

## Welcome to The e-POWER Bulletin!

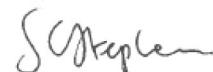
The e-POWER Bulletin aims to provide a unique focus, giving you - the generators - just what you need to know when selling your renewable power. No more, no less. In this issue we take a look at:

- Ongoing reviews of embedded benefits;
- DECC's consultation on AD Feed-in tariffs;
- trends in wholesale power prices;
- e-POWER's involvement in a new local energy supply project;
- an update on e-POWER auctions; and
- the latest e-ROC auction results.

Whether you're a prospective or existing e-POWER user, the aim of this newsletter is to meet your needs. So if it doesn't hit the spot or you've got ideas for future content, I would love to hear from you.

Thanks for reading,

Stuart Stephens



## Embedded benefits in the spotlight

On 23 May the Association for Distributed Energy (ADE) issued a report, written by [Cornwall Energy](#), on embedded benefits. These are defined as the payments distribution-connected generators can earn from reducing network usage.

The report followed increasing political focus on the issue, with a DECC consultation on 1 March confirming that Ofgem would look at current network charging rules and how they impact on embedded generation. In this e-POWER bulletin, we look at the key findings of the report and the potential impacts of any changes on distributed generators.

There is now around 20GW of generation that is connected at the distribution network level, and this is having a major impact on the evolution of the electricity system.

The value of embedded benefits to each generator varies considerably, depending on

location and technology. Many payments are not directly to generators, with benefit shares usually negotiated as part of Power Purchase Agreements (PPAs) with suppliers. e-POWER PPAs are slightly different, with suppliers building values for embedded generation into their bids on the auction platform.

The total level of embedded benefits has almost doubled from around £300mn to £560mn over the last five years, the report stated. The rise is due not only to a combination of increased volumes of generators connected at low voltage following the roll-out of low-carbon incentives, but also an increase in the rate of some of these benefits as demand falls on the system.

In understanding the impact of these changes, DECC has focused on large baseload CCGT stations.



The government believes these have a key role to play in the low-carbon transition, but they have not come forward to the extent that the government had hoped. The implication from DECC is that embedded benefits are providing an unfair commercial advantage to smaller plant, and the department therefore wants to level the playing field by reducing or eliminating them.

### Key findings

The report came to the following conclusions:

- when the current level of embedded benefits is assessed as a whole, they are broadly providing a fair level of reward to generators for the various costs that they help avoid across the system;
- there are a number of issues with individual embedded benefits which mean that some are likely to over or underestimate the value to network companies and suppliers, and this varies by generation type and location; and
- while the “triad benefit” that arises from reduced transmission system use is overvalued, particularly in the short term, the credit available for reducing a distributor’s costs through offsetting local demand is significantly undervalued.

In terms of the triad benefit, the conclusion explains why DECC, Ofgem and National Grid are all keen to push through the review. But analysis suggests that many costs actually vary with demand when a long-term view is adopted.

For distribution, the report viewed current charging methodologies as understating the benefits of the avoided costs from embedded generators. Non-intermittent embedded generation currently receives credits for exporting on to a distributor’s network, but the level of credits is lower than the equivalent charge to demand customers. This means perversely that generators can get more benefits from installing private wires to demand customers and bypassing the distribution network.

### What next?

The headline conclusion was that much more work was needed to understand embedded benefit incentives, how they were realised contractually and their interaction with other areas of the market.

The report also stated that a policy review would need to be wide-ranging rather than on a piecemeal basis, as a narrow approach would almost certainly impact adversely on the viability of existing embedded generators and future investments. Adverse effects included potentially higher capacity market clearing prices, higher wholesale power prices and a rise in reinforcement costs on the transmission system as embedded generation may be replaced by transmission-connected generation.

Any change would obviously impact existing embedded plant. Much of this is not intermittent but is reliable and controllable. In terms of revenue, embedded benefits contribute between 20%-50% for these generators and the importance of this value stream has increased with falling energy prices and the loss of Levy Exemption Certificate values. Additional Cornwall Energy research suggests several gigawatts of plant could be put at risk by isolated action against the triad benefit.

Overall, Cornwall Energy’s report warned that unintended consequences could come from any interventions aimed at the current embedded benefit arrangements. The GB electricity market is becoming more diverse and uncertain and flexibility will be key to managing this.

Flexible embedded plant is already playing a major role, with over 2GW of investment in this alone in the last two capacity market auction rounds, worth an estimated £500mn.

Embedded benefits are likely to play an important role in creating the business case for future investment in these types of projects and any reduction at a time of market change and new development could set the industry back.

# DECC launches review on FiT support for biogas

On 26 May DECC [opened a consultation](#) on revising support levels for anaerobic digestion (AD) and micro-combined heat and power (mCHP) through the feed-in tariff (FiT) scheme. The review follows the core FiT consultation that opened in August 2015, which reviewed support levels for wind, solar PV and hydro, but did not include AD or mCHP in its scope.

DECC explained that AD had deployed successfully under the scheme since 2010. Government projections of 100 installations and 160MW of installed capacity by 2020-21 have already been surpassed, with 250 installations that have an installed capacity of 177MW (as of March 2016) in place.

For the 0-250kW and 250-500kW AD tariff bands, DECC proposes to maintain the current tariff trajectory. In January 2017 this will bring tariffs down to

5.98p/kWh and 5.52p/kWh respectively (see tariff table above). For the larger band of 500kW-5MW, the government proposes to reduce the generation tariff to zero. DECC looked at AD installations that were also claiming Renewable Heat Incentive subsidies, and showed that such installations are able to make sufficient revenues to make the deployment of the plant viable and achieve a 9.1% rate of return without support from the FiT generation tariff.

The government reiterated its grandfathering commitment, meaning only new sites will be impacted. Any new AD installations from 1 January 2017 will be subject to the new tariffs.

**Responses are invited by 7 July. Subject to stakeholders' views, DECC will aim to implement any changes as soon as legislatively possible, and expects the measures to be in place for January 2017.**

## Proposed generation tariffs

	Proposed Generation Tariffs for 1 Jan 2017 (p/kWh, Nominal prices)	Ofgem Tariffs for installations with an eligibility date on 1 <sup>st</sup> April to 30 <sup>th</sup> of June 2016 (p/kWh, 2016/17 values)
<b>AD</b>		
0 - 250 kW	5.98	8.21
250 - 500 kW	5.52	7.58
500 - 5000 kW	0.00	7.81
<b>Micro CHP</b>		
<2 kW	13.61	13.61

Source: DECC

## Wholesale prices

Seasonal power prices are 15.6% higher when compared with prices on 30 March 2016, the issue date of the last e-POWER bulletin. Gains have been influenced by rising oil and coal prices as well as concerns over power supply margins for the coming winter.

Brent crude oil is now 28.3% higher when compared to 30 March. The price of oil rose during March and April as news emerged that OPEC and non-OPEC nations had agreed to meet in to discuss further production freezes. During May, prices were supported by a number of supply disruptions.

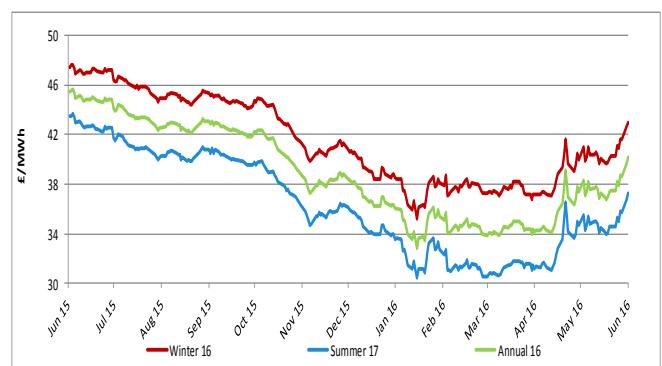
Gas markets have followed oil prices higher, with many seasonal gas contracts still oil-index linked. Annual October 16 gas is now 22.0% above March 2016 levels.

Additionally, coal prices are currently 31.1% higher when compared to 30 March, owing to a combination of supply cuts from major coal producing countries and a rise in demand from Asia.

As a result of these commodity rises, most seasonal power contracts have followed the higher. Winter 16 grew 20.6% to £40.0MWh, following the closure of a number of coal-fired power stations such as Rugeley, which will tighten capacity margins for the coming winter.

Summer 17 power gained 23.6% to £37.2/MWh and is now back close to level of October 2015. The contract followed similar gains in its gas counterpart. Overall the annual October 16 contract gained 22% and is now at close to seven-month highs at £38.6/MWh.

## Seasonal price trends

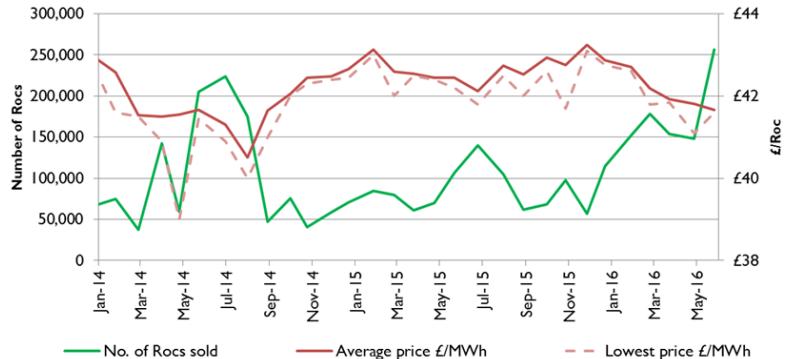


## e-Roc auctions reach major milestone

The latest e-ROC auction was held on 25th May and saw 256,344 Rocs sold, the largest ever sale volumes. With these sales, a major milestone for the platform was reached with 10mn Rocs now being sold since the first auction in October 2002.

At that time the auction was only run quarterly. e-ROC moved to monthly auctions in 2010 with average volumes of 50,000 ROCs being sold each month. Over the last year monthly volumes sold in the auction have increased to an average of over 125,000 ROCs per month.

Date	No. of Rocs sold (approx.)	Average price £/MWh (approx.)	Lowest price £/MWh (approx.)
Jan-14	50,000	100	80
Mar-14	60,000	90	75
May-14	70,000	85	70
Jul-14	80,000	80	65
Sep-14	90,000	75	60
Nov-14	100,000	70	55
Jan-15	110,000	65	50
Mar-15	120,000	60	45
May-15	130,000	55	40
Jul-15	140,000	50	35
Sep-15	150,000	45	30
Nov-15	160,000	40	25
Jan-16	170,000	35	20
Mar-16	180,000	30	15
May-16	190,000	25	10



A record number of electricity suppliers took part again with bids being made by 15 suppliers. The average price in the auction was £41.66, down 15p on April 2016. Falls are in line with forecasts of oversupply in the market for CP14, owing to higher offshore wind and exceptional biomass generation. The impacts of CP14 oversupply are likely to impact ROC values into CP15.

**The next e-ROC auction will be held on 24th June 2016.**

## e-POWER joins new local energy supply project

e-POWER has joined a collaborative group aimed seeking to match local renewable generation and demand across the GB energy market. The local supply community (LSC) project, being led by Pixie energy, aims to organise a pool of generation and match up supply to local sources of demand.

The end goal of the project is to capture more value for generators and allow access to full embedded benefits for suppliers, generators and consumers. e-POWER has joined the project to offer its services of matching generators with suppliers to achieve the highest price.

Research for the LSC project has shown that matching local generation and supply has a number of benefits for generators, suppliers and consumers including:

- allowing generators to gain prices closer to market rates as suppliers can bid more competitively on projects in a specific region with access to embedded benefits;
  - the full value of these embedded benefits can be shared between stakeholders;
  - working together generators and suppliers can realise additional sources of value, including flexibility and demand management; and
  - matching energy locally can help meet objectives of respective stakeholders, including sourcing local renewables generation.

The LSC concept has been developed over the past two years, and started with research into how local supply tariffs in distribution regions, supported by local generation, compared to the costs of national supplier offerings. More recently, it has focused on ways of consolidating and balancing half hourly (HH) metered local generation and demand.

e-POWER attended the launch event in February, chaired by former energy and climate change secretary Sir Edward Davey, and has since formed part of a collaborative group which will research local capabilities. Over the coming months research projects will be undertaken in three GB distribution zones to establish the viability of matching local generation to demand. These projects will use real-world data to assess the business case in each region. A “toolkit” will also be developed, which it is hoped will enable the roll-out of the future LSC projects in different regions across the country.



## Latest e-POWER auction results

Since the last e-POWER bulletin in March 2016, two further monthly e-POWER auctions have been held. On 27th April the e-POWER monthly auction attracted a high number of bids with the sites sold achieving on average 97% of full market value. The auction allowed generators to take advantage of the uptick in wholesale power prices seen since March. The latest e-POWER monthly auction was held on the 25th May 2016. Over 30MW of solar PV and onshore wind accredited under the RO or FiT scheme was sold in the auction.

The next e-POWER auction will be held on 12th July 2016. As part of the auction e-POWER will be hosting a webinar with the Renewable Energy Association (REA). Gaynor Hartnell, the former Chief Executive of the REA, will be hosting the webinar, which will provide the opportunity to watch the e-POWER auction in real time to see renewable generation projects getting the best price for their green power.

**Sign-up details of this free to attend webinar can be found [here](#). Renewable generators nearing the end of their current PPA, commissioning a project in the next 9 months or contemplating subsidy free projects are recommended to attend.**

## Other industry news in brief

## **Centrica acquires PPA provider NEAS energy**

Centrica announced on 21 April that it would acquire NEAS Energy for around £170mn. The move is in line with Centrica's plans to expand its route to market services in Europe. NEAS has 8.6GW of capacity under management across 2,500 decentralised assets. Centrica CEO Iain Conn said its strategy recognises the energy landscape is changing with a trend away from large centralised power to decentralised generation, much of this being intermittent.

## **Ecotricity purchases SunEdison rooftop business**

Ecotricity announced on 21 April it had acquired SunEdison's home rooftop solar business. SunEdison has recently exited the market, but prior to this had offered a service called Energy Saver Plan, which

aimed to save customer 15% on their electricity bills with no upfront payment for solar installations.

Ecotricity said this would be its first step into the domestic solar market, and noted that falling technology costs would mean it was "only a matter of time before installations can start again".

## Green policy changes undermine UK renewables sector

A number of "sudden and severe" policy changes could slow the progress of the UK renewables industry, a new report has said. Published by the Renewable Energy Association (REA) on 7 June, the report found that the UK's renewables industry was worth £15,913mn in 2015 - an increase of £982mn on the year before. This represented an annual growth rate of 6.6%, compared to growth in the overall economy of 2.5%.

However, the REA warned that recent policy reversals were likely to have a negative impact on growth in 2016, and that the government needed new policies in order to meet its 2020 renewable energy targets—especially in heat and transport.



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