

## NFPA e-POWER Auction Analysis

Winter 2014-15

### Headlines

The NFPA recently held its **e-POWER auction** (8-11 July), with a total of 470MW of capacity auctioned (98 projects). This report analyses 111MW of this capacity, dealing with the 27 commercial contracts in the auction. The average price for commercial **Roc-eligible sites was £102.5/MWh, and non-Roc-able sites saw an average of £51.7/MWh.**

This short report analyses the auction results for the 27 commercial sites and compares them against the past two auctions. The headlines include:

- the 27 commercial projects auctioned achieved an average of 97.8% of their maximum theoretical value for the winter 2014-15 season. The value share retained by the generators very similar to the winter 2013-14 and summer 14 auctions, when commercial projects achieved averages of 98% and 97.9% respectively;
- however, average prices are significantly lower compared with winter 2013-14 and slightly down on summer 2014 auctions, as oversupply in both wholesale power and Roc markets has led to lower prices;
- the three technologies comprising 81% of all analysed sites in the auction (wind, landfill gas and hydro) all achieved an average of 95%-102% of typical maximum values. Landfill gas achieved an average of 102%, indicating the high demand suppliers have for baseload generation and the volume certainty it brings;
- attendance by suppliers hit a new record level for the auction, with 20 involved in bidding. This number was up on the 17 involved at winter 2013-14 and 19 at the summer 14 auction; and
- a record was also set for the number of bids per contract, with an average of 13 received for each auctioned site.

### Cornwall Energy comment

Overall, the winter 2014-15 auction continued to show high levels of demand from suppliers, evidenced by the 20 participants in the auction and 13 bids per contract. An increasing number of suppliers are entering in the e-POWER auction as it a simple and cost-effective route to green power compared with other options, including trading platforms.

Performance of commercial sites in the auction showed, like previous auctions, that shares retained by generators through the e-POWER auction are higher than can be achieved elsewhere. Value retention is up to 8pp higher than under a typical short-term (one to three year) PPA and up to 18pp higher than the terms offered under a long-term PPA. We believe e-POWER auctions could allow the greatest value to be retained by generators, as prices would be fixed amid the backdrop of falling wholesale power and Roc prices.

## 1.1 Introduction

This short report analyses the results for the commercial contracts in the winter 2014 e-POWER auction completed on 11 July. It references the maximum theoretical value that a site could achieve as a £/MWh figure based on different potential sources of value. These sources of value include:

- wholesale power price – for the purposes of the typical maximum value, this is calculated using the winter 2014 baseload power price on the first day of auction;

- green certificates – Renewables Obligation Certificates (Rocs) and Levy Exemption Certificates (Lecs). The rate of award of these certificates varies depending on the technology used for generation;
- Generation Distribution Use of System charges (GDUoS) – these are paid by distribution network operators for localised generation and vary depending on time of day. GDUoS is the most variable of the potential benefits, as it varies by region, connection voltage, intermittency of technology, and whether it is included in the contract; and
- Balancing System Use of System charges (BSUoS) and transmission losses – because a distributed generator does not use the transmission system, distributed electricity generation can avoid associated costs such as BSUoS and transmission losses. Triad benefits are not included in this analysis as they are paid separately from the contract.

Typical maximum values of the above elements for the period 1 October 2014 to 31 March 2015 are summarised in Table 1 and compared with typical maximum values calculated on the days of the summer 14 and winter 2013-14 auctions.

**Table 1: Typical maximum values of e-POWER auction elements**

Element	Wholesale baseload power	Rocs <sup>1</sup>	Lecs	GDUoS <sup>2</sup>	BSUoS	Losses
Winter 14-15 value (£/MWh)	£46.7	£44.5	£5.4	£0-£10.7	£1.5	£0.5
Summer 14 value (£/MWh)	£47.5	£48.0	£5.4	£0-£6.9	£1.6	£0.5
Winter 13-14 value (£/MWh)	£54.9	£47.0	£5.2	£0.2-£3.8	£1.5	£0.5

## 1.2 Winter 2014 summary

The winter 2014 auction saw similar results to the previous two auctions in terms of achieving their theoretical maximum. The 97.8% value recorded was very close to the figures recorded at the summer 2014 auction (97.9%) and at the winter 2013-14 auction (98%) for commercial contracts.

**Table 2: Number of sites achieving proportion of typical maximum**

Range	<=80%	80 to 85%	85 to 90%	90 to 95%	95 to 100%	>100%	Mean
Count	0	0	0	6	11	9	97.9%
Percent	0%	0%	0%	23%	42%	35%	

Broken down by technology:

- wind, which comprises around a third of the analysed sites within the auction, achieved an average price of £97.1/MWh, or 96.1% of each site's typical maximum;
- landfill gas achieved 101.7% of maximum, indicating interest from buyers to purchase predictable baseload output;
- hydro averaged 95% of maximum, or £96.2/MWh<sup>3</sup>;

<sup>1</sup> Cornwall Energy forecast Roc price at the time of auction

<sup>2</sup> The notable changes and ranges of GDUoS are due to the site-specific nature of the benefit.

- AD and biomass achieved 99% and 97% respectively;
- in its first auction solar PV performed well with 97%; and
- MIW sites also demonstrated buyer’s interest in Baseload output with 100%, or £51/MWh.

**Table 3: Average performance by technology**

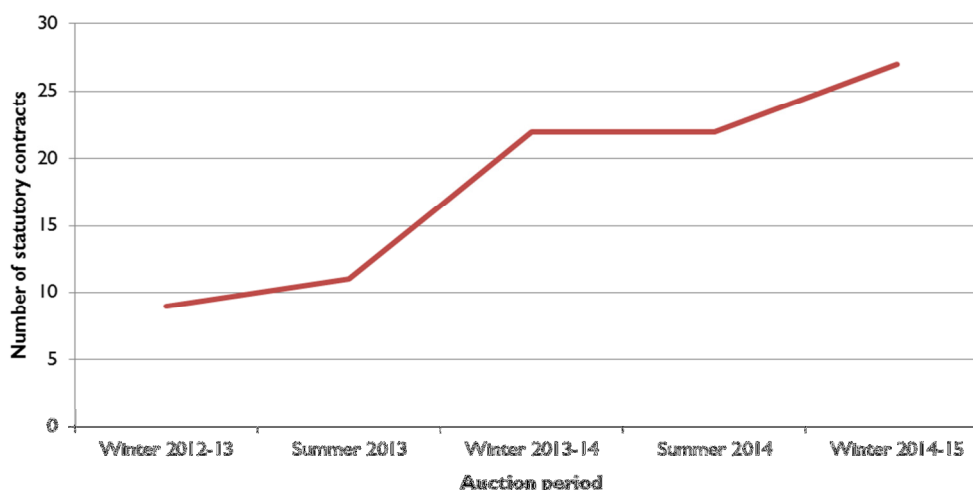
Technology	AD	Biomass	Hydro	Landfill gas	MIW	Solar PV	Wind
<b>Average £/MWh</b>	£144.7	£120.0	£96.2	£105.5	£51.0	£52.0	£97.1
<b>Average % of max</b>	99.2%	96.8%	95.0%	101.7%	100.1%	96.9%	96.1%

Attendance by suppliers hit a new record level for the auction, with 20 involved in bidding. This number was up on the 17 involved at winter 2013-14 and 19 at the summer 14 auction. 12 of the 20 suppliers were successful in winning sites.

A record was also set for the number of bids per contract, with an average of 13 received for each auctioned site. The number of suppliers participating in the auction has increased on the previous two auctions. This level of liquidity and exposure remains greater than a generator could expect to achieve by comparing and negotiating both fixed and flexible short-term PPAs with suppliers<sup>4</sup>.

The number of commercial contracts in the auction has again increased, climbing from the 22 recorded in the summer 2014 to 27. The trend indicates the appetite of purely commercial contracts to enter e-POWER auctions, with potentially higher value retention shares achievable when compared with other routes to market. Figure 1 below indicates the rising number of commercial contracts from the winter 2013-13 auction to now.

**Figure 1: Commercial e-POWER contracts**



<sup>3</sup> A further hydro station was included in the auction but excluded from the analysis as it was a one-year contract and not Roco-eligible and therefore not comparable with the other stations.

<sup>4</sup> Typically, short-term fixed and flexible PPAs are offered at 90%-96% of full market value.

### 1.3 Comparison with winter 2013-14 and summer 2014

Average prices achieved for commercial contracts have generally decreased when compared to both summer 2014 and winter 2013-14 auctions (see Table 4 below). Decreases have been driven by falling wholesale power prices and Roc values. Wholesale power prices usually show seasonal rises from summer to winter contracts, owing to increased demand for power and space heating. However, tumbling wholesale power prices—with the baseload winter 14 power contract losing 14% of its value since January—have caused winter prices to fall below their summer counterparts, this is the first time this has happened in over three years. Power prices have fallen 16% when compared with prices at the start of the winter 13-14 auction. Roc value forecasts have also decreased since the summer 2014 auction, with supply increasing dramatically in the market with high levels of wind and solar PV deployment.

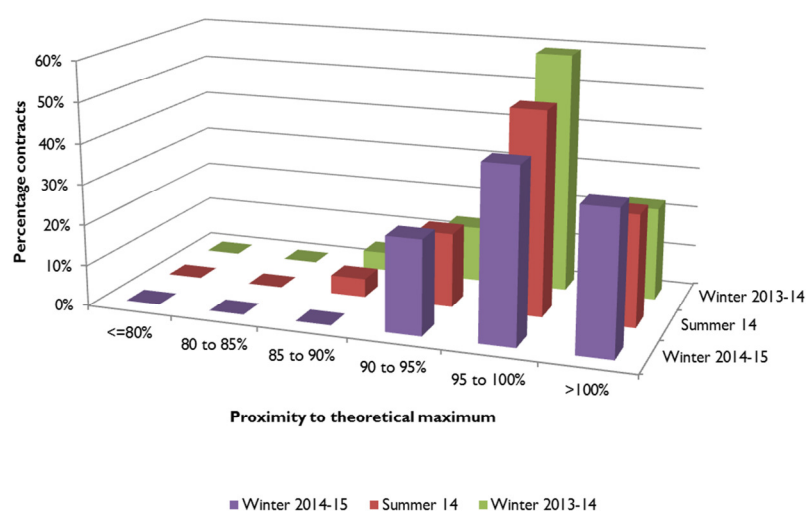
**Table 4: Average prices achieved by each technology (£/MWh)**

Auction	Hydro	Landfill Gas	MIW	Wind	Biomass	Solar PV	AD
Winter 2013-14	£102.9	£112.4	£59.3	£103.4	£121.0	n/a	n/a
Summer 2014	£104.2	£112.4	£59.3	£103.4	£121.0	n/a	n/a
Winter 2014-15	£96.2	£105.5	£51.0	£97.1	£120.0	£52.0	£144.7

When comparing the distribution of values achieved to previous auctions, performance in the winter 2014-15 auction showed greater variation than winter 2013-14. 41% of sites in the winter 2014-15 auction achieved 95-100% of their theoretical maximum, this figure was higher in the two previous auctions, 50% for summer 14 and 59% for winter 2013-14. Significantly however, 33% of sites analysed in the winter 2014-15 auction achieved values above their theoretical maximum. In winter 2013-14, this figure was 23%. The majority of such sites were landfill gas and this indicates buyers are increasingly interested in predictable baseload output.

The average capacity of sites awarded has remained relatively stable over the past three auctions at around 5MW.

**Figure 2: Distribution of values achieved compared to maximum**



Sites that can generate during winter hours of peak demand (non-intermittent sites) are beneficial to suppliers as they can take advantage of higher peak prices (typically around £6/MWh-£7/MWh greater than baseload contracts). The higher values recorded for AD, landfill gas and biomass projects indicate this trend. A chart displaying historical seasonal wholesale price movements can be found in Appendix I.

#### **1.4 Cornwall Energy comment**

Overall, the winter 2014-15 auction continued to show high levels of demand from suppliers, evidenced by the record 20 participants in the auction and 13 bids per contract.

Participation was also boosted by the higher number of commercial contracts in the market, which rose to 27 for this auction, up from 22 previously. While many sites in the auction remain ex Non-Fossil Fuel Obligation (NFFO) developments, an increasing number of new sites are using the e-POWER auction as a route to market for their power, with strong value retention likely to be a key driver of this. An increasing number of suppliers are entering in the e-POWER auction as it a simple and cost-effective route for green power compared with other options, including trading platforms.

The technologies included in the e-POWER auction is also increasing, with AD and solar PV sites entering for the first time with both technologies achieving good results.

Performance of commercial sites in the auction showed, like previous auctions, that shares retained by generators through the e-POWER auction are higher than can be achieved elsewhere. Value retention is up to 8pp higher than under a typical short-term (one to three year) PPA and up to 18pp higher than the terms offered under a long-term PPA. We believe e-POWER auctions could allow the greatest value to be retained by generators, as prices would be fixed amid the backdrop of falling wholesale power and Roc prices.

## Appendix I: Wholesale power price movements

Figure A1: Historic seasonal wholesale price movements (baseload and peak)

