

Date: January 2016

## **Analysis of the NFPA's monthly e-POWER auctions: August 2014 to November 2015**

Prepared by: James Brabben  
Cornwall Energy

## About Cornwall Energy

Cornwall Energy's team of independent specialists have experience of liberalised energy markets and their regulation since their inception in Great Britain and elsewhere in the late 1980s. We provide consultancy, intelligence and training, and are a trusted and reliable partner whether you are a new entrant or a large, established player.

Specific areas of our expertise include:

- wholesale and retail energy market competition and change;
- regulation and public policy within both electricity and gas markets;
- electricity and gas market design, governance and business processes; and
- market entry.

2 Millennium Plain  
Bethel Street  
Norwich  
NR2 1TF

T +44 (0) 1603 604400  
F +44 (0) 1603 568829  
E [info@cornwallenergy.com](mailto:info@cornwallenergy.com)  
W [www.cornwallenergy.com](http://www.cornwallenergy.com)

## Disclaimer

*While Cornwall Energy considers the information and opinions given in this report and all other documentation are sound, all parties must rely upon their own skill and judgement when making use of it. Cornwall Energy will not assume any liability to anyone for any loss or damage arising out of the provision of this report howsoever caused.*

*The report makes use of information gathered from a variety of sources in the public domain and from confidential research that has not been subject to independent verification. No representation or warranty is given by Cornwall Energy as to the accuracy or completeness of the information contained in this report.*

*Cornwall Energy makes no warranties, whether express, implied, or statutory regarding or relating to the contents of this report and specifically disclaims all implied warranties, including, but not limited to, the implied warranties of merchantable quality and fitness for a particular purpose.*

*Numbers may not add up due to rounding.*

## I Introduction

This short report analyses the results from monthly auctions e-POWER has been conducting since August 2014, with 37 sites representing 214MW of capacity traded across eight auctions to November 2015. Sites are analysed as a reference against maximum market benchmark values a site could achieve as a £/MWh figure based on different potential sources of value.

These sources of value include:

- wholesale power price – which for monthly auctions has been calculated as the season-ahead baseload price on the date of the auction;
- green certificates – Renewables Obligation Certificates (Rocs) and Levy Exemption Certificates (Lecs), where relevant. Of the eight monthly e-POWER auctions, seven have included projects with Lec values, the latest November 2015 auction is the first since the removal of Lecs from 1 August 2015;
- Generation Distribution Use of System charges (GDUoS) – some embedded generators may be eligible for GDUoS payments from the distribution network operators. GDUoS is the most variable of the potential benefits, as it varies by region, time of generation, 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 in the e-POWER contract.

Each of the eight monthly auctions were given a maximum market benchmark at the time of the auction, inhibiting comparative analysis of outturn prices. Analysis on a like-for-like basis could also be misleading due to:

- sharp falls in wholesale power prices, which between the firstly monthly auction in August 2014 and the most recent in November 2015 have fallen 23%; and
- the removal of Lecs as a source of value for renewables generators, which has impacted the most recent November 2015 auction.

Therefore, **this paper focusses on the percentage value retention achieved against maximum market benchmark prices set in each individual auction and calculated by Cornwall Energy.**

**Overall, analysis shows that monthly auctions have shown consistent value retention against maximum market benchmarks, both before and after the removal of Lecs as a value source.**

Average value retention of 98.9%, a rise on previous averages seen in seasonal e-POWER auctions, is indicative of wider trends in the short-term PPA market with competition increasing value retention achieved by generators.

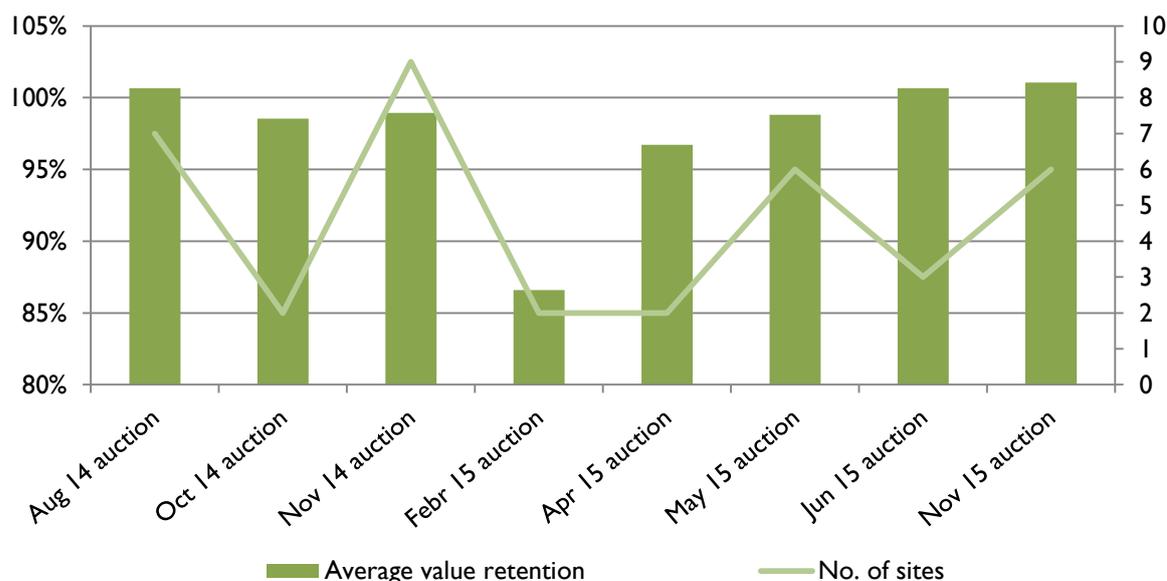
For generators, **absolute comparisons with alternative routes to market are complex** given the spread of offers across different PPA providers for different technologies, and variations between fixed and floating prices of PPAs of different maturities. However, performance of sites in the monthly e-POWER auctions showed that **value shares retained by generators are towards the upper end when compared with those, that we are aware of, being achieved in other routes to market.**

## 2 Monthly auction analysis

Since e-POWER has been conducting monthly auctions, 37 sites have been traded for across eight auctions. Auctions have included RO, FiT and unsupported projects for AD (7 sites), hydro (1), landfill gas (12), municipal waste (3), solar PV (13) and onshore wind (1). Overall, 214MW of capacity has been auctioned.

Comparison across monthly auctions shows consistent value retention against separate maximum market benchmark prices. Figure 1 shows that six of the eight auctions have value retention above 98%, and seven of the eight auctions above 96%.

**Figure 1: Average value retention and number of sites auctioned**



Value retention ranged from 86.5% (a solar PV site) to 109.1% (an AD site) and average value retention was 98.9%, higher than averages seen in previous bi-annual e-POWER auctions (98.3% Summer 15 auction and Winter 14 auction 97.9%). Table 1 below details the range of values.

**Table 1: Number of sites achieving proportion of typical maximum**

Range	85 to 90%	90 to 95%	95 to 100%	100 to 105%	105%+	Average
<b>Count</b>	2	4	14	16	1	<b>98.9%</b>
<b>Percent</b>	5.4%	10.8%	37.8%	43.2%	2.7%	

Monthly auctions also showed a higher proportion of projects were achieving +100% values at 43.2% of all projects. This compares with 24% of projects in the summer 15 auction, 35% in winter 14-15 and 27% in summer 14. The proportion of projects achieving over 100% was the highest of any segmentation.

Broken down by technology:

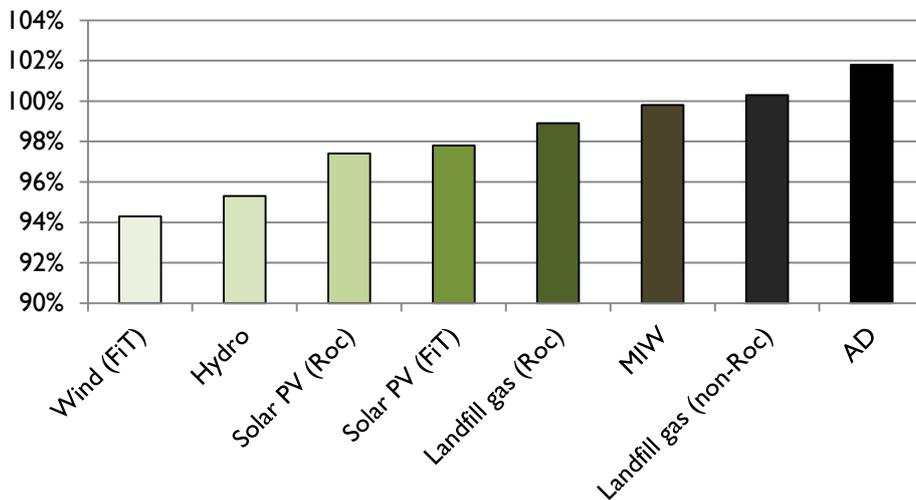
- onshore wind, represented by one FiT eligible site in the auctions, achieved a value retention of 94.3% of the site’s maximum benchmark value in its specific auction;
- hydro, also represented by one site, achieved average value retention of 95.3%;
- Roc-eligible solar PV sites achieved average value retention of 97.4%, while FiT-eligible solar PV sites achieved an average of 97.8%;

- for more predictable baseload technologies;
  - municipal waste sites achieved average value retention of 99.8%;
  - landfill gas sites achieved value retention of 98.9% (Roc-eligible) and 100.3% (non-Roc); and
  - AD sites achieved average value retention of 101.8%.

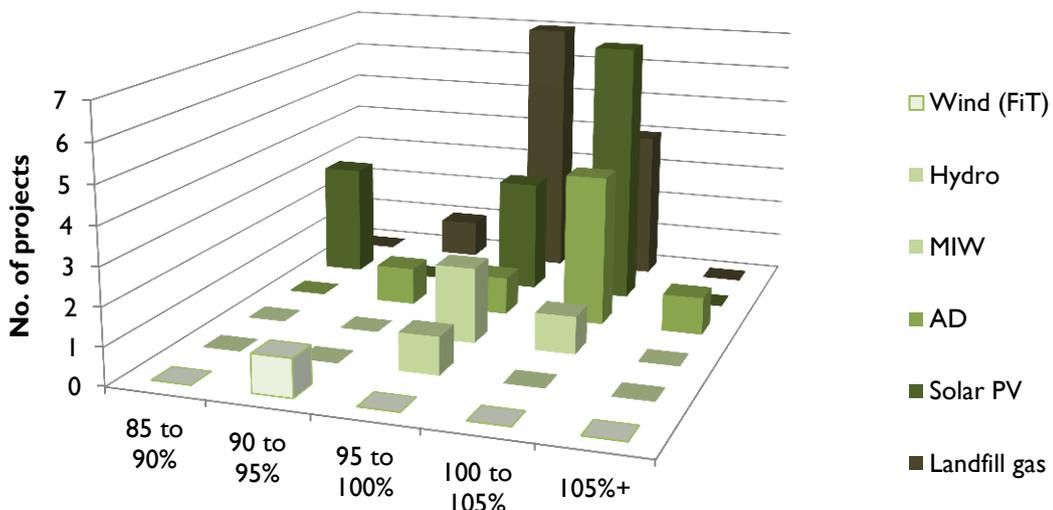
More predictable baseload technologies continued the trend of securing high value retention with nine out of the 16 sites achieving of 100% of maximum market benchmark values municipal waste, landfill gas or AD technologies.

This trend indicates the continued appetite and willingness of some suppliers to pay above market price to secure predictable baseload output. 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 £3/MWh-£4/MWh greater than baseload contracts). Figure 2 below details average value retention by technology and Figure 3 shows the distribution of values compared to the maximum market benchmark.

**Figure 2: Average value retention by technology**



**Figure 3: Distribution of values achieved compared to maximum**



Average values by technology are shown in Tables 2 and 3 below. Values have been split by projects which auctioned with Lec values included and those auctioned after it was announced that LeCs would be removed for renewable generators from 1 August 2015.

**Table 2: Average values and retention by technology (LeCs included)**

Technology	AD	Hydro	Landfill gas (non-Roc)	Landfill gas (Roc)	MIW	Solar PV (FiT)	Solar PV (Roc)	Wind (FiT)
<b>Average £/MWh</b>	£57.79	£92.00	£59.55	£102.87	£50.95	£55.61	£139.80	£52.00
<b>Average % of max</b>	101.8%	95.3%	100.3%	98.5%	99.4%	95.7%	97.4%	94.3%

**Table 3: Average values and retention by technology (LeCs excluded)**

Technology	Landfill gas (Roc)	MIW	Solar PV (FiT)
<b>Average £/MWh</b>	£87.40	£40.40	£43.70
<b>Average % of max</b>	98.0%	100.7%	103.2%

With the removal of LeCs, average £/MWh values for projects have fallen for comparable technologies. However, average value retention remains above 98%.

### 3 Cornwall Energy comment

Monthly auctions have shown consistent value retention against maximum market benchmarks, both before and after the removal of LeCs as a value source and in a time of sharp falls for wholesale power prices.

Average value retention of 98.9%, a rise on previous averages seen in seasonal e-POWER auctions, is indicative of wider trends in the short-term PPA market, with competition increasing value retention achieved by generators.

For generators, absolute comparisons with alternative routes to market are complex given the spread of offers across different PPA providers for different technologies, and variations between fixed and floating prices of PPAs of different maturities. However, performance of sites in the monthly e-POWER auctions showed that value shares retained by generators are towards the upper end when compared with those, that we are aware of, being achieved in other routes to market.