

NOVEUS ENERGY

OPTIMISING SUPPLY AND DEMAND THROUGH INNOVATION

KEY GOVERNMENT & INDUSTRY SCHEMES & SUBSIDIES



INTRODUCTION & CONTENTS

The main driver for change in the electricity market is being driven by the Government's Electricity Market Reform (EMR). The EMR programme provides an ambitious package of measures to incentivise the investment needed to replace the UK's ageing electricity infrastructure with a more diverse and low-carbon energy mix. Up to £110 billion of capital investment is needed from now until 2020.

The EMR is designed to enable the UK to:

- Keep the lights on
- Decarbonise electricity generation
- Whilst at the same time ensuring energy bills remain affordable

According to Government research the Electricity Market Reform is expected to reduce annual household electricity bills by an average of £41 (6%) over the period 2014 to 2030 (real 2012 prices), relative to achieving the same level of renewables and decarbonisation using existing policy instruments. Making the same comparison for businesses shows electricity prices and bills are lower by an average of around 7-8% over the period 2014 to 2030 than they would otherwise have been.

The two key mechanisms in the EMR to achieve this are the Capacity Mechanism and Contracts for Differences (CFD), a number of other schemes and initiatives hang off these two cornerstones of EMR policy.



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1. Capacity Mechanism

What is it?

The Capacity Market will give investors/large scale generators the certainty they need to put adequate reliable generation capacity in place to protect consumers against the risk of supply shortages. It does this by providing a predictable revenue stream to providers of reliable capacity. In return they must commit to provide capacity when needed or face financial penalties.

In addition to the main scheme there will be a top up scheme for smaller generators similar to the current STOR market to balance national demand.

The first Capacity Market auction will be run in late 2014, for delivery in 2018/19 subject to State Aid clearance.

Customer Impact

According to Government and Ofgem research the value that consumers place on avoiding loss of electricity supply at times of system peak is around £17,000/MWh (Approximately £2MWh over the year - 2% of bill).

According to Npower research it is expected that the capacity mechanism will add approximately £3-7MWh annually to end user bills and that this will be billed during the peak winter period of November to February between 4-7pm Monday to Friday and will be equivalent to £103MWh to £240MWh. Avoiding these charges through generation or demand reduction throughout the peak period will net between £26,000 to £61,000 per MW (exc. generation costs), economically indicating that managing peak demand will be critical in the future (see Integrated Energy Planning & Delivery service description).

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2. Contracts for Differences (CFD)

What is it?

Contracts for Difference (CfD) will support low-carbon generation by giving eligible generators increased price certainty through a long-term contract. A CfD will largely remove exposure to volatile wholesale prices during the CfD period, substantially reducing investment risk. Generators will receive revenue from selling their electricity into the market as usual and will also receive a top-up to a pre agreed 'strike price'. If the market price is over the strike price then the generator must pay back the difference.

The amount of money being given through CFD's will be managed through the Levy Control Framework (LCF) allowing Government to control public expenditure paid for through consumers' energy bills.

The LCF sets annual limits on the overall costs of DECC's levy-funded policies. These comprise the Renewables Obligation (RO), small scale Feed-in Tariffs (ss-FIT), Investment Contracts for Final Investment Decisions Enabling for Renewables (FIDeR) and Contracts for Difference (CfDs). The total fund is forecast to be £7.6bn in 2020/21 (in real 2011/12 prices).

Customer Impact

The impact to customers will be more renewables generation as part of the overall energy mix and Government thinking is that this will dampen the volatility of fossil fuels and the UK wholesale market.

As some generation in the renewables mix is intermittent it is inevitable the National Grid will continue to have a number of demand side balancing services to help meet national demand, in the same vain as STOR.

For customers with renewables generation over 5MW then payment will be made through CFD mechanism, for customers with renewables less than 5MW then payment will be through the Feed in Tariff (FIT's) as is currently the case.

The CFD will run alongside the current Renewables Obligation (RO) until RO is completely phased out. The government assertion is that customers will pay less under CFD's than under the current RO.

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3. Renewables Obligation (RO)

What is it?

The Renewables Obligation (RO) is the main support mechanism for large scale renewable electricity projects in the UK. Smaller scale generation is mainly supported through the Feed-In Tariff scheme (FITs).

The RO came into effect in 2002 and places an obligation on UK electricity suppliers to source an increasing proportion of the electricity they supply from renewable sources.

The Department of Energy and Climate Change (DECC) announced in September 2013 that suppliers must source 24.4% of their electricity from renewable sources for the period April 2014 - March 2015.

Customer Impact

The impact to customers is purely a financial one and the support level is included in the invoice as an explicit charge. It must be noted that not all suppliers and third party brokers include RO in their price analysis when comparing offers. The RO is a significant price component and must be included in any price analysis and is shown below for the last 2 years.

2013-2014	0.866p/kWh
2014-2015	1.057p/kWh

The RO is being phased out with the introduction of CfD's, however, the same level of price uplift will be on customers bills and you should expect this to rise above inflation in the next 3 years.

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4. Renewable Heat Incentive (RHI)

What is it?

The Renewable Heat Incentive (RHI) is a long-term financial support programme for renewable heat. The RHI pays participants of the scheme that generate and use renewable energy to heat their buildings. By increasing the generation of heat from renewable energy sources (instead of fossil fuels), the RHI helps the UK reduce greenhouse gas emissions and meet the Government's climate change targets.

The types of heating you can claim for under the RHI are:

- biomass
- heat pumps (ground source, water source and air source)
- deep geothermal
- solar thermal collectors
- biomethane and biogas
- combined heat and power (CHP) systems

Payments are made over 20 years and are based on the heat output of the system. The scheme is administered by OFGEM and there are a number of eligibility criteria that need to be met.

Customer Impact

For the majority of customers, RHI provides a particularly attractive scheme for boiler replacement with return on investment as short as 5 years (depending on fuel). A number of organisations will fully fund the boiler replacement with RHI benefit going to them for the 20 years. The key consideration for gas boiler replacement to Biomass would be the guaranteed source of fuel and the price, the storage space required within the site and the on-going access for deliveries of fuel to the site.

The eligibility criteria and application process can be lengthy and we would advise that professional help is sought to maximise the opportunity of obtaining the funding.

For support and advice on RHI please contact our team.

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5. Feed in Tariffs for Small Scale Renewable Generators (FiT)

What is it?

The Feed-in Tariff (FiT) scheme is a government programme designed to promote the uptake of a range of small-scale renewable and low-carbon electricity generation technologies, up to 5MW.

The FiT scheme is available through licensed electricity suppliers. It requires them to make tariff payments on both generation and export of renewable and low carbon electricity. Generation and export tariff rates are index-linked which means that they will increase or decrease with inflation.

Customer Impact

At present the return on investment for small scale renewable projects is on average 7+ years (tariffs and ROI are dependent on the type of technology) and is normally carried out for CSR purposes as much as financial return.

If you do install renewables then you can benefit in two keys ways, one of which will be more prevalent in the future.

Generation/Export - for each unit of electricity you generate, your energy supplier will pay you a set rate depending on the renewable technology. Once you have registered for a FiT, the tariff levels are guaranteed for up to 20 years (25 years for solar PV) and are index linked to RPI. In addition your supplier will pay you a negotiated rate for the excess energy you export to the grid.

Lowering Energy Bills - as energy bills continue to rise, with large increases forecast in the non-energy and peak demand costs rather than the wholesale market price anything the customer can do to reduce demand (generating your own power) and avoid costs in peak periods will have a greater proportional benefit in the future.

To undertake a renewables project a customer should ensure a full financial model is undertaken which incorporates not only the FiT and export contract but moreover the avoidance of the increase in energy and non-energy costs in the future.

For support and advice on FiT please contact our team.

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6. Demand Side Balancing Reserve (DSBR)

What is it?

DSBR is designed to provide additional reserves to support National Grid in balancing the transmission system if there is insufficient generating plant available in the market to meet the Government's Reliability Standard.

The service involves signing up large energy users over 1MW who could reduce their demand (or run small embedded generation) during winter weekday evenings 4-8pm in return for a payment. This service would only be used in extreme circumstances, in the very unlikely event that there is insufficient generation available to meet demand.

DSBR providers would declare their capability to reduce demand (or increase generation output) against a baseline for at least one hour between 4pm and 8pm on working weekdays in the months November to February, having been given at least two hours' notice.

The auction round for winter 2014/2015 closed at the end of July 2014 and is seen by National Grid as a trial year with low levels of volume expected to be contracted. Below is the ramp up in the scheme in terms of volume requirements.

Year	Maximum Target Volume
2014/15	330 MW
2015/16	1,800 MW
2016/17	1,300 MW
2017/18	800 MW

* please note that the national grid will procure c25% more volume than shown to meet the target volume requirements.

Customer Impact

DSBR provides customers with revenue for either reducing demand during peak periods or utilising generation assets. It is not available for customers who are already participating in a National Grid balancing service such as STOR.

Customers can bid for each winter in the spring of the preceding year either as a single site, a customer portfolio or through an agent that aggregates customers together.

The price paid is through an auction for a minimum of 1 hour during the winter peak period and Contracts will be awarded in ascending unit cost order until the volume requirement is achieved. The National Grid has indicated that all tenders without set-up fee or admin fee will be accepted i.e. those customers willing to only have a utilisation fee. The utilisation fee ranges from £250MWh to £15,500MWh, however, those sites bidding at the lower levels are more likely to be called than those at the higher end.

As with the existing balancing reserve schemes it is advisable to review the first auction results (i.e. 2014-2015) before entering into the auctions for the following years to ensure you have the maximise opportunity to participate.

For support and advice on DSBR and how to participate please contact our team. (See Short Term Demand Reduction web page).

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7. Electricity Demand Reduction Pilot (EDR)

What is it?

The EDR pilot scheme will provide organisations with financial support to install more efficient electrical equipment which reduces their peak electricity demand.

The Government is testing whether projects that deliver lasting electricity savings at peak times (in kW) - for example by replacing old bulbs with LEDs or improving motors and pumps - could in future compete with generation, demand side response (DSR) and storage in the forthcoming GB Capacity Market.

To qualify customers must demonstrate that a minimum of 100kW of peak period capacity savings are being made due to installation of more efficient measures and not linked to switching off, changing fuel sources, using on-site generation, reducing operation of equipment and behavioural schemes. The payback period must be 2 years or more, however, less than 2 years will qualify if the average of all measures for the total site is less than 2 years.

Customers that are claiming under Climate Change Agreement (CCA), Green Deal, Salix Finance, Renewable Heat Incentive (RHI), Demand side Balancing Reserve (DSBR) cannot claim under EDR.

The first EDR Pilot auction is for a total of £10 million and is being held in January 2015. Subject to the outcome a further auction may follow. The total budget for the EDR Pilot is at least £20 million.

Customer Impact

Customers that register between 29 July to 30 September 2014 and submit an application by 31 October 2014, and whose projects qualify, will be invited to take part in a competitive auction by 12 January 2015. Customers can bid in kW savings from projects they plan. The winning bids will be those that represent best value for money (ie, the lowest price for each kW offered) up to the total budget available in the auction. Successful bidders will receive payments once savings are delivered and evidence received.

Customers will receive the 100% of their capital expenditure if satisfactory evidence that all capacity savings in their bid have been delivered and in line with the monitoring and verification (M&V) plan and that all other evidence has been requested by DECC.

If the commitment of capacity savings is not met the customer will face a penalty of 2% for every 1% capacity savings not delivered.

This provides customers with further evidence that the drive to manage peak electricity demand is seen as critical and financial incentives and penalties will be prevalent in the market to make this happen. (See Integrated Energy Planning & Delivery service description).

For support and advice on EDR and how to participate please contact our team (See Integrated Energy Planning & Delivery service description).

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8. Short Term Operating Reserve (STOR)

What is it?

The Short Term Operating Reserve (STOR) is one of National Grid's tools used to balance the electricity system and ensure the security of supply. The government already has, and continues to introduce, schemes such as STOR to support the Grid's ability to "keep the lights on" in peak periods.

Following the submission of a successful bid, each service participant enters into a contract to provide a specific level of power when instructed by National Grid.

The minimum capability requirements for STOR are as follows:

- A minimum contracted MW capability of 3 MW (can be across a number of sites)
- Ability to deliver full output within 4 hours from National Grid notification
- Provide full output for a minimum of 2 hours
- A recovery period of 20 hours after powering-down
- The technical ability to provide the service at least 3 times a week

National Grid predicts the reliance on STOR generation is expected to double in the next eight years.

Customer Impact

STOR provides an opportunity for revenue through the agreement of either a committed or flexible contract. Both provide payments for standby capacity and when required energy export based on rates that are secured following a competitive bid process.

The contract rates payable by National Grid vary widely because they are dependent on a number of factors including: location, site and generation type, response times, and whether the contract is for a single site or aggregated volume. To secure a successful bid, customers must submit competitive offers that fully take into account site specific operations and the relative cost of generating electricity.

The STOR market has changed significantly over the last 2 years, smaller flexible contracts are becoming more popular whilst some of the larger players have decided to exit. This has resulted in diminishing revenues for some customers. Despite this backdrop it is still possible to generate substantial returns through integrating opportunities in STOR with energy procurement and demand reduction initiatives.

For support and advice on STOR and how to bid competitively please contact our team (See Short Term Operating Reserve service description).

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9. Energy Savings Opportunity Scheme (ESOS)

What is it?

The Energy Savings Opportunity Scheme (ESOS) is a mandatory energy assessment and energy saving identification scheme for:

- An organisation which has 250 or more employees in the UK.
- An organisation which has fewer than 250 employees, but has:
 - an annual turnover exceeding €50m and
 - a balance sheet exceeding €43m.
- Part of a corporate group which includes an organisation which meets the above.

If you meet the criteria under ESOS you have to:

1. Measure your consumption across your buildings, transport and industrial activities
2. Ensure that 90% of your total energy consumption is subject to an ESOS compliant audit, a display energy certificate, a green deal assessment or a certified ISO 50001 energy management system during each phase of the scheme
3. Report compliance to the environment agency

ESOS will operate in four-yearly compliance phases. Organisations in the UK must assess whether or not they are required to participate in ESOS on the qualification date of each phase. The qualification date for the first phase is the 31st December 2014.

The scheme is estimated to lead to £1.6bn net benefits to the UK, with the majority of these being directly felt by businesses as a result of energy savings.

Customer Impact

The key customer impact is that you have additional compliance audits to carry out if you qualify and are not part of a recognised energy management scheme as detailed above.

As a customer the first step is to assess whether you qualify as this is a legally compliant scheme, as with CRC there are a number of interpretations on qualification and it would be advisable to obtain advice/research in this area.

If you do qualify then you must calculate your energy usage, if you are part of the CRC then part of the calculations on energy usage will already be complete with key exception of transportation. Once you have determined your total energy consumption, you are required to audit assets and activities that amount to 90% of this i.e. the areas of significant usage. There is a lot of flexibility on the 10% you exclude and once again advice around this area would be valuable.

Following this you will need to appoint a Lead Assessors (LA), the LA must oversee or review your ESOS Energy Audits and sign-off your overall ESOS Assessment once complete.

The Lead Assessor must belong to a register of energy professionals approved by the Environment Agency.

For support and advice on ESOS please contact our team.

Qualification date:	Four-year compliance phase:	Compliance date:
31st December 2014	6th December 2011 – 5th December 2015	5th December 2015
31st December 2018	6th December 2015 – 5th December 2019	5th December 2019
31st December 2022	6th December 2019 – 5th December 2023	5th December 2023

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10. Third Party Intermediaries Code of Conduct

What is it?

There are a number of concerns at present about the practices of some energy brokers, which are leading to customers losing trust in the third party market. If left this could hinder competitive activity in the energy market as a whole. Specific concerns include: poor quality service provision, misleading advice and a lack of transparency on commission levels.

In response to this OFGEM are introducing a code of conduct to regulate the activities of Third Party Intermediaries (TPI), its objective is to;

'protect the interests of non-domestic consumers and, in particular, their interests in having the confidence that when using a Third Party Intermediary (TPI), the TPI will act in a fair, honest, appropriate and transparent manner and effectively assist them with their energy supply needs.'

It currently focuses on seven areas, these include:

1. Training
2. Clear and truthful selling, marketing and advertising
3. Protect consumers from high pressure selling techniques
4. Commission and fees
5. Complete and accurate pre-contractual information
6. Complete and accurate notification of contract terms
7. Dispute resolution

The code is still in consultation and is expected to be ratified within the next 12 months; however, it is unclear whether it will be a mandatory and who will administer it.

Customer Impact

According to Cornwall Consulting survey, a significant proportion (71%) of customers think a code of practice would improve the services provided by brokers.

If the code is mandatory and has a binding set of requirements enforced by a regulatory body then this would reduce the number of brokers operating in the market and would improve the level of advice and service currently being delivered.

In addition a mandatory code with transparent fees would significantly improve innovation and competitive activity in the sector for the benefit of customers but moreover the benefit of the wider industry.

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11. Carbon Reduction Commitment (CRC)

What is it?

Participants are required to register in the scheme, collect and record energy usage, report emissions to the Environment Agency and purchase carbon allowances equivalent to forecast (CO₂) emissions.

Phase 2 (2014 - 2019)

- CRC Phase 2 started on 1 April 2014, the qualification for which was April 2012 to March 2013. The registration deadline for Phase 2 was January 2014.

Qualification criteria

- Qualification for CRC is assessed at the group level, not at the individual company or organisation level.
- Companies that have at least one HH meter that recorded more than 6GWh (circa £500k) of electricity usage in the qualification year will be captured.

Basic Steps

Companies captured under the scheme need to:

- Collate information and submit a report about its energy supplies
- Buy and surrender allowances equal to the CO₂ emissions it generated
- Tell the Environment Agency about changes to its organisation
- Keep records about its energy supplies and organisation in an evidence pack

CRC Scheme Fees

- All participants have to pay a registration fee of £950
- Following registration, you have to pay an annual subsistence fee of £1,290
- If you don't register on time the fine is £5,000 and £500 per day thereafter.

2014/15 Allowance costs

Buying ahead (forecast sale) -
£15.50 per tonne of CO₂ (Approx 0.83p/kWh for electricity, 0.28p/kWh for gas)

Buy to comply -

£16.40 per tonne of CO₂ (5% premium)

Phase 2 price are about 30% higher than Phase 1 (2010- 13)

Phase 2 Timetable (see below)

January 2014	Register for Phase 2
April 2014	Order forecast allowances
June 2014	Pay for forecast allowances (based on above levels)
September 2014	Pay for 2013 allowances (Phase1)
October 2014	Surrender any unused Phase 1 allowances

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