energy only spill price is greater than the top up price then the top up price will rise to meet the spill price. This means the capacity component of the new spill price may at times be less than €6.15/MWh – probably at times during the night and at weekends.

9. *The implementation date for the above spill-pricing regime shall be 1st August 2002.*

Top Up and Secondary Top Up Prices

1. *Top up price shall continue to be calculated and applied to generators and suppliers as currently set out in the Code.*

The Commission proposes to continue with the current calculation of the top up price; i.e. averaging over the year to the estimated costs of a best new entrant. In addition, suppliers and generators should continue to have their current entitlements to top up priced purchases. This will enable green and CHP market participants continue to avail of top up and spill priced electricity to allow them balance out their sales and purchases over time. In addition, generators will continue to have the opportunity to use top up priced supplies to back up their sales contracts when on outage. Also, suppliers will continue to have access to top up priced supplies to manage their customer contracts.

2. *The secondary top up price shall be set with reference to the ESB PG ESB PES BPA price which averages about €51/MWh in 2002.*

The Commission reviewed the hierarchy of prices in the market when considering the appropriate level of the secondary top up price. In other words, the Commission reviewed the PG sales price to PES, the VIPP price, the top up prices and spill prices.

Another issue is the place of the secondary top up price in this price hierarchy. In addressing this matter the Commission considered the

efficient operation of the market and the encouragement of all market participants to operate in a manner that delivers a sustainable and competitively priced supply to customers (both franchise and eligible customers). If the secondary top up price were to be set below the VIPP, top up or spill prices, it would undermine the market. Suppliers would have the opportunity to buy electricity at prices that are much the same as or below the costs of a best new entrant.

This would not encourage generator market entry and thus limit benefits that can be passed on to customers. In addition, if the secondary top up price were below the PG price it would mean that PG is selling output at below its allowable cost. Given the current market structure, this would probably have an adverse impact on PES's tariff prices to its customers. Thus the secondary top up price should be pitched at a level that is related to the PG sales price to PES.

The Commission proposes that the secondary top up price is set to match PG's sales price to PES based on PG's allowable costs reviewed by the Commission. At the end of 2001 the Commission approved a PG sales price to PES of about €51/MWh based on a forecast sales figure of 14,355 MWh and allowable revenue of some €735 million. The Commission is currently reviewing PG's cost submission for 2003 and will make its determination in the near future. These prices will then form the basis of 2003 secondary top up prices.

3. *Secondary top up prices shall be profiled over time in line with the price profile underlying PG's sales arrangements with PES.*

The average secondary top up price should be profiled by time of day to reflect the fact that electricity is more expensive during the day than at night and at peak hours compared to off-peak hours. The Commission intends to include a time of day price profile in PG's sales arrangement with PES.

Current secondary top up prices are expressed as multiples of the top up price. The Commission proposes to adopt a new set of multipliers to apply to top up prices to give a new secondary in line with the price profile underlying PG's sales arrangements with PES.

4. *The implementation date for the above secondary top up pricing regime shall be 1st September 2002.*

The Commission proposes an implementation date for the amended secondary top up pricing regime that is later than that for spill pricing, as it is unlikely that the detail of the secondary top up price will be in place by 1 August 2002.

Information Provision

The Commission proposes to publish a short report on spill price calculations by the end of July. The Commission will also publish a proposed decision to make available the necessary information to enable interested parties to forecast spill prices in the longer term.