# SEM Committee Paper

## Trading and Settlement Code

## PCAP and PFLOOR 2015

## Consultation Paper

## SEM-14-039

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# 1. INTRODUCTION

The SEM Trading and Settlement Code (the Code) sets out a number of policy parameters which are determined by the Regulatory Authorities (RAs) on an annual basis.

## 1.1. VOLL/PCAP/PFLOOR

In accordance with paragraph 4.12 and 4.95 of the Code, the Regulatory Authorities (RAs) are required to determine the following three administered prices:

- the Value of Lost Load (VOLL);
- the Market Price Cap (PCAP); and,
- the Market Price Floor (PFLOOR).

Following consultation last year, the RAs decided (SEM-13-080) for the period from 1 January 2014 to 31 December 2014 that:

- PCAP will remain unchanged at €1,000/MWh;
- PFLOOR will remain unchanged at minus €100/MWh.

This Consultation Paper undertakes a review of the effectiveness of PCAP and PFLOOR with a view to setting the values for 2015.

The calculation of VOLL for 2015, using the methodology decided upon in 2007, will be published later in the year, to meet the requirement in paragraph 4.95 of the Code.

## 2. PRICE OUTCOMES FOR 2012- 2014 IN THE SEM

PCAP and PFLOOR have been determined in previous years by analysis of market data from May to April of the previous year. This year, to coincide more efficiently with the RAs' work plan, in proposing a value for PCAP and PFLOOR for 2015, the RAs will look at data sets covering 1 April 2013 to 31 March 2014 and 1 April 2012 to 31 March 2013.

### 2.1. April 2013 – March 2014

SMP has exceeded €500/MWh on six occasions from the year from April 2013 to March 2014 (0.03% of the time), as the table below shows:

| SMP (€/MWh) | Occurrences (April 2013 to March 2014) | Percentage |
|---|---|---|
| **500 +** | 6 | 0.03% |
| **400 < SMP ≤ 500** | 14 | 0.08% |
| **300 < SMP ≤ 400** | 18 | 0.10% |
| **200 < SMP ≤ 300** | 134 | 0.76% |
| **100 < SMP ≤ 200** | 1,511 | 8.62% |
| **70 < SMP ≤ 100** | 3,343 | 19.08% |
| **50 < SMP ≤ 70** | 6,007 | 34.29% |
| **0 < SMP ≤ 50** | 6,480 | 36.99% |
| **< 0** | 0 | 0.01% |

**Table 1: SMP values April 2013 to March 2014**

- The seven highest SMPs were as follows:

| Highest SMPs €/MWh | Date and Time (April 2013 to March 2014) | |
|---|---|---|
| **682.85** | 13/11/2013 | 17.30 |
| **603.00** | 11/09/2013 | 17.30 |
| **592.00** | 19/01/2014 | 17.30 |
| **550.86** | 04/01/2014 | 10.30 |
| **517.40** | 24/10/2013 | 08.00 |
| **511.00** | 14/11/2013 | 17.30 |
| **494.25** | 30/11/2013 | 10.30 |
| | | |

**Table 2: The Seven Highest SMP values from April 2013 to March 2014**

Uplift has been responsible for spikes in SMP on a number of occasions. Notably it was the main cause of the majority of the highest SMPs over the period examined and was related to the recovery of start-up costs for a number of different units during the relevant trading

periods. The largest uplift in any one trading period was €682.85/MWh. Contour Global 1, Contour Global 2, Contour Global 3 and Rhode 1 peaking units were driving uplift from 17:00 to 17:30. Rhode 2 drove peak uplift from 17:30 until 18:00 on 13 November 2013.

In the period being considered (1 April 2013 to 31 March 2014), the SMP exceeded €200/MWh in 172 trading periods (0.98% of the time). This compares with 167, (0.95% of the time) in the same period (1 April 2012 to 31 March 2013) in the preceding 12 months.[1]

## 2.2. April 2012 – March 2013

The tables below show the distribution of SMPs for the period April 2012 to March 2013.

| SMP (€/MWh) | Occurrences (April 2012 to March 2013) | Percentage |
|---|---|---|
| **500 +** | 6 | 0.03% |
| **400 < SMP ≤ 500** | 18 | 0.10% |
| **300 < SMP ≤ 400** | 29 | 0.17% |
| **200 < SMP ≤ 300** | 114 | 0.65% |
| **100 < SMP ≤ 200** | 1,342 | 7.66% |
| **70 < SMP ≤ 100** | 3,667 | 20.93% |
| **50 < SMP ≤ 70** | 6,740 | 38.47% |
| **0 < SMP ≤ 50** | 5,602 | 31.97% |
| **< 0** | 2 | 0.01% |

**Table 3: SMP values April 2012 to March 2013**

The seven highest SMPs were as follows:

| SMP (€/MWh) | Date | Time |
|---|---|---|
| 1,000.00 | 25/02/2013 | 05.30 |
| 675.58 | 24/04/2012 | 19.00 |
| 657.08 | 17/10/2012 | 19.00 |
| 630.19 | 21/01/2013 | 17.30 |
| 590.74 | 04/01/2013 | 17.30 |
| 517.69 | 25/11/2012 | 12.30 |
| 494.48 | 30/10/2012 | 18.00 |

**Table 4: The Seven Highest SMP values from April 2012 to March 2013**

[1] This also compares with 205 trading periods (1.17%) from May 2012 to April 2013; 235 trading periods (1.34%) from May 2010 to April 2011; and 84 trading periods (0.45%) from May 2009 to April 2010.

# 3. PCAP

In each of the previous decision papers on PCAP, it was noted that the RAs were satisfied that:

- the various measures put in place to mitigate market power in the SEM (directed contracts and the requirement to bid at short run marginal cost) would limit the need for a cap on wholesale prices as a defence against the abuse of market power;
- the requirement on generators to bid at Short-run Marginal Cost (SRMC) should avoid price spikes in the SEM for reasons other than a spike in short run marginal costs (e.g. reflecting a spike in fuel prices) or from a spike in uplift;
- there was nonetheless a case for setting PCAP at a conservative level, at least until:
    - there was adequate liquidity in the contract market to enable participants to manage risk effectively;
    - there was sufficient certainty that the MSP software does not frequently drive prices to PCAP at times when all load is actually being served.

The RAs therefore decided to set PCAP at a number which was a reasonable multiple of the expected SRMC of the most expensive plant on the system. It was argued that this would:

- allow for variations in SRMC during the year to be reflected in SMP without constraint; and,
- ensure that no generator would be expected to generate at a loss if its SRMC was higher than PCAP.

Thus since the beginning of the market, the RAs set PCAP at €1,000/MWh. This level is set to be at a margin above the highest SMP that could be expected in the market in the following year, but not so high as to allow prices to go to excessive levels in the event that the MSP Software fails to determine a price when there is an Insufficient Capacity Event.

## 3.1. EFFECTIVENESS

If SMP is frequently being set at PCAP - for reasons other than Insufficient Capacity Events in the MSP software or an inability of the software to reach a feasible solution - then it could be argued that PCAP was set at too low a level and that it was preventing the proper functioning of the price-setting algorithms in the market software.

PCAP was set at a level sufficiently in excess of the SRMC of the most expensive unit on the system, to allow prices to be set by the MSP software without constraint; This suggests that PCAP was effective in achieving its objectives – i.e. in allowing for variations in SRMC

during the year to be reflected in SMP without constraint and in ensuring that no generator would be expected to generate at a loss if its SRMC was higher than PCAP.

The RAs continue to see merit in maintaining the present level for PCAP due to the fact that measures are in place to prevent prices from spiking; and secondly because Insufficient Capacity Events are not expected to be frequently declared by the MSP software. Moreover, in the setting of parameter values in the SEM, the RAs are cognisant of the need for as much certainty as possible for participants operating in the market.

The data presented for the year April 2013 to March 2014 above indicates that in general SMP has been on average slightly lower than the period reviewed for the setting of the 2013 PCAP. Furthermore there appears to have been fewer instances of price spikes and very high SMP (i.e. SMP over €300/MWh), with a total of 38 instances of SMP greater than €300/MWh as against some 53 instances in the same time period the previous year (April 2012 to March 2013).

Coal prices have fallen over the past twelve months with prices now 11% lower than compared with the previous twelve months. At the same time the day-ahead gas price has decreased by 2%. Carbon prices have seen a severe reduction with prices the same period 42% lower than compared with the same period twelve months ago.

The average forward fuel prices for Q2, Q3 2013 and Q1, Q2 2014 suggest that there will be a 6% decrease in the future price as compared with the period May 2013 to April 2014. The coal futures suggest that there will be a 2% increase in the price of coal as compared with the same period. Carbon is expected to increase by 5% over the same period.

As forward fuel prices suggest a decrease in the price of fuel in 2015, this may indicate that it is unlikely that there will be PCAP events in 2015.

## 3.2. PROPOSAL

The SEM Committee therefore proposes to leave PCAP unchanged at €1,000/MWh for 2015.

# 4. PFLOOR

At the conclusion of last year's consultation, the RAs set PFLOOR in the SEM at minus €100/MWh, a level sufficiently below zero to allow for any generators whose short run marginal costs are a negative figure. The majority of respondents agreed with the RAs proposal.

## 4.1. PRICE OUTCOMES IN 2013-2014 IN THE SEM

Market data for the period from 1 April 2013 to 31 March 2014 show that:

- PLOOR has not been hit during the course of this period.
- SMP was above zero for every trading period, with the lowest value being €0.03/MWh on 16 August 2013.
- There has been an increase ((from 45% to 52.7%) in the number of trading periods where the SMP was below €50/MWh when compared to the previous year: with a total of 5,552 SMP values below €50/MWh in the April 2012 to March 2013 period compared to 6,476 in the April 2013 to March 2014 period.
- Indaver Waste PPMG has bid in a negative PQ pair of €-5.27/MWh.
- No Excessive Generation Events have been called.

## 4.2. EFFECTIVENESS

If SMP had frequently been set at PFLOOR - for reasons other than Excessive Generation Events in the MSP software – then it might be argued that PFLOOR was set at too high a level and that it was preventing the proper functioning of the price-setting algorithms in the market software. Although PFLOOR has occurred once in SEM, this was due to an inconsistency in the market rules; a Modification was raised to address this. Furthermore, PFLOOR was not attained in the April 2013 to March 2014 period.

PFLOOR has therefore been effective in achieving its objectives of minimising exposure of participants to negative prices whilst allowing for an efficient market price signal.

The period examined (April 2013-March 2014) shows a slightly higher occurrence of prices below €50/MWh relative to the same period the previous year (April 2012 to March 2013) reflecting lower underlying fuel costs. However, an Excessive Generation Event has yet to be declared by the MSP software and prices remain unlikely to go negative, at least in the short term for reasons other than generator bidding behaviour.

## 4.3. PROPOSAL

The SEM Committee therefore proposes to leave PFLOOR unchanged at minus €100/MWh for 2015.

# 5. PROPOSED PCAP AND PFLOOR VALUES FOR 2015

As detailed in this paper, the SEM Committee proposes to leave the value of PCAP and PFLOOR for 2015 unchanged as follows:

- PCAP at €1,000/MWh;
- PFLOOR at minus €100/MWh;

The SEM Committee welcomes the views of interested parties on these proposals. It is intended to publish all responses received. If any respondent wishes all or part of their submission to remain confidential, this should be clearly stated in their response. Comments on this paper should be sent to Elaine Gallagher, preferably electronically, to arrive by 5pm on **Thursday, 12 June 2014.**

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