



2015

# Electricity Market Reform



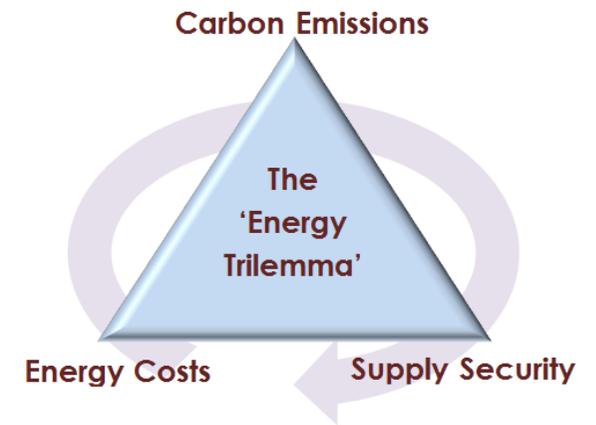
## The Electricity Market Reform

Following the Energy Bill receiving **Royal Assent**, and the release of the **Final EMR Delivery Plan** in December 2013, this briefing note from Apollo Energy will introduce you to the Electricity Market Reform and what the associated market mechanisms mean for your organisation.

The Electricity Market Reform (EMR) is the UK Government's ambitious programme to encourage the advancement of **three key objectives** through developing;

*“A clean, diverse and competitive mix of electricity generation that will ensure we meet our targets on renewable electricity and decarbonisation, and security of supply while keeping bills as low as possible for consumers now and in the future.”*

*Edward Davey,  
Secretary of State for Energy and Climate Change*



The EMR will provide incentives to raise £110billion of capital investment by 2020 to replace portions of the UK's electricity infrastructure that no longer meets new environmental standards, or is at the end of its working life, with a diverse mix of cleaner electricity generation. New fossil fuel powered stations are no longer a viable route for developing the energy market due to the Government's commitment to reduce CO<sub>2</sub> emissions by 50% by 2025 and a pledge for renewable energy generation to make up 15% of our total energy mix.

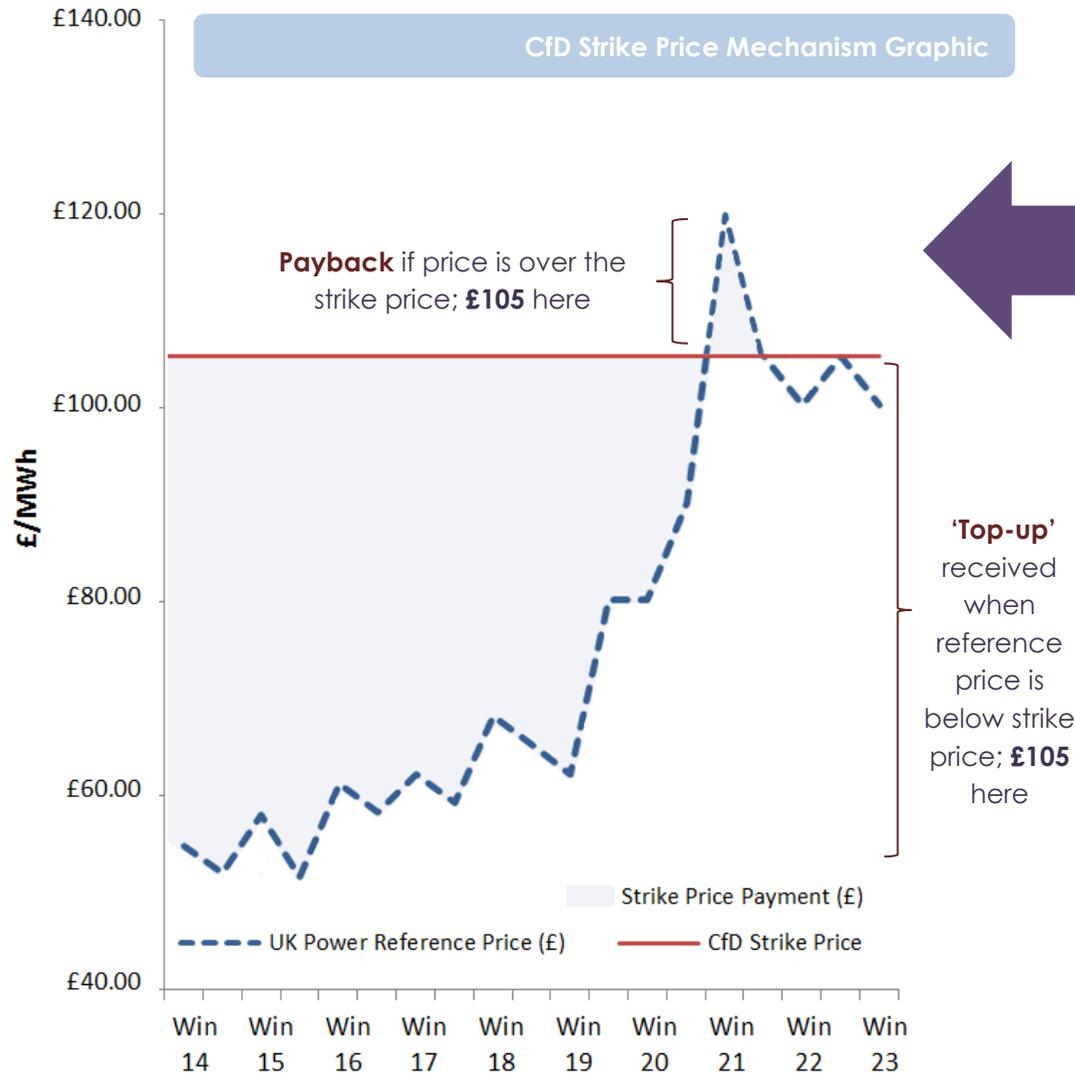
This policy investment therefore not only helps the UK meet our climate change commitments, but reduces our reliance on imported fossil fuels and places the UK market in a favourable position for clean energy investments. The EMR aims to protect the electricity market against the volatility of rising international gas prices and the increased possibility of power shortages across the grid.

The EMR will facilitate this investment through the development of two new market mechanisms;

- 1) **The Contract for Difference (CfD) – regulated by The Levy Control Framework (LCF)**
- 2) **The Capacity Market.**

## The Contract for Difference (CfD)

The Contract for Difference Mechanism, as explained in the adjacent table, is the EMR's instrument for securing a revenue stream for renewable infrastructure in the UK, set to commence in **April 2015**.



## CfD Mechanism

### Aim

Incentivise clean, low carbon electricity generation as a low risk investment, and remove the exposure of low carbon generators to volatile wholesale prices during the allocated CfD period.

### Achieved By

Low carbon generators will gain an additional fixed price for selling electricity to the grid on top of their normal selling revenue. This 'top-up' is called a Strike Price.

### How it will Work

Low carbon generators will be offered 15 year contracts throughout which they will receive the 'top up' revenue from the strike price allocated for each method of renewable energy generation.

If wholesale prices rise above the strike price the generator is required to pay back the difference.

### Raising the Strike Price Revenue

In order to raise revenue for the strike price costs, the CfD mechanism will be incorporated as a charge on electricity prices and hence bills – dependent on supplier this may be incorporated in the price per unit (kWh) or as a pass through charge.

CfD charges will run alongside the Renewable Obligation (RO) charge which is currently a part of your electricity bill, until 2017 when the CfD will replace RO.

### Who is required to pay CfD?

CfD is compulsory – whilst in theory it is funded by suppliers, electricity customers will see this new mechanism as a charge on their bills.

Energy Intensive users will be exempt from this charge to some extent.

### CfD Price Regulation

The Levy Control Framework (LCF) will control the cost of the CfD mechanism to customers. The LCF has set a **£7.6billion** (2012 real prices) ceiling on the combined cost of RO, CfD and small scale Feed in Tariffs.

CfD costs are projected to increase from approximately **£1/MWh** in April 2015 to **£10/MWh** by 2020.

## CfD Strike Prices

As a power consumer, CfD charges will be integrated (as part of the unit rate or as a pass through charge) into your electricity bills. These charges are expected to increase from **£1/MWh in April 2015 up to £10/MWh in 2020**.

The introduction of the CfD mechanism means that the Renewable Obligation (RO) charge becomes less significant and can eventually be phased out in 2017. The CfD mechanism reduces the actual cost of financing renewable projects, therefore enabling the delivery of low-carbon electricity generation at a lower cost than could be achieved through existing policy instruments, such as carbon pricing or RO.

### The Strike Prices will:

1. Provide the impetus for renewable electricity generation to make up **30%** of the UK energy mix **by 2030**.
2. Facilitate the construction of approximately **11GW** of wind (both off- and onshore) projects which have been granted planning consent, according to DECC.
3. Ensure customers will receive good value for money – the level of support (CfD charges) will remain within the LCF boundary and where savings can be made, **price strikes will be revised to reflect these savings**.

Project	Strike Prices £/MWh (2012 Prices)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Advanced Conversion Technologies (with/without CHP*)	155	155	150	140	140
Anaerobic Digestion (with/without CHP)	150	150	150	140	140
Biomass Conversion	105	105	105	105	105
Dedicated Biomass (with CHP)	125	125	125	125	125
Energy from Waste (with CHP)	80	80	80	80	80
Geothermal (with/without CHP)	145	145	145	140	140
Hydroelectric	100	100	100	100	100
Landfill Gas	55	55	55	55	55
Large Solar Photo-Voltaic	120	120	115	110	100
Offshore Wind	155	155	150	140	140
Onshore Wind	95	95	95	90	90
Scottish Islands Onshore				115	115
Sewage Gas	75	75	75	75	75
Tidal Stream	305	305	305	305	305
Wave	305	305	305	305	305

\*Combined Heat and Power

The prices shown are the maximum strike prices for projects commencing in the years shown.

## Capacity

Market Costs:  
£7-£20/MWh  
by 2018/19

# Capacity Market

The Capacity Market, as described in the adjacent table, intends to protect the consumer against supply shortages. A long-term reliability standard will generate a demand curve prior to each capacity auction. This reliability standard will also set a level of resource adequacy that the Capacity Market needs to deliver to ensure demand can be met. The Standard is expressed as a Loss of Load Expectation (LOLE) and the UK Electricity Market LOLE is currently **3 hours/year** – a system security level of **99.97%**.

Whilst wholesale prices are expected to **reduce by £5-£10/MWh** under the Capacity Market Mechanism, the actual costs of buying the capacity at auction could surpass these reductions. It is thought therefore that these additional costs could translate to an **extra charge of £7-£20/MWh for consumers from 2018**.

The Government will use the Capacity Market Mechanism as a route for financially incentivising permanent **Electricity Demand Reduction (EDR)**. The Government intends to begin a £20 million, 2 year pilot scheme for understanding how EDR measures can be incorporated into the Capacity Market beginning in Summer 2014. Secondary legislation regarding EDR will discuss its inclusion in capacity auctions – EDR is not eligible for the 2014 auction.

Participants of the Capacity Market are entitled to partake in other transitional arrangements, such as the National Grid's current **balancing services**, or **TRIAD** Avoidance methods. The baseline below which demand needs be reduced under the Capacity Mechanism is adjusted to account for balancing services, however not for TRIAD Avoidance. As such, it will be the decision of the provider whether to participate in both the Capacity Market and TRIAD avoidance.

## Capacity Market Mechanism

### Aim

Provide investors with the certainty they require to put sufficient reliable capacity in place, therefore ensuring that consumers are protected against the risk of power shortages.

### How this is achieved

The National Grid will forecast future peak demand and a competitive auction amongst capacity suppliers, the first of which is set to occur **in late 2014**, will contract the total amount of capacity required to ensure a secure supply in the future.

Providers (existing and new) who are successful at auction will enter a contractual commitment where they receive a predictable revenue stream for providing reliable capacity, and potential rewards for over-delivery. They will be requested to provide capacity when required or else incur financial penalties.

### Balancing the Supply

Auctions will be annual for a delivery period four years in advance, i.e. the 2014 auction is for **a 2018/19 delivery**. There will be Year Ahead auctions to ensure that any capacity shortfalls are 'topped up' and allow Demand Side Response (DSR) participants to enter on level playing field alongside capacity providers.

DSR auctions begin in 2015/16 and will entail a contractual agreement split into **two stages**; 1) reduce capacity at specific times of day or face penalties which are constrained; 2) capacity will not be 'time branded' allowing DSR to gradually fully integrate with the Capacity Market.

### Secondary Market

Capacity agreements secured at auction can be traded, hence creating a secondary market. This enables risk management by adjusting their obligations appropriately. It is thought that secondary trading provides opportunities for technologies with short lead times.

Plants currently receiving RO, CfD, FIT, RHI, and co-firing plants (receiving ROCs) are all excluded from participation in all Capacity Market activity.

### Funding Capacity Payments

Capacity payment costs will be shared between electricity suppliers within the **TRIAD periods** of that delivery year. These will be based on their forecasted market share of peak demand during these periods.

The Capacity Market is currently not included in the LCF as expenditure will not begin until 2018. Once there is more certainty a separate budget will be set based on the size of the levy.

## Supporting Mechanisms

The two mechanisms discussed, Contracts for Difference (CfD) and the Capacity Market, will be supported by the following;

### The Carbon Price Floor

Introduced in April 2013, this is a tax which ensures generators pay for their carbon emissions within the UK. Prices follow those published for the EU Emission Trading Scheme (ETS) and look to provide an impetus for low-carbon investment.

### Emissions Performance Standard (EPS)

The EMR has confirmed an EPS will be served on new fossil fuel plants, with an electric capacity of 50MW or higher, to limit their annual carbon emissions. This represents an annual CO<sub>2</sub> baseload limit of 450g/kWh.

### Electricity Demand Reduction (EDR)

The EMR details actions to promote and incentivise Electricity Demand Reduction. The pilot scheme discussed will provide a testing space for the development of more complex aspects of the EDR final scheme.

### Market Liquidity

Ofgem are finalising actions to improve market liquidity, for example market liquidity is increased by generators being able to trade capacity in a secondary market. The Capacity Market is expected to **run for 10 years** from implementation, and it is hoped that during this period Ofgem's market liquidity strategies, alongside an active demand side and increased interconnectivity, will develop the underlying electricity market.

### Transitional Arrangement Divisions

These involve arrangements for the transition between Renewables Obligation (RO) and the CfD, and measures to improve the route to market for potentially smaller independent renewable generators. Alongside this, there are efforts to build up the **Demand Side Balancing Reserve (DSBR)** which would enable consumers to offer demand reduction services to the National Grid. Final Investment Decision Enabling for Renewables (**FIDeR**) are another arrangement, these seek to avoid an 'investment hiatus'.

## Real Impact for Your Organisation

DECC have predicted that in comparison to the UK market following a trajectory of an existing policy instrument ('the counterfactual') the EMR performs favourably for UK consumers. Customers are expected to benefit from the EMR in **3 key ways**;

- 1) Dampen the influence of volatile fossil fuel prices on your electricity bills;
- 2) Reduces the risk of expensive supply shortages;
- 3) Low carbon generation should be supported more cost effectively.

**Despite** DECC's calculation that compared the 'counterfactual' situation, EMR will in fact save the average business 7-8% on their electricity during the period of 2014-2030 **the EMR support costs (CfD and the Capacity Market) will present themselves as net increases on your bills**. CfD charges are due to come into effect in April 2015, whilst the Capacity Market charges will not be seen until 2018. Suppliers will each handle the CfD charge differently which means that you may see the CfD charge as a **separate line on your bill**, or it will be **incorporated straight into your unit rate**. This means that all electricity contracts running past April 2015 will incur this new charge.

Capacity Market

Costs: £7-  
£20/MWh by  
2018/19

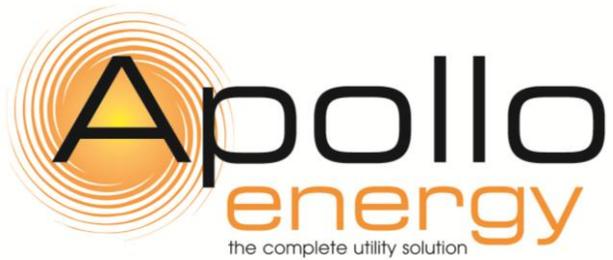
CfD Costs:  
£10/MWh by  
2020

Total EMR Cost:  
£13-£25/MWh by  
2020

### Mitigating the Costs of EMR on your business

There are several ways you can reduce the impact of the EMR on your business and gain cost certainty for the future – the most obvious, and perhaps simplest of which is to use your **electricity more efficiently** and consume less. Energy use is one of your operating expenses that can be easily controlled through some simple measures that produce both financial and environmental rewards. There are low cost and in cases, no-cost, energy efficiency measures that can be implemented around the office.

Alongside simpler reduction methods your business can mitigate EMR costs for example reducing grid consumption or through avoiding TRIAD periods. Alongside this, the efforts to build up DSBP would enable some consumers to offer demand reduction services to the National Grid.



For more details or any queries on how the EMR will affect your organisation or how you can mitigate the impacts of rising electricity bills please get in touch with a member of our team on 01257 239500 or email us at [enquiries@apolloenergy.co.uk](mailto:enquiries@apolloenergy.co.uk)

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