



Department
of Energy &
Climate Change

Electricity Market Reform: Delivering UK Investment

June 2013



Electricity Market Reform: Delivering UK Investment

Presented to Parliament
by the Secretary of State for Energy and Climate Change
by Command of Her Majesty

June 2013

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Introduction

1. Electricity Market Reform (EMR) will deliver the greener energy and reliable supplies that the country needs, at the lowest possible cost. It will transform the UK electricity sector to one where low-carbon can compete with conventional, fossil-fuel generation – ensuring we build the right mix of generation for the long-term.
2. Around a fifth of our power stations are due to close over the coming decade and consumers are facing rising energy costs due to growing dependence on uncertain supplies of imported fossil fuels, so now is the time to move towards a diverse and low-carbon electricity mix.
3. This presents a huge opportunity for growth and jobs, with EMR designed to unlock up to £110 billion investment in our electricity infrastructure and support up to 250,000 jobs during this decade alone. The electricity sector is one of the biggest areas in the UK economy for investment over this decade and the Government is keen to support industry to maximise this potential. This is why we have brought forward the key announcements that will give industry the early certainty they need on EMR to begin planning major capital investments in the UK and its supply chain.

Delivering UK Investment

Ensuring reliable electricity supplies for consumers

4. The country faces increasing risks to providing secure and reliable electricity supplies. New capacity is needed to replace retiring coal, nuclear and older gas power stations – which have historically provided us with significant amounts of predictable and flexible generation. It is therefore crucial that we deliver new investment, and that the market brings this forward in a world where we move to a more diverse portfolio of generation such as new nuclear power, onshore and offshore wind, and gas. The amount of gas capacity we will need to call on at times of peak demand will remain high, with potentially significant amounts of new gas generating capacity required by 2030. Other forms of capacity – such as demand side response¹ – also have significant potential to ensure we continue to enjoy secure supplies.
5. This is why the Government has today set out further details about the proposed Capacity Market – including how and when it will run – which will provide steady payments to incentivise a range of reliable forms of capacity such as gas-fired generation and demand-side response. In particular we are announcing to investors that, subject to state aid approval, we will run the first capacity auction in 2014 which will result in construction of new capacity that will be available from 2018/19. We are also continuing to explore how projects that result in permanent reductions in electricity demand can participate in the Capacity Market and the Government has announced that funding will be available for a pilot.
6. Further detail on this and the detailed design of the Capacity Market has been published today², along with announcements from Ofgem and National Grid on future electricity

¹ Where large electricity users reschedule or temporarily reduce their demand for electricity.

² <https://www.gov.uk/government/publications/electricity-market-reform-capacity-market-proposals>

margins (including measures to address potential short and medium-term risks, ahead of the Capacity Market delivering new reliable capacity towards the end of this decade).

Tackling climate change through investment in low-carbon generation

7. To bring forward the billions of pounds of investment needed in new, low-carbon electricity generation and associated network infrastructure, the Government is publishing key information on Contracts for Difference (CfDs).
8. CfDs provide efficient and long term support for low carbon generation – including nuclear, renewables and carbon capture and storage – reducing risks faced by generators by increasing revenue certainty and through the backing of a long-term contract. Generators will receive revenue from selling their electricity into the market as usual, but will also receive a top-up to a pre-agreed ‘strike price’. Conversely, if the market price is higher than the strike price then the generator must pay back the difference, which reduces costs to consumers when electricity prices are high.
9. The CfD reduces costs to developers of financing a project, by reducing exposure to volatile wholesale prices and reducing project risks. It also provides investors with a familiar legal framework by establishing a CfD as a private law contract, with a single Government-owned counterparty that can raise money from electricity suppliers.
10. For CfDs to deliver their huge potential for growth, developers and investors need to know the strike prices and key contract terms that affect risk and value – such as contract length, change in law protection and inflation indexation. This will support timely investment decisions and allow developers to make financial commitments which will deliver benefits across the UK and to local supply chains. Announcements on these crucial areas are set out below, along with other important updates.

CfD strike prices

11. We have today published the draft strike prices for renewables technologies that help achieve the Government’s objectives on renewables and low-carbon generation. They enable a technology mix that is value for money for consumers, along with the upper limits on annual spending on low-carbon generation (including CfDs, the Renewables Obligation and the small scale Feed-in Tariff) as agreed in the Levy Control Framework³. The draft strike prices are set out in Appendix A and are informed by analysis from National Grid, who assessed the impact of different strike prices on the Government’s objectives of tackling climate change, ensuring security of supply and minimising costs to consumers.
12. The strike prices for key technologies come down over time showing that as technology costs come down, consumers will be paying less. These strike prices are set to be consistent with the Renewables Obligation⁴ levels of support (though adjusted down as the CfD protects the investor against additional risks), allowing continuity and continued investment in the renewable energy industry. They will enable over 30% of Britain’s electricity to come from renewable energy sources by 2020.
13. A Panel of Technical Experts was appointed to scrutinise National Grid’s analysis and its report will be published in July, alongside consultation on the draft EMR Delivery Plan which

³ The mechanisms and headroom arrangements underpinning the Levy Control Framework remain unchanged.

⁴ The existing support scheme for large-scale renewable generation.

will set out more detailed information on the draft strike prices. The Panel was appointed in February 2013⁵. Since then, the Panel has been working alongside National Grid and reporting informally to DECC throughout the analytical process to enable them to scrutinise the analysis.

14. The conversion from the level of support under the Renewables Obligation into a CfD price takes into account a number of elements. This includes the current projections for wholesale prices; the level of support being for 15 years as opposed to 20 years (except in certain cases such as biomass conversion); the indexation to the Consumer Price Index (as opposed to the Retail Price Index); Power Purchase Agreement terms; the effective tax rate of an average developer; and the lower cost of capital as a result of the increased price certainty afforded by the CfD.

CfD contract terms: decisions on approach

15. We have worked with developers and investors on the design of the CfD, to ensure it provides a robust legal framework against which to secure investment in the UK. Today we are publishing, at Appendix B, our approach to the key terms which will form the basis for the final CfD contracts, the drafting of which will be discussed with stakeholders over the summer.
16. As well as providing the necessary safeguards and assurances for industry – such as protections against changes in law that target a particular project or technology – the contract will provide value for money for consumers by reducing the overall costs of attracting investment and by including provisions to ensure the timely construction of low-carbon generation.

Building the UK supply chain

17. The Government has been working with industry to produce three outward facing Energy Industrial Strategies. These will ensure innovative and cost competitive supply chains are able to develop in time to serve growing parts of the energy industry, and will ensure that the UK sees a wider economic benefit associated with the investment coming forward in the electricity sector – building on consumer support for low carbon technologies.
18. The nuclear and oil and gas industrial strategies have been published⁶, and we will publish the offshore wind industrial strategy in mid-July. The Government is looking to developers to engage proactively with the supply chain, and where possible design their projects in a manner that supports the development of a sustainable and competitive supply chain, with potential to reduce costs in the medium/long term.

Supporting early renewables projects

19. To facilitate support for early renewables projects, we have today published a second update on the Final Investment Decision Enabling for Renewables project⁷. This signals the start of

⁵ Details of the Panel members and their terms of reference are available at:

<https://www.gov.uk/government/news/new-appointments-announced-to-decc>

⁶ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/175480/bis-13-748-uk-oil-and-gas-industrial-strategy.pdf

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/168048/bis-13-627-nuclear-industrial-strategy-the-uks-nuclear-future.pdf

⁷ <https://www.gov.uk/government/publications/increasing-certainty-for-investors-in-renewable-electricity-final-investment-decision-enabling-for-renewables>

the process for renewable electricity developers experiencing investment hiatus to apply for Investment Contracts (an early form of CfD). It sets out the process and indicative timetable for developers to apply for Investment Contracts, as well as details of the evaluation criteria which they will be assessed against.

Trading renewable electricity: Government response to call for evidence

20. The Government is looking at how to enable industry to export renewable electricity out of the UK, as well as enabling it to be imported from qualifying generators. A Call for Evidence was launched in April 2012 and our response to this has now been published on DECC's website⁸. This:
- recognises that importing electricity could be an attractive opportunity with much potential;
 - confirms that Government is minded to take up some level of physical trading so long as it can be made to work; and
 - outlines the further actions it is taking in order to overcome barriers to trade in renewable energy.
21. Final decisions will be announced at the end of the year.

Keeping electricity bills down and protecting the consumer

22. Electricity Market Reform is good for the consumer. As well as reducing the exposure to volatile and rising fossil fuel prices, the CfD ensures that generators pay back when the price of electricity goes too high; this makes it more efficient at delivering low-carbon generation. CfDs will make it cheaper to deliver low-carbon generation by around £5 billion up to 2030⁹ because they will deliver cost of capital reductions that cannot be achieved through existing policy instruments. The wider benefits of CfDs will be considered in the next revision of the EMR Impact Assessment (as set out below).
23. The most recent Impact Assessment¹⁰ estimated average annual household electricity bills to be 6-8% (£38 – £53) lower over the period 2016 to 2030 under EMR, compared to decarbonising through existing policy instruments. Our analysis is being updated to take into account the draft strike prices published in this document, including the price and bill savings for different types of consumer, and a further Impact Assessment will be published alongside the draft EMR Delivery Plan in July.
24. The overall support will reduce over time, as reflected by the draft strike prices (see Appendix A), to take into account the cost reductions we expect to see as a technology becomes more mature. This will ensure that support is targeted only where it helps a technology to become competitive, and maximises value for consumers.

⁸ <https://www.gov.uk/government/publications/response-to-call-for-evidence-on-renewable-energy-trading>

⁹ This captures the impact of a reduced cost of capital under CfDs. Net Present Value up to 2030 (in 2012 prices).

¹⁰ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/197904/cfd_ia_may_update.pdf

Next Steps

25. Over the coming months we will continue to work with developers and other stakeholders on the development of Electricity Market Reform. We will publish the draft EMR Delivery Plan for consultation in July, including information on the methodology and analysis behind the draft CfD strike prices, as well as the proposed draft reliability standard which will inform the level of capacity to contract through the Capacity Market. A ten-week consultation will begin following the publication of that document.
26. We will engage with stakeholders through a number of workshops to be held over the summer during the consultation period – details of which will be published on DECC's website. These interactive sessions will be held to explain the way we have arrived at our proposed strike prices in more detail and provide an opportunity for stakeholders to ask questions before finalising any written responses they may wish to make to the consultation.
27. Final strike prices will be set in December 2013 (subject to state aid and Royal Assent of the Energy Bill). We will also confirm the level of the reliability standard for the Capacity Market at this point.
28. We will publish further detail on the CfD contract terms in early August, including draft contract terms for all the key terms which go to the value of the CfD contract. At the same time, we will set out more detail on the allocation of CfDs, and the Government response to the call for evidence on the CfD supplier obligation. We will engage with interested stakeholders on the detailed drafting of the CfD contract, with two events in August to seek views. The final contract drafting will be published in December alongside the final strike prices, and implemented through regulations laid before Parliament in 2014.
29. In parallel, the Government will consult on the secondary legislation for the implementation of EMR from October this year. The EMR programme is on track to be implemented in 2014, with the first CfDs under the generic regime expected to be signed in the second half of 2014, and the first capacity auction at the end of 2014.
30. Finally – alongside the draft EMR Delivery Plan – we will publish a consultation on the transition arrangements from the Renewables Obligation, the current support mechanism for large-scale renewable generation, to CfDs. These arrangements will ensure that this transition is smooth and straightforward for investors and developers, maintaining confidence in the support landscape.
31. The announcements in this document are subject to state aid approval. The Government is in discussion with the European Commission to secure this.

Devolution

32. EMR will benefit consumers in all parts of the UK – delivering green growth and jobs, reliable supplies of electricity and at least cost. It will provide a consistent and integrated framework for investors, which is essential if we are to attract the private capital we need.
33. The draft strike prices published for consultation are underpinned by analysis conducted by DECC, National Grid and the System Operator Northern Ireland (SONI), and analysis has been shared and discussed with the Devolved Administrations through the Devolved Administration Consultation Group. We will continue to develop this engagement before the strike prices are set in the final Delivery Plan. We will also be seeking to agree a

Memorandum of Understanding on how the UK Government and Devolved Administrations will work together on EMR on an ongoing basis.

34. Following a joint research project with the Scottish Government on how to support renewables on Scottish islands, we are committed to taking forward work to consider how to provide additional support. The strong emerging option is to provide a separate strike price for renewables projects located on such islands (where these have clearly distinct characteristics to typical mainland projects). We expect further consideration of this emerging option to feed into a consultation on this issue in the summer. This consultation will consider what level of additional support would be appropriate, as well as deliverability, the potential impact on deployment, and affordability. We will take forward this work in time to allow a differential strike price to be set for these projects in the final Delivery Plan in December.
35. We will continue to work with Department of Enterprise, Trade and Investment in Northern Ireland on their decision on applying these strike prices in Northern Ireland, thus enabling a coherent UK-wide system for supporting low-carbon generation.

APPENDIX A: Levy Control Framework and Draft CfD Strike Prices

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Renewable Technology	Levy Control Framework – Upper Limits on Spend (£m) (2011/12 prices) ¹¹							Potential 2020 Deployment Sensitivities (subject to Vfm and cost reduction) (GW) ¹²
	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	
	Draft Strike prices (£/MWh) (2012 prices)							
	3,300	4,300	4,900	5,600	6,450	7,000	7,600	
	2014/15	2015/16	2016/17	2017/18	2018/19	2018/19		
Advanced Conversion Technologies ¹³ (with or without CHP ¹⁴)	155	155	150	140	135			c. 0.3
Anaerobic Digestion (with or without CHP)	145	145	145	140	135			c. 0.2
Biomass Conversion ¹⁵	105	105	105	105	105			1.2 – 4
Dedicated Biomass (with CHP) ^{16 17}	120	120	120	120	120			c. 0.3
Energy from Waste (with CHP) ¹⁸	90	90	90	90	90			c. 0.5

¹¹ Control totals for the Levy Control Framework will be set in nominal terms at the relevant Spending Review.

¹² Dependent on industry cost reductions over time – figures are not Government forecasts and do not include deployment supported under the small-scale Feed-In Tariff. The upper end of the offshore wind range is reached if costs come down to meet industry aspirations and there is some delay to nuclear and CCS build out.

¹³ Standard and advanced gasification and pyrolysis, including advanced bioliquids.

¹⁴ Combined Heat and Power.

¹⁵ Based on biomass contracts ceasing to pay in 2027.

¹⁶ The policy of whether and how dedicated biomass will be supported under CfDs will be confirmed within the draft EMR Delivery Plan, published in July 2013.

¹⁷ The draft strike price is based on the assumption that Dedicated Biomass CHP generators can apply for the current (1p/kWh) Renewable Heat Incentive (RHI) large biomass tariff. This assumption also applies to other technologies with CHP. Revised RHI tariffs were consulted on in September 2012 and a Government response is pending. DECC may adjust the Dedicated Biomass CHP strike price (and other technologies with CHP) once RHI tariffs have been confirmed.

¹⁸ Energy from waste without CHP is not supported under CfDs, which is consistent with the position under the Renewables Obligation.

Geothermal (with or without CHP) ¹⁹	125	120	120	120	120	120	< 0.1
Hydro ²⁰	95	95	95	95	95	95	c. 1.7
Landfill Gas	65	65	65	65	65	65	c. 0.9
Offshore Wind	155	155	150	140	135	135	8 – 16
Onshore Wind	100	100	100	95	95	95	9 – 12
Sewage Gas	85	85	85	85	85	85	c. 0.2
Large Solar Photo-Voltaic	125	125	120	115	110	110	2.4 – 3.2
Tidal Stream ²¹	305	305	305	305	305	305	c. 0.1
Wave ²²	305	305	305	305	305	305	

Notes:

- Further detail will be published in July, as part of consultation on the draft EMR Delivery Plan.
- Expected deployment under these strike prices is broadly consistent with deployment scenarios presented in the Renewables Roadmap²³ and reflects new cost assumptions and the growth figures announced at Budget 2013. They are subject to change prior to public consultation in July 2013, as part of the draft EMR Delivery Plan.

¹⁹ The proposed strike prices for geothermal have been set with the aim of giving equivalent returns from investment as could be accrued under the RO. The Government has commissioned an external report on the potential of geothermal power in the UK – due to conclude in July – and its findings will be incorporated in setting the final strike prices.

²⁰ For larger hydro projects, DECC will consider how best to price CfDs and the appropriate length of contracts on a case by case basis, similar to the proposed approach for Tidal Range.

²¹ The strike prices for Tidal Stream and Wave are intended for the first 30 MW capacity of any project. For higher capacity projects, support for the additional MW will be set at the offshore wind strike price.

²² As per previous footnote.

²³ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/80246/11-02-13_UK_Renewable_Energy_Roadmap_Update_FINAL_DRAFT.pdf

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- There is no published strike price for Tidal Range. Instead, given the lack of cost data available, DECC will consider how best to price CfDs and the appropriate length of contracts for tidal range projects on a case by case basis.
 - Please note that there are 14 published strike prices, in contrast to the 35 Renewables Obligation (RO) support bands for renewables. In some cases, we are offering one strike price to cover two or more support bands under the RO, as we are moving away from having more than one support level for a single technology. In addition, we are not offering strike prices for a number of RO technologies at the present time, for example due to sustainability reasons.
 - Some technologies are offered the same strike price whether or not they are Combined Heat and Power (CHP) projects, as noted in the table above. CHP projects will also receive support and revenue for the heat element of their generation, therefore overall they will receive greater support than non-CHP generators. This is intended to incentivise CHP generation.

APPENDIX B: Policy on CfD Terms

CfD Term	Description	Decision
Contract term	Length of the contract from point project is commissioned (i.e. starts generating).	<p>Contract length standardised, but flexibility to adapt to technology requirements</p> <ul style="list-style-type: none"> Renewables projects (under the 'standard' allocation mechanism) – 15 years of payments. Biomass conversion – all contracts cease to pay in 2027 (regardless of start date), consistent with the approach under the Renewables Obligation and reflecting the transitional nature of the technology. Flexibility for the Secretary of State to adjust contract term for projects where technology justifies a different duration (e.g. nuclear, CCS, tidal range and potentially large hydro projects).
Inflation indexation	How strike prices are adjusted for inflation.	<p>Index-linked payments</p> <ul style="list-style-type: none"> Strike price fully indexed 100% to Consumer Price Index (CPI) throughout entire term.
Reference price	The difference payments are based on the difference between the reference price (a measure of the electricity market price) and the strike price.	<p>Payments based on a reliable measure of the market price</p> <ul style="list-style-type: none"> Intermittent technologies (e.g. wind) – hourly day-ahead price. Baseload technologies (e.g. nuclear) – season-ahead price, moving to year-ahead price when conditions allow.

<p>Refinancing</p>	<p>Whether to include any arrangements to recover higher returns from project refinancing.</p>	<p>Developers free to recycle capital, consumers protected by price-setting process</p> <ul style="list-style-type: none"> • No refinancing clause in the generic CfD contract. • Bilaterally negotiated CfDs for large projects may have different approaches, including possible refinancing clauses.
<p>Change in law and other adjustments</p>	<p>Protections given to developers against certain changes in law.</p>	<p>Developers protected against changes in law that target a project, technology or the CfD</p> <ul style="list-style-type: none"> • Compensation available for material and unforeseeable changes in law that uniquely target specific technologies, individual projects or CfD holders as a group. • Protection also covers political decisions to shut down a generator, and general changes in law that have discriminatory effects without objective justification. • Protection extends to such changes in law that limit a generator's ability to either deliver its output or to receive appropriate payment. • Compensation will adjust strike prices to reflect 100% of operating costs, a proportion of capital costs (tapering over time) and for lost revenues, over the term of the CfD. • Protection against certain changes in network charges, relating to the costs of the balancing system and transmission losses.

Capacity adjustment	Amount by which a developer can reduce the project capacity (with and without penalty) between applying for a CfD and commencement of payment.	<p>Developers provided with flexibility to vary their plans</p> <ul style="list-style-type: none"> • Developers may vary capacity to a certain limited degree above or below their original proposal, without penalty. Developers will be able to exercise part of this flexibility before and part after construction. • Further flexibility provided to reduce capacity delivered beyond this level, but with a reduction to the strike price, to encourage accurate planning and prevent over-allocation of the available budget for CfDs.
Conditions precedent etc.	Parameters to ensure project delivery.	<p>Developer flexibility to deliver within a ‘commissioning window’</p> <ul style="list-style-type: none"> • Payments commence once specified standards are met relating to connection, metering, capacity instalment, and contract payment/collateral requirements. • Satisfaction of conditions precedent outside of the target commissioning window leads to a reduction in the contract’s payment term. Failure to satisfy by the long stop date could lead to termination.
Force Majeure	Criteria for when flexibility will be allowed on a developer’s contractual obligations.	<p>Protection against events outside of the control of the developer</p> <ul style="list-style-type: none"> • Force Majeure will allow relief for circumstances beyond a developer’s control (which will include a ‘reasonable and prudent operator test’). • Additional flexibility where connection delays are caused by network operator.
Dispute resolution	Mechanism for resolving contractual disputes.	<p>Clear process to resolve disputes in a timely manner, including with binding arbitration</p> <ul style="list-style-type: none"> • Developer and CfD Counterparty will seek to agree informal resolution of disputes, but with access to external, legally binding determination of disputes. • Government has no contractual right to impose settlements.

Termination	Circumstances when contract can be terminated.	<p>A proportionate approach to contract enforcement</p> <ul style="list-style-type: none"> • Includes material breaches of contract by generators – such as, non-payment, fraud and non-delivery of capacity (subject to Force Majeure or delay to grid connection). • Measures that encourage generators to move back into compliance with the contract e.g. ‘remediation plans’ and payment suspension.
Metering arrangements	How low-carbon electricity generation is recorded for the purposes of billing.	<p>Arrangements to support a wide-range of project types, using existing processes where possible</p> <ul style="list-style-type: none"> • Loss adjusted net metered energy. • Making use of existing settlement arrangements, where possible. • Arrangements will be developed for transmission, distribution and private wire generation.

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