



Single Electricity Market Committee

A Review of the Effectiveness of PCAP & PFLOOR

A Response and Decision Paper

SEM-09-094

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Table of Contents

1	Introduction	2
2	Comments on the Consultation Paper and the Regulatory Authorities' Response.....	4
2.1	PCAP	4
2.1.1	Initial Proposals	4
2.1.2	Respondents' Comments	4
2.1.3	Response by the Regulatory Authorities	5
2.1.4	Final Proposal	6
2.2	PFLOOR.....	7
2.2.1	Initial Proposals	7
2.2.2	Respondents' Comments	7
2.2.3	Response by the Regulatory Authorities	8
2.2.4	Final Proposal	8
3	Conclusions	9

1 Introduction

The Regulatory Authorities (RAs) are required under the Trading and Settlement Code (TSC) to determine three administered prices. These are:

- the value of lost load (VOLL);
- the market price cap (PCAP); and
- the market price floor (PFLOOR).

Following consultation last year, the Regulatory Authorities decided for the period from 1st January 2009 to 31st December 2009 that:¹

- VOLL would be set to €10,390/MWh;
- PCAP would be set to €1,000/MWh;
- PFLOOR would be set to minus €100/MWh; and that
- these values would remain valid for the period to end-2009.

The Regulatory Authorities had previously² decided that:

- in the case of VOLL, its value in subsequent calendar years would be determined by taking its value in the preceding year and up-rating it by applying the weighted average of the year-on-year increases in the Irish Harmonised Index of Consumer Prices (HICP) (using a weight of two-thirds) and the UK HICP (using a weight of one third) in the July of the preceding year by comparison with that a year earlier;
- in the case of PCAP and PFLOOR, the effectiveness of these values would be looked at in the second half of 2008 and re-set if necessary.

The calculation of VOLL for 2010 using the formula decided upon in 2007 will be done separately, to meet the requirement in the Trading and Settlement Code to publish a value for VOLL for 2010 four months before the start of the year.

On the 17th June 2009, the Regulatory Authorities (RAs) published a Consultation Paper (AIP-SEM-08-071) which reviewed the effectiveness of PCAP and PFLOOR, as required by last year's decision.

The Consultation Paper proposed:

- to leave PCAP at €1,000/MWh; and
- to leave PFLOOR at minus €100/MWh.

¹ See AIP-SEM-08-071 and SEM-08-167

² See AIP-SEM-07-484

The RAs received comments from four interested parties on the Consultation Paper. The respondents were:

- Endesa Ireland
- ESB Power Generation (ESBPG)
- Viridian Power & Energy (VPE)
- NIE Energy Power Procurement Business (PPB)

The following sections summarise the comments from the respondents, dealing separately with PCAP and PFLOOR in turn. A response by the RAs is provided in each case and each section concludes with the SEM Committee's³ final decision.

The SEM Committee's final decision is summarised in a concluding section.

³ The SEM Committee is established in Ireland and Northern Ireland by virtue of section 8A of the Electricity Regulation Act 1999 as inserted by section 4 of the Electricity Regulation (Amendment) Act 2007, and Article 6 (1) of the Electricity (Single Wholesale Market) (Northern Ireland) Order 2007 respectively. The SEM Committee is a Committee of both CER and NIAUR (together the Regulatory Authorities) that, on behalf of the Regulatory Authorities, takes any decision as to the exercise of a relevant function of CER or NIAUR in relation to a SEM matter.

2 Comments on the Consultation Paper and the Regulatory Authorities' Response

The comments of respondents to the Consultation Paper are summarised below, beginning with comments made on the RAs' proposal that PCAP remains at €1,000/MWh.

2.1 PCAP

2.1.1 Initial Proposals

In the Consultation Paper the RAs noted that SMP has not been set at PCAP thus far. The fact that PCAP was set at a level sufficiently in excess of the SRMC (short run marginal cost) of the most expensive unit on the system so as to allow prices to be set as intended by the MSP software without constraint suggests that PCAP was effective in achieving its objectives.

The SEM Committee thus proposed to leave PCAP unchanged at €1,000/MWh for 2010.

2.1.2 Respondents' Comments

Endesa Ireland agree with the RAs proposal to maintain the current PCAP value and consider that the RAs should continue to monitor fuel and carbon prices so as to ensure that PCAP does not undermine the fundamental market principle that a generator should not be required to generate when the market price is below SRMC. Endesa further assert that though the RAs state that PCAP should be set such that 'no generator should be required to generate at a loss while ensuring that prices do not go to excessive levels' they fail to cater for the full recovery of capital investment costs which are not taken into account by the capacity payments mechanism. Endesa stress that this amounts to revenue inadequacy and could deter investment in mid merit and peaking plant.

ESBPG and **PPB** both support the SEM Committee view that the same values that were used in 2008 and 2009 for Price Cap should be used in the year beginning 1st January 2010

VPE make that point that they are not convinced that price caps 'are necessarily welfare improving, particularly in the SEM' and call for 'a wider debate and review of what PCAP is trying to achieve', noting ongoing academic debate on the costs and benefits of a price cap. VPE further argue that a generator should not be required to generate when the market price is below its SRMC and call for further analysis on the costs and benefits of linking PCAP to fuel prices. In addition to their main response to the consultation, VPE have raised the issue of currency fluctuations with regard to the setting of PCAP and have suggested that the RAs should take this into account when setting the PCAP value.

2.1.3 Response by the Regulatory Authorities

In response to these comments, the RAs note that:

- most respondents agree that PCAP should remain unchanged at €1,000/MWh for 2009.
- In relation to Endesa's point on the revenue inadequacy of the capacity payments mechanism, the RAs do not regard annual determination of the Price Cap as the appropriate place to consider the recovery (or lack thereof) of capital investment costs. In view of the fact that the recovery of capital investment costs through the SMP is subject to the requirement on generators to bid at SRMC, the RAs do not see the relevance of this issue to value of PCAP. As stated in the consultation, the RAs shall continue to set the Price Cap so as to allow for variations in SRMC during the year to be reflected in SMP without constraint whilst ensuring that no generator would be expected to generate at a loss if its SRMC was higher than PCAP⁴. The RAs suggest that any comments on capacity payments are made through the Medium Term Capacity Payments Review being undertaken next year.
- As previously stated, the RAs continue to see merit in a PCAP for the SEM so as to guard against the MSP software driving prices to PCAP at times when all load is actually being served and until there is adequate liquidity in the contract market to enable participants to manage risk effectively.
- As VPE note in their response, the pros and cons of price caps are the subject of ongoing academic debate. The RAs note that several international examples of electricity markets with price caps and continue to see merit in maintaining the present level for PCAP for the following year⁵.
- As explained in the response to last year's consultation on the value of PCAP, a variable PCAP changing daily with day ahead distillate and carbon prices would involve the use of significant resources for the Market Operator. The RAs remain of the view that it is far from clear whether the benefits to market and to electricity consumers of a daily PCAP as outlined above would be significant enough to justify such costs by the Market Operator (and ultimately the market). The RAs reiterate that they are not aware of price caps being set as a function of daily fuel prices in any other electricity market. Furthermore, a variable PCAP changing daily would be inconsistent with the TSC which provides that the RAs shall determine the PCAP from time to time, and the Market Operator publish these within 5 days. Such a PCAP would require a modification to the TSC, which any person (believing that such a modification would better facilitate the TSC Objectives) is entitled to bring to the Modifications Committee for consideration.

⁴ That is, for reasons other than an excessive generation event.

⁵ For example, 'most organised electricity markets in the U.S. have price caps in the region of €1000 MWh and these are rarely, if ever, binding' – Joskow, P. (2007) '*Competitive Electricity Markets and Investment in New Generation Capacity*'.

- With regard to the interaction between currency fluctuations and the market price cap and in view of the fact that there is both a sterling and euro price cap within SEMO's systems⁶, the RAs consider it prudent for the sterling price cap for 2010 to be set by applying the annual capacity exchange rate for 2010 to the euro Price Cap for 2010.

The RAs will continue to monitor fuel and carbon prices to ensure that they do not reach levels that in combination with a PCAP set at €1,000/MWh threaten to undermine the fundamental market principle that a generator should not be scheduled to generate when the market price is below the its SRMC.

2.1.4 Final Proposal

Having considered the responses on the review of the effectiveness of PCAP and PFLOOR in the SEM, the SEM Committee has decided that:

- PCAP should remain unchanged at €1,000/MWh for 2010;
- The sterling PCAP for 2010 should be updated and set according to the Annual Capacity Exchange Rate for 2010
- a review of its effectiveness will be carried out in the second half of 2010 in order to set the value of PCAP for 2010.

⁶ Note, the sterling price cap applies to the price component of submitted price quantity pairs (see TSC paragraph 4.11). The ex-post SMP is capped only by the euro price cap as all monetary values in the MSP Software are in the euro currency.

2.2 PFLOOR

2.2.1 Initial Proposals

In the Consultation Paper the Regulatory Authorities (RAs) noted the fact that SMP has never been set at PFLOOR and this has meant that prices have been set by the MSP software without constraint. This suggests that PFLOOR has been effective in achieving its objectives.

The RAs noted that SMP has never been negative and that no generator has yet bid in a unit with negative PQ pairs but stated that they continue to see merit in giving generators that are prepared to pay to stay on the system rather than be constrained off the opportunity to submit negative price bids. The RAs also noted that no Excessive Generation Events have yet been called and that, given this experience since the SEM began, it looks as if an Excessive Generation Event is rarely – if ever – likely to be declared by the MSP software. Thus, with the current the generation mix, prices are unlikely to go negative for reasons other than generator bidding behaviour.

The SEM Committee thus proposed to leave PFLOOR unchanged at minus €100/MWh for 2009.

2.2.2 Respondents' Comments

Endesa Ireland make the point that the RAs statement that PFLOOR 'has been set to send an efficient market signal both to generation and demand that there is an excess of generation and/or low demand' undermines the statement that 'a generator should not be required to generate when the market price is below SRMC. Endesa also point to the fact the Dispatch and Scheduling Consultation is examining an alternative approach to setting PFLOOR and therefore no decision on the 2010 value should be taken until the conclusion of that consultation. A further suggestion is that the RAs undertake a comprehensive review of the market rather than issuing separate consultations reviewing different aspects of the market.

ESBPG and **PPB** both support the SEM Committee view that the same values that were used in 2008 and 2009 for Price Floor should be used in the year beginning 1st January 2010

VPE signalled that, in view of the review of the longer term review of PFLOOR being undertaken as part of the dispatch and scheduling paper, they have no major objections to keeping the PFLOOR at a negative value

2.2.3 Response by the Regulatory Authorities

In response to these comments the RAs note that:

- no respondents suggest an alternative value for PFLOOR for 2010 and two respondents support maintaining it at its current value.
- as previously stated in the event of excessive generation event, the market price should send an efficient market signal both to generation and demand that there is an excess of generation and/or low demand. Such a signal should not be mitigated such that it prevents consumers from benefitting from negative prices which reflect market dynamics.
- The RAs are conscious that the concurrent Principles of Dispatch and the Design of the Market Schedule in the Trading and Settlement Code Paper (SEM-09-073) is currently examining the wider issues around the market price floor and excessive generation and as such substantive comments on the PFLOOR methodology should be submitted as part of that consultation. This annual PCAP/PFLOOR setting process is part of the RAs annual parameter setting under the TSC.

2.2.4 Final Proposal

Having considered the responses on the review of the effectiveness of PCAP and PFLOOR in the SEM, the SEM Committee has decided that:

- PFLOOR should remain unchanged at minus €100/MWh for 2009;
- The sterling PFLOOR for 2010 should be set according to the Annual Capacity Exchange Rate for 2010
- its value will not be changed during the course of the period to 31st December 2009; unless the SEM Committee determines otherwise
- a review of its effectiveness will be carried out in the second half of 2009.

3 Conclusions

The Regulatory Authorities are required by the Trading and Settlement Code to set values for PCAP and PFLOOR in €/MWh.

The SEM Committee have decided, after due consideration of the responses to the Consultation Paper published on 17th June 2009, that for 2010:

- PCAP will remain unchanged at €1,000/MWh. The sterling PCAP for 2010 should be set according to the Annual Capacity Exchange rate for 2010
- PFLOOR will remain unchanged at minus €100/MWh. The sterling PFLOOR for 2010 should be set according to the annual capacity exchange rate for 2010