



Department  
of Energy &  
Climate Change

# Electricity Market Reform: policy overview

November 2012





## **ELECTRICITY MARKET REFORM: POLICY OVERVIEW**

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

November 2012

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# Introduction

## Energy Bill and Electricity Market Reform (EMR)

1. The Government has three objectives for energy policy - to keep the lights on, to keep energy bills affordable, and to decarbonise energy generation. The Energy Bill is central to meeting all of these objectives.
2. Today, the Government is introducing the Energy Bill into Parliament to implement the key aspects of Electricity Market Reform (EMR) as well as making a wider range of reforms. The Bill, through EMR, will drive the £110 billion of investment<sup>1</sup> we need in the electricity sector by 2020, to ensure reliable, diverse and low-carbon power. These reforms are vital – we have already seen significant power plant closures in the last two years; around a fifth of capacity available in 2011 has to close by the end of this decade; and demand for electricity is set to increase as major sectors such as transport and heat are electrified. It is clear that without action the current market will not deliver the investment required.
3. This is a major challenge - the level of investment needed is the equivalent to that required to build 20 Olympic stadiums a year from now until 2020. But it provides a huge opportunity to contribute to long-term growth. The reforms the Government is introducing today will ensure that we continue to have secure electricity supplies which are affordable for consumers, and will play a major role in helping us meet our climate change goals.
4. The Government is also mindful of the key role played by the demand side in meeting our objectives in the most cost-effective way. We are consulting on options to drive reductions in electricity demand which will save consumers and businesses money and reduce the scale of the required investment.
5. Energy investment also represents a major opportunity to deliver sustainable growth. Energy projects represent the largest infrastructure programme across the UK. Investing in major infrastructure projects such as offshore wind farms, new nuclear power stations, gas fired power stations and Carbon Capture and Storage (CCS) equipped generation plant will drive growth, jobs and skills for these sectors.
6. This investment is vital to rebuilding and rebalancing the UK economy and there is an opportunity to develop the domestic supply chain to enable it to help deliver our energy needs, support jobs and stimulate economic growth. The Government will ensure that these investments develop manufacturing in the UK as part of the implementation of EMR, by

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<sup>1</sup> Government analysis shows that around £75 billion could be needed in new electricity generation capacity, and Ofgem's 'Project Discovery' estimated that around £35 billion of investment is needed for electricity transmission and distribution.

looking for ways to maximise UK economic benefit and to help UK companies compete for the opportunities created. EMR reforms could help support as many as 250,000 jobs in the energy sector.

7. It is important that the Government makes quick progress on implementing these reforms to give investors certainty and to allow a large number of new plants to come forward, to support energy security, and to reduce the overall cost to consumers of making this important transition. The introduction of the Energy Bill today is a significant step forward.

## Background

8. The Government set out its intention to reform the electricity market in the EMR White Paper<sup>2</sup> (July 2011) and the EMR Technical Update<sup>3</sup> (December 2011). In May 2012, the Government published the draft Energy Bill.<sup>4</sup> This was scrutinised by the House of Commons Energy and Climate Change (ECC) Committee<sup>5</sup> and a group of members of the House of Lords<sup>6</sup>, and a report from each group was published in July 2012.
9. This thorough scrutiny has helped refine the EMR proposals and amend the Energy Bill ahead of its introduction today. Today, alongside the Introduction of the Bill, we are publishing the Government Response<sup>7</sup> to the Energy and Climate Change Committee's pre-legislative scrutiny report on the draft Energy Bill.
10. Alongside the Bill, we are also publishing updates which set out more details on the Government's proposals on the delivery of EMR<sup>8</sup>, and as part of DECC's Electricity Demand Reduction Project, we have published a consultation document on options to encourage more efficient electricity use.<sup>9</sup>
11. The EMR publications are also being published alongside a number of other Government reports which together set out our overall energy objectives. These are:
  - Energy Security Strategy<sup>10</sup>;
  - Statutory Security of Supply Report<sup>11</sup>;
  - Annual Energy Statement<sup>12</sup>.

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<sup>2</sup> [http://www.decc.gov.uk/en/content/cms/legislation/white\\_papers/emr\\_wp\\_2011/emr\\_wp\\_2011.aspx](http://www.decc.gov.uk/en/content/cms/legislation/white_papers/emr_wp_2011/emr_wp_2011.aspx)

<sup>3</sup> [http://www.decc.gov.uk/en/content/cms/legislation/white\\_papers/emr\\_wp\\_2011/tech\\_update/tech\\_update.aspx](http://www.decc.gov.uk/en/content/cms/legislation/white_papers/emr_wp_2011/tech_update/tech_update.aspx)

<sup>4</sup> [http://webarchive.nationalarchives.gov.uk/20121025080026/http://www.decc.gov.uk/en/content/cms/meeting\\_energy/markets/electricity/electricity.aspx](http://webarchive.nationalarchives.gov.uk/20121025080026/http://www.decc.gov.uk/en/content/cms/meeting_energy/markets/electricity/electricity.aspx)

<sup>5</sup> <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmenergy/275/27502.htm>

<sup>6</sup> <http://www.official-documents.gov.uk/document/cm83/8362/8362.asp>

<sup>7</sup> <http://www.decc.gov.uk/en/content/cms/legislation/energybill2012/energybill2012.aspx>

<sup>8</sup> Annex A: CfD Operational Framework; Annex B: CfD Heads of terms; Annex C: Capacity Market: Design and implementation update; Annex D: Institutional Framework: Delivering EMR; Annex E: Institutional Framework: delivery plan; Annex F: EMR Indicative Implementation Roadmap .

[http://www.decc.gov.uk/en/content/cms/meeting\\_energy/markets/electricity/electricity.aspx](http://www.decc.gov.uk/en/content/cms/meeting_energy/markets/electricity/electricity.aspx)

<sup>9</sup> [http://www.decc.gov.uk/en/content/cms/consultations/edr\\_cons/edr\\_cons.aspx](http://www.decc.gov.uk/en/content/cms/consultations/edr_cons/edr_cons.aspx)

<sup>10</sup> [http://www.decc.gov.uk/en/content/cms/meeting\\_energy/en\\_security/en\\_security.aspx](http://www.decc.gov.uk/en/content/cms/meeting_energy/en_security/en_security.aspx)

<sup>11</sup> [http://www.decc.gov.uk/en/content/cms/meeting\\_energy/en\\_security/sec\\_supply\\_rep/sec\\_supply\\_rep.aspx](http://www.decc.gov.uk/en/content/cms/meeting_energy/en_security/sec_supply_rep/sec_supply_rep.aspx)

<sup>12</sup> [http://www.decc.gov.uk/en/content/cms/meeting\\_energy/aes/aes.aspx](http://www.decc.gov.uk/en/content/cms/meeting_energy/aes/aes.aspx)



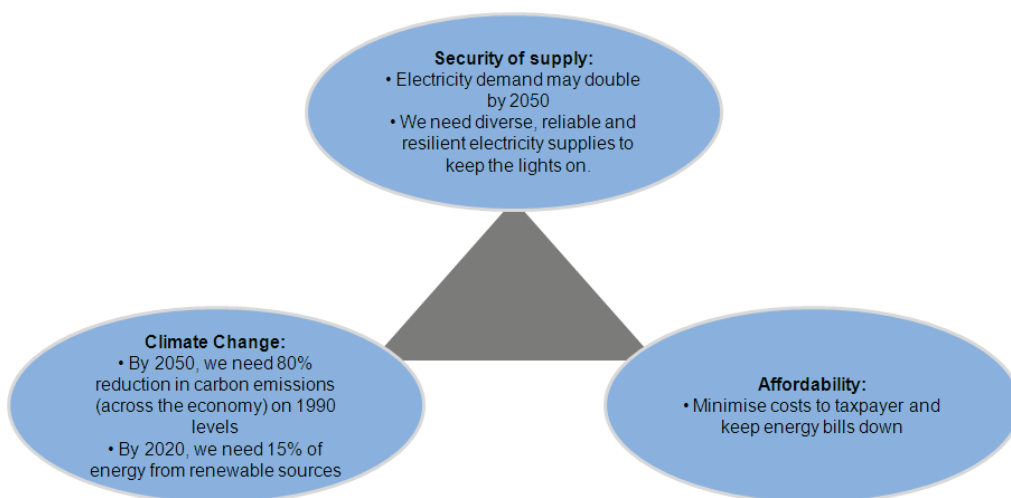
# Objectives

## Our overall energy objectives

12. The Government’s energy and climate change goals are to deliver secure energy on the way to a sustainable low carbon future and drive ambitious action on climate change at home and abroad. It is critical that we address both security of supply and climate change challenges, while maximising the benefits and also minimising costs for consumers and other potential negative impacts. Nowhere in our energy policy are these challenges more evident than in the electricity sector.

## The challenge

**Figure 1:** The Government’s objectives for the electricity system mirror those for the wider energy system



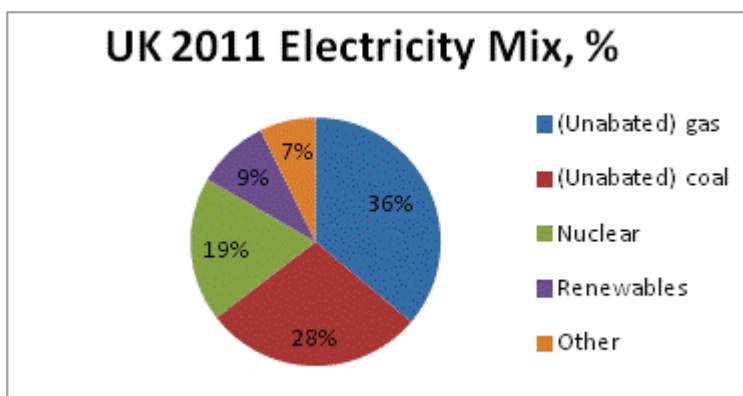
13. Since electricity privatisation, the current electricity market has worked well, delivering reliable and affordable power. It has been adapted to meet individual new challenges, for example with Renewables Obligation Certificates (ROCs) to support the development and early deployment of new renewable technologies. Yet the current market will not deliver the huge investment necessary to meet new challenges.

14. Around a fifth of 2011’s total electricity generation capacity is set to close by the end of the decade and much of the capacity built to replace it will be increasingly intermittent such as wind, or inflexible such as nuclear. Moreover, demand for electricity is set to increase over the coming decades as major sectors such as transport and heat are electrified.
15. The electricity sector is expected to play a key part in decarbonisation. The December 2011 Carbon Plan<sup>13</sup> states that during the 2020s, cuts in emissions from the power sector are necessary to keep us on a cost effective path to 2050. Under the current market, the cost profile of fossil fuel plant – with lower upfront costs but higher ongoing costs than typical low-carbon plant – combined with the price-setting role of fossil fuel plant, makes investment in low-carbon generation inherently more risky.
16. There are uncertainties in the underlying economics of all forms of electricity generation. Every form of electricity generation comes with risks over its price, security and delivery - from uncertainty over the long term price of gas, to the speed at which renewable technologies can reduce their costs, the race to make Carbon Capture and Storage (CCS) commercially viable, and the challenge of building a new generation of nuclear reactors.
17. Given these risks, the Government’s view is that we cannot rely on any single form of generation and instead we should pursue a portfolio approach, leading to a diverse mix that balances the risks and uncertainties of different technology options.

### Current UK electricity mix and possible future pathways

18. The UK’s current electricity mix is dominated by gas and coal fired plant, as Figure 2 demonstrates. There has also been a significant increase in the amount of electricity generated by renewable technologies in the last few years.

**Figure 2:** Electricity Mix in 2011 by Generation<sup>14</sup>.



<sup>13</sup> [http://www.decc.gov.uk/en/content/cms/tackling/carbon\\_plan/carbon\\_plan.aspx](http://www.decc.gov.uk/en/content/cms/tackling/carbon_plan/carbon_plan.aspx)

<sup>14</sup> Source: DUKES UK. Note: the categories ‘(unabated ) coal’ and ‘(unabated) gas’ covers Major Power Producers only. ‘Other generators’, i.e. auto-generators and those who produce electricity as a by-product from another process are included in ‘Other’. The renewables category includes both Major Power Producers and ‘other generators’.

19. To meet our climate change goals, we need to transform the way that electricity is generated. An illustrative pathway to meeting these goals is set out in Box 1. It is important to ensure that EMR and its delivery are consistent with a trajectory for electricity sector decarbonisation that allows us to meet our carbon budgets cost effectively. The Government will amend the Energy Bill to take a power to set a decarbonisation target range for the sector for 2030. This power will not be exercised until the fifth carbon budget is set in 2016.

### Box 1: Illustrative UK pathway

#### Now–2020

- We have a legally binding EU target for 15% of the UK's energy to come from renewable sources by 2020. To meet this target, DECC expects that around 30% of our electricity would need to come from renewable generation by the end of this decade, bearing in mind the level of contribution that may be possible from the heat and transport sectors. Switching from coal to gas-fired generation is also likely to deliver emission reductions in this decade.

#### 2020-2030

- From 2020, further deep cuts in emissions from the power sector will be necessary to keep us on a cost effective path to meeting our 2050 commitments. Reducing emissions from the power sector will become increasingly important to help us decarbonise other sectors. So if we do not make progress in relation to electricity over the next two decades, work towards our 2050 target in the 2030s and 2040s may become more difficult. There is a clear opportunity for large-scale new low carbon capacity in the next two decades, created by the combination of existing plant closures and an increase in demand. The Government will take a power in the Energy Bill to set a decarbonisation target range for the power sector for 2030.

#### 2030-2050

- DECC's 2050 pathways<sup>15</sup> work which looked at a range of possible routes to meeting our 2050 commitments shows that by 2050, as heating, transport and industry become increasingly electrified, the amount of electricity we need to generate is very likely to increase. Recent DECC analysis shows that electricity demand is likely to increase by between 30% and 100% by 2050. In order to meet our legally binding 2050 carbon emission reduction target we expect that power will be generated largely from renewables, nuclear and fossil fuel stations fitted with CCS technology, although the mix will be for the market to decide: the technologies with the lowest costs will win the biggest market share. The Carbon Plan highlighted that even in 2050 unabated gas could still have an important role to play in ensuring a secure, flexible and low-carbon system, albeit operating much less than it does today<sup>16</sup>.

<sup>15</sup> <http://www.decc.gov.uk/en/content/cms/tackling/2050/2050.aspx>

<sup>16</sup> [http://www.decc.gov.uk/en/content/cms/tackling/carbon\\_plan/carbon\\_plan.aspx](http://www.decc.gov.uk/en/content/cms/tackling/carbon_plan/carbon_plan.aspx)

## The investment challenge

20. To meet these challenges an estimated £110 billion of investment in electricity generation and transmission is needed in this decade alone. The Government's view is that the current market arrangements will not deliver this investment, therefore EMR provides the tools needed to meet the challenge.
21. There are also significant opportunities to meet our goals through changes to electricity demand, and through additional storage and interconnection. Demand side response (DSR), including that facilitated by smart metering and smart grids, can help flatten the peaks in demand that are currently seen at particular times of the day and year, and which will be particularly challenging as demand for electric heat and transport increases. EMR will support the development of DSR by allowing demand side projects to bid into capacity auctions, if initiated. And as part of DECC's Electricity Demand Reduction Project, we have published a consultation document on options to encourage more efficient electricity use<sup>17</sup>.

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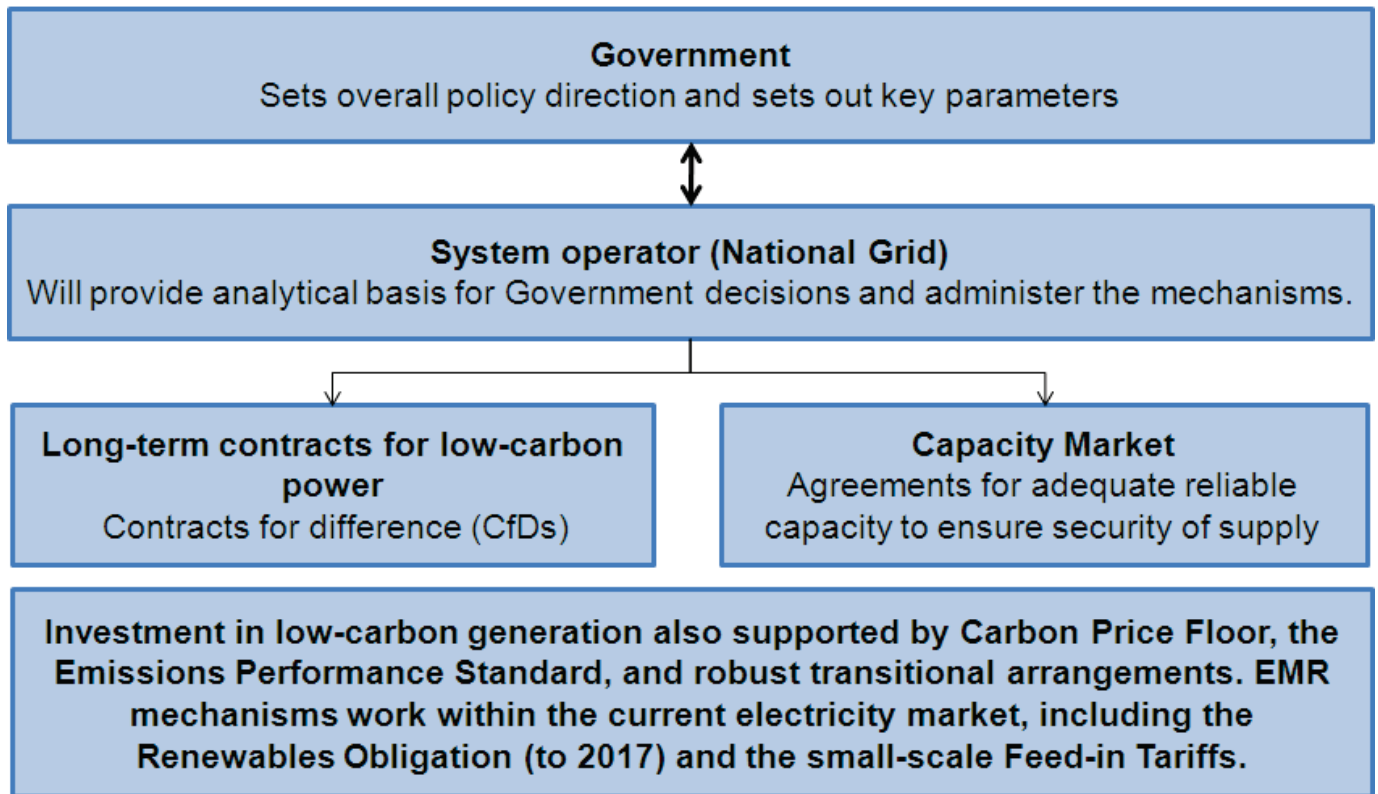
<sup>17</sup> [http://www.decc.gov.uk/en/content/cms/consultations/edr\\_cons/edr\\_cons.aspx](http://www.decc.gov.uk/en/content/cms/consultations/edr_cons/edr_cons.aspx)

# What is Electricity Market Reform?

## Objectives of EMR

22. The EMR objectives align with those set out for the electricity sector outlined above. In detail:
- **Ensuring a secure electricity supply** by providing a diverse range of energy sources, including renewables, nuclear, CCS equipped plant, unabated gas and demand side approaches; and ensuring we have sufficient reliable capacity to minimise the risk of supply shortages.
  - **Ensuring sufficient investment in sustainable low-carbon technologies** to put us on a path consistent with our EU 2020 renewables targets and our longer term target to reduce carbon emissions by at least 80% of 1990 levels by 2050.
  - **Maximising benefits and minimising costs** to the economy as a whole and to taxpayers and consumers - maintaining affordable electricity bills while delivering the investment needed. EMR minimises costs compared to the current policies because it seeks to use the power of the markets and competition and reduce Ministerial intervention and support over time.
23. The key elements of EMR include:
- A mechanism to support investment in low-carbon generation: the Feed-in Tariffs with Contracts for Difference (CfD);
  - A mechanism to support security of supply, if needed, in the form of a Capacity Market; and
  - The institutional arrangements to support these reforms.
24. These mechanisms will be supported by:
- The Carbon Price Floor – a tax to underpin the carbon price in the EU Emissions Trading System;
  - An Emissions Performance Standard – a regulatory measure which provides a backstop to limit emissions from new fossil fuel power stations;
  - Electricity Demand Reduction;
  - Measures to support market liquidity and access to market for independent generators; and
  - Effective transitional arrangements.

**Figure 3:** How the market reforms instruments will be administered



25. Details of how these mechanisms will work are set out below. This section also details policy developments that have been made since our last policy update was published in May 2012<sup>18</sup>.

### Long-term contracts for low-carbon power: Contracts for Difference (CfDs)

26. The Government set out in the EMR White Paper in July 2011 its decision to provide increased revenue certainty to low-carbon generation through use of a Feed-in Tariff following the structure of a Contract for Difference (CfDs).

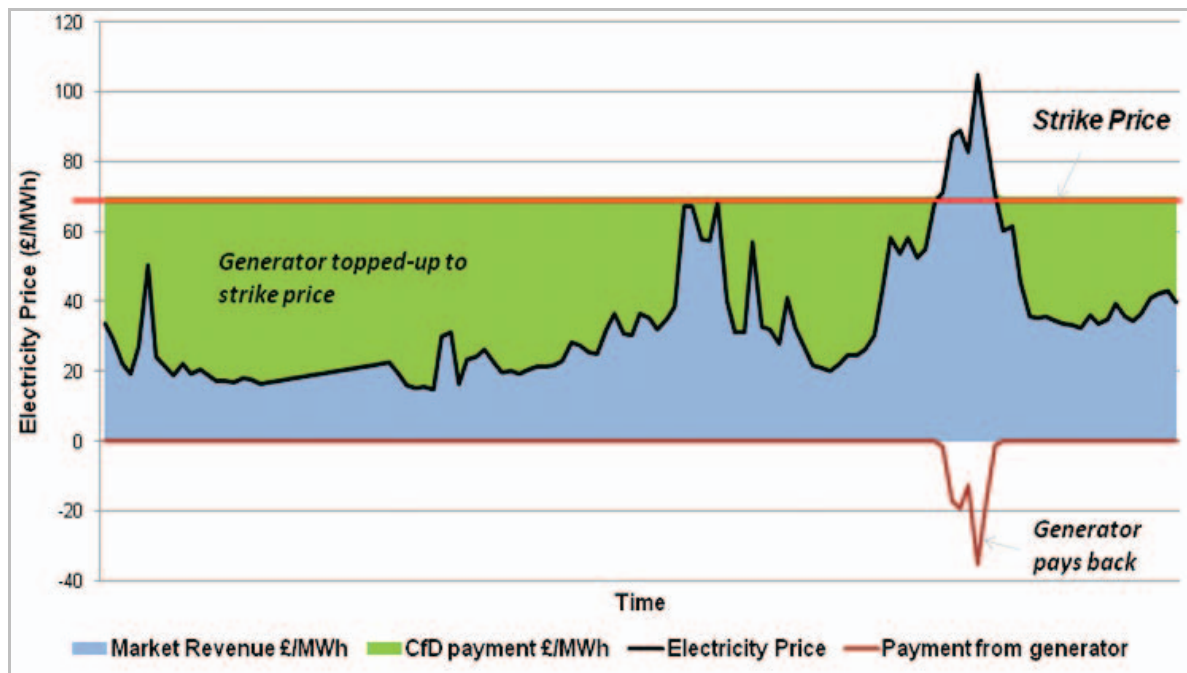
#### How the CfD works – the strike price

27. Generators with a CfD will sell their electricity into the market in the normal way, and remain active participants in the wholesale electricity market. The CfD then pays the difference between an estimate of the market price for electricity and an estimate of the long term price needed to bring forward investment in a given technology (the ‘strike price’).

<sup>18</sup>[http://webarchive.nationalarchives.gov.uk/20121025080026/http://www.decc.gov.uk/en/content/cms/meeting\\_energy/markets/electricity/electricity.asp](http://webarchive.nationalarchives.gov.uk/20121025080026/http://www.decc.gov.uk/en/content/cms/meeting_energy/markets/electricity/electricity.asp)

- 28. This means that when a generator sells its power, if the market price is lower than needed to reward investment, the CfD pays a ‘top-up’. However, if the market price is higher than needed to reward investment, the contract obliges the generator to pay the difference back.
- 29. In this way, CfDs stabilise returns for generators at a fixed level, over the duration of the contract. This removes the generator’s long term exposure to electricity price volatility, substantially reducing the commercial risks faced by these projects. As commercial risks are lower under the CfD, this lowers the cost of raising finance, and, ultimately, encourages investment in low-carbon generation at least cost to consumers.
- 30. The CfDs will take the form of long-term, private law contracts, providing generators with a clear set of rights and obligations, and recourse to arbitration processes to resolve disputes. This structure supports investor confidence in the arrangements and reduces the risk that the support payments might be reduced or removed in future; further reducing risk to investing and therefore costs to consumers.

**Figure 4:** Illustration of the operation of a Feed-in Tariff with Contracts for Difference



### CfD allocations and auctions

- 31. We intend to allocate CfDs to a broad range of low-carbon technologies. This allocation will initially take the form of an administrative process for renewables, with the levels of support (i.e. the strike prices) set by Government. This process improves upon the Renewables Obligation from a generator’s perspective as the developer secures a contract and clarity over the associated support level far earlier in the project development process.



32. We intend to then move towards more competitive forms of allocation for all technologies as soon as practicable. Competition in the allocation process allows prices to be set by the market, rather than by Government, and further reduces costs to consumers. We anticipate that the conditions for moving to technology-specific competitions for some renewables could be present as early as 2017 and it is possible that we could move to technology-neutral processes in the 2020s. The move towards more competitive forms of allocation will vary between technologies.
33. CCS is already running a competitive process to determine which projects secure support and the first new nuclear project is currently being managed through the FID Enabling process (a form of early CfD issued during the transitional period). The FID Enabling process remains open to new proposals from all low-carbon technologies, and in July 2013 the Department will set out more information on its approach to CfD allocation for future CCS and nuclear projects after EMR is implemented. This approach will follow the same principles as for renewables, however the actual steps and timelines may vary to reflect the different technology and development characteristics for CCS and nuclear.
34. CfDs for renewable projects under EMR will be signed by the CfD counterparty following an application process run by the System Operator. We envisage a process whereby successful developers will be able to receive their CfDs early in the project, for example once they have gained planning permission and agreed grid connection.
35. The System Operator will initially allocate CfDs on a first come, first served basis before moving to allocation rounds once a significant proportion of the available budget is likely to be allocated. Government will establish clear criteria that the System Operator will use to determine when to make the shift to allocation rounds. This will enable Government to manage the overall budget within the envelope set in the Levy Control Framework in a manner that supports effective investment in low carbon generation while minimising costs to consumers.

### **CfD terms and conditions**

36. The CfD will be largely standardised across technologies. This provides a stable basis for investment, simplifies the process for allocating CfDs, and makes it easier to compare costs of different technologies. The standardisation of CfDs will also support the move to technology-neutral auctions in the longer term.
37. However, initially there will be a degree of variation in CfDs for some technologies. First, there will be different generic CfD designs for low-carbon generation that is intermittent and baseload, reflecting the different ways that these plant operate. In addition, there may be some variation for some projects or technology types to recognise the different risk profiles of some projects or technologies. Any variations agreed will have to represent value for money and be consistent with state aid rules.



38. In addition, investment contracts issued under the FID Enabling process may require variation due to the timing of the agreement of such contracts. For example, they may include terms that reflect any ongoing state aid process or the enactment of the EMR legislation.
39. The Government understands the importance of demonstrating the enduring nature of the CfD to investor certainty. As a private law contract, the CfD is binding on the parties to it and cannot be changed unilaterally once it has been entered into, except in accordance with its terms.
40. The Government is publishing alongside this document further details of the allocation process for CfDs for renewable projects and on the contract terms. This information is set out in Annex A and the detailed 'Heads of Terms' are set out in Annex B<sup>19</sup>.
41. We are also continuing to work with the CfD Expert Group (comprising stakeholders from industry, Ofgem, National Grid and a consumer representative) and wider groups of stakeholders. Meetings will be held in December 2012 to explain the content of the near final Operational Framework and discuss outstanding issues, and we will have a series of workshops over the coming months to discuss further, with a view to a final contract being published in July 2013.

### CfD counterparty

42. The Energy Bill sets out a revised proposal for the legal framework and payment model for CfDs. This takes into account the concerns raised by stakeholders and Parliament about the model proposed in the draft Bill in May 2012. The revised framework provides for a new institution, the CfD counterparty, which will sign private law contracts with generators and which will collect funds from suppliers using revenue raising powers within the Energy Bill to meet the CfD payments to generators.
43. The counterparty will be a limited company owned by Government. The body will be in place to sign and manage contracts from the time that EMR is implemented in 2014. More detail on the role of the counterparty and the implications for suppliers and generators is set out in Annex A, along with more information on the form and ownership of the body.

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<sup>19</sup> [http://www.decc.gov.uk/en/content/cms/meeting\\_energy/markets/electricity/electricity.aspx](http://www.decc.gov.uk/en/content/cms/meeting_energy/markets/electricity/electricity.aspx)

### **Powers in the Energy Bill in relation to Contracts for Difference**

- Power for the Secretary of State to make CfD regulations setting out how the mechanism should work.
- A power for the Secretary of State to designate a CfD counterparty.
- Powers of the Secretary of State to exercise controls over that body.
- Power for the System Operator and Secretary of State to instruct the counterparty to offer CfD contracts to eligible generators
- A duty on the Secretary of State, when making CfD regulations, to oblige electricity suppliers to make payments to the counterparty to enable it to make payments under the contracts.
- Power of the Secretary of State to set maximum costs and targets relating to CfDs.
- Power of the Secretary of State to make changes to license conditions to enable the System Operator to carry out its functions in relation to delivering CfDs and make other incidental provisions to make the scheme work.

## **Capacity Market**

44. Ensuring security of electricity supply is a Government priority. This means ensuring that there is enough capacity available to meet expected demand.
45. Historically, our electricity market has delivered secure supplies and comfortable capacity margins. There is a risk that this investment may not be forthcoming, creating increased risks to security of supply. DECC and Ofgem modelling suggests that capacity margins will tighten, potentially to levels which significantly increase the risk to reliable supplies.
46. This is why we are legislating for the introduction of a Capacity Market, which will be designed to provide investors with the certainty they need to put adequate reliable capacity in place, and protect consumers against the risk of supply shortages.
47. The Government is minded to run the first auction in 2014, for delivery of capacity in the year beginning in the winter of 2018/19. A final decision will be taken subject to evidence of need. This will be informed by updated advice from Ofgem and National Grid which will consider economic growth, recent investment decisions, the role of interconnection and energy efficiency, as well as consideration of the outcome of the review of the 4th Carbon Budget.

48. In the Capacity Market, if initiated, both generation and non-generation providers of capacity (such as DSR and storage) will receive a predictable revenue stream for providing reliable capacity, and face financial penalties if they fail to do so. In this way a Capacity Market acts as an insurance policy against the risk of inadequate investment and supply shortages. Capacity Markets have been used successfully internationally, including in the New England and PJM markets in the United States<sup>20</sup>. France is introducing a Capacity Market, and many other EU Member States are facing similar security of supply challenges to the UK, and considering options for addressing these.
49. The Energy Bill contains the high level legislation necessary to enable the design and implementation of the Capacity Market, which if initiated, will work as follows:
- a forecast of future peak demand will be made, four years ahead of the delivery year in which it is needed;
  - the net amount of capacity which is needed to ensure security of supply (which is likely to be informed by an enduring reliability standard) will be contracted through a competitive central auction run by the System Operator;
  - generation and non-generation approaches such as DSR will be able to participate in the capacity auction. All generation plants, including existing plants, will be eligible to participate in this auction, with some exceptions (e.g. low-carbon plants receiving the CfD);
  - providers of capacity successful in the auction will enter into capacity agreements, committing to provide electricity when needed in the delivery year/s (in return for steady capacity payments) or face financial penalties;
  - and the costs of the capacity payments will be shared between electricity suppliers in the delivery year.
50. We have published more detail on the design of the Capacity Market, particularly on the penalty regime, payment model and eligibility rules, in Annex C<sup>21</sup>. We have focused on those decisions which are most important for providing certainty for investors on how the scheme would operate.

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<sup>20</sup> PJM is the electricity transmission system serving all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia.

<sup>21</sup> [http://www.decc.gov.uk/en/content/cms/meeting\\_energy/markets/electricity/electricity.aspx](http://www.decc.gov.uk/en/content/cms/meeting_energy/markets/electricity/electricity.aspx)

### **Treatment of Demand Side Response (DSR) and storage in the Capacity Market**

DSR has the potential to offer reliable capacity. Increased development of DSR is also an important step towards a better functioning market where participants respond to price signals appropriately by reducing demand when electricity is scarce and prices are high.

Storage also contributes to a better functioning market by allowing energy to be stored for use at times when generation exceeds demand (e.g. high wind output at times of low demand) and used when energy is scarce. In a system with a higher proportion of intermittent generation, this role will be more and more important.

Given the advantages of DSR and storage, both will be able to participate in capacity auctions alongside generation capacity. We are also developing transitional arrangements to support the development of DSR and storage to better enable their participation in the Capacity Market. As part of these arrangements, if the first capacity market auction is run in 2014, we are minded to run auctions for DSR and storage for delivery in 2015 – 2017. More detail is included in Annex C.

51. Annex C also includes details on the latest DECC and Ofgem modelling of the security of supply outlook.
52. We are continuing to work with the Capacity Market Expert Group (comprising stakeholders from industry, Ofgem, National Grid and a consumer representative) to advance the detailed design of the Capacity Market. We expect to have completed the design by May 2013 and, if running the first Capacity Market auction in 2014, to formally consult on the full detailed design in October 2013.

### **Powers in the Energy Bill in relation to the Capacity Market**

- Power for the Secretary of State to make regulations to introduce a Capacity Market (“electricity capacity regulations”), which may in particular include provision:
  - governing capacity agreements;
  - about capacity auctions;
  - designating a settlement body;
  - conferring functions on the Authority or the national system operator to enable delivery of the Capacity Market;
  - imposing requirements on persons outside of a capacity agreement;
  - about the provision and publication of information; and
  - about enforcement and the resolution of disputes.
- Power for the Secretary of State to make modifications to licences, or to industry codes maintained under licences, for the purposes of the Capacity Market.
- Power for the Secretary of State to make amendments to specified enactments for the purposes of the Capacity Market

## **Institutional Framework**

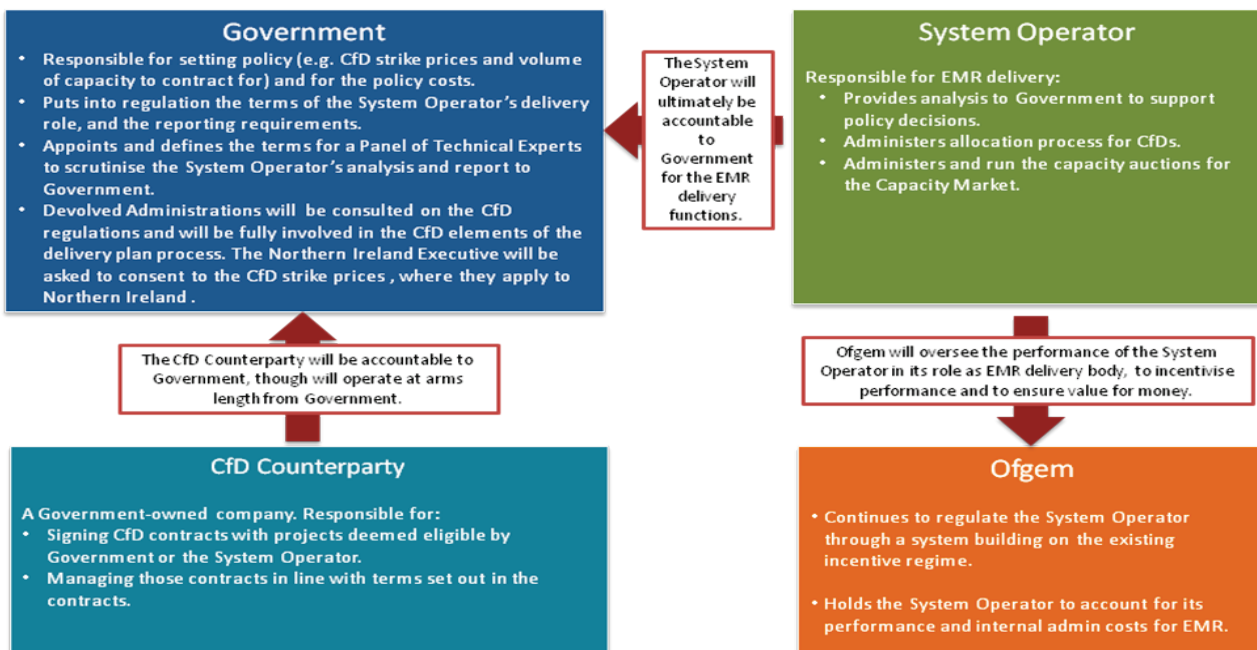
53. A robust, transparent and credible Institutional Framework is crucial to the success of EMR, and it is important to provide investors with the confidence they need to invest. The Government, the System Operator, Ofgem and the CfD counterparty will all have clear and distinct roles to ensure effective delivery of EMR.
- **Government** will be responsible for the policy and policy costs, which includes taking key decisions, for example agreeing CfD strike prices where they are administratively set (or the information needed to support future competitive CfD price award processes), the reliability standard for the Capacity Market and the amount of capacity to contract in a Capacity Market. Government will appoint a Panel of Technical Experts to scrutinise the System Operator’s analysis to ensure that it is robust and fit for purpose for the EMR delivery plans and annual updates. Panel members will have technical expertise from across the electricity industry and be independent of particular viewpoints. The panel will not be asked to comment on the Government’s objectives or policy decisions. Government will work closely with each of the Devolved Administrations in Scotland, Wales and Northern Ireland as appropriate, ensuring respect of each devolution settlement. Further detail on the application of EMR in the Devolved Administrations is set out later in this document.
  - **The System Operator** will in most cases administer the allocation process for generic CfDs, and will run capacity auctions for the Capacity Market. It will also

provide evidence and analysis to inform the Government’s decisions on policy parameters such as the CfD strike prices for renewables as long as they are administratively set, and the amount of capacity to contract in a Capacity Market. In order to carry out the analysis for the Single Electricity Market in Northern Ireland effectively, the System Operator will work with the System Operator Northern Ireland (SONI) and the Single Electricity Market Operator (SEMO).

- **Ofgem** will oversee the performance of the System Operator in its EMR delivery role, ensuring value for money and incentivising performance. As the independent energy regulator, Ofgem will continue to regulate the System Operator as well as generation, distribution and supply companies. The regulator in Northern Ireland (Northern Ireland Authority for Utility Regulation) will continue to regulate the market as before.
- **The CfD counterparty** will be a new company owned by the Government. It will be responsible for signing the CfD contracts with projects deemed eligible by Government or the System Operator, and for managing and settling those contracts in line with the contract terms.

54. Further details on the respective roles and responsibilities of the Government, the System Operator, Ofgem and the CfD counterparty are set out in Annex D<sup>22</sup> and will be detailed in secondary legislation.

**Figure 5:** An overview of the roles and responsibilities within the Institutional Framework<sup>23</sup>.



<sup>22</sup> [http://www.decc.gov.uk/en/content/cms/meeting\\_energy/markets/electricity/electricity.aspx](http://www.decc.gov.uk/en/content/cms/meeting_energy/markets/electricity/electricity.aspx)

<sup>23</sup> Arrows denote accountability between parties

55. When taking its key decisions, the Government will consider, as appropriate, the potential wider economic and environmental impacts of new energy infrastructure. It could do this by, for example, using the relevant available evidence (on, for example, biomass sustainability or generation plant CO<sub>2</sub> emissions) or working with other bodies as appropriate.
56. There are valuable synergies from the System Operator taking on the EMR delivery role. However, there is potential for conflicts of interest to arise with the System Operator's existing roles in the energy market, for example as owner of the electricity transmission network in England and Wales, and its other commercial interests. DECC is working with Ofgem to assess any conflicts of interest and propose mitigating measures if they are shown to be necessary. We have published a consultation alongside this document<sup>24</sup> which sets out some of the potential conflicts of interest that may arise and the range of possible mitigating measures to address these conflicts.

### EMR delivery plan

57. Every five years, the Government will publish a delivery plan to provide certainty and clarity on its long-term objectives, key policy decisions to support the effective delivery of the mechanisms, and supporting analysis including the impacts of policy decisions on Government's objectives. Annual updates will also provide for the analysis to be updated (to reflect, for instance, the type of contracts and agreements signed including the capacity in MW) and any new decisions made in that period to be published. They will also, where possible, signpost the timeline for key changes in the operation of the CfD or Capacity Market, including, for example, the timing of the move to competitive price setting for CfDs.
58. The Government will publish the first EMR delivery plan by the end of 2013, subject to Royal Assent of the Energy Bill. This will include the Government's decisions on CfD strike prices for renewables for the years 2014/15 – 2018/19. The Government will also work with other bodies, for example, Ofgem and the Committee on Climate Change as appropriate. Further details on the process and milestones for the first delivery plan are set out in Annex E<sup>25</sup>, including our intention to publish the draft delivery plan for consultation in July 2013. The delivery plan will be informed by evidence and analysis from the System Operator for which the Government's commission is included in the Appendix to Annex E. In early 2013 the Government intends to appoint the Panel of Technical Experts for the first delivery plan process, who will scrutinise the System Operator's analysis to ensure that it is robust and fit for purpose.
59. It is important to ensure that EMR and its delivery are consistent with meeting our longer-term decarbonisation targets, in particular a trajectory for electricity sector decarbonisation which is consistent with our carbon budgets. The Government will amend the Energy Bill during its passage to take powers to enable a decarbonisation target range for the power sector in 2030 to be set through in secondary legislation in future. This power will not be

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<sup>24</sup> [http://www.decc.gov.uk/en/content/cms/consultations/coi\\_emr/coi\\_emr.aspx](http://www.decc.gov.uk/en/content/cms/consultations/coi_emr/coi_emr.aspx)

<sup>25</sup> [http://www.decc.gov.uk/en/content/cms/meeting\\_energy/markets/electricity/electricity.aspx](http://www.decc.gov.uk/en/content/cms/meeting_energy/markets/electricity/electricity.aspx)



exercised until the fifth carbon budget has been set in 2016. Any decarbonisation target range that is agreed will be reflected in the EMR delivery plans and annual updates.

**Powers in the Energy Bill in relation to the EMR Institutional Framework**

- Powers for the System Operator to administer CfD and Capacity Market mechanisms.
- Reserve powers to deal with potential conflicts of interest within the System Operator, if needed.
- Reserve contingency powers to confer the EMR delivery functions on an alternative body.
- A power to designate a CFD counterparty.



## Our long-term vision

60. Our long-term vision for the electricity market is for a decreasing role for the Government over time, and to transition to a market where low-carbon technologies can compete fairly on price. This competition between technologies will drive down costs and allow us to meet our objectives in the most cost-effective way. EMR provides the tools for transition to get to this vision, and will provide the necessary support to low-carbon technologies that could enable them to get to a level of maturity where they are able to compete on a level playing field. EMR is also designed to ensure security of supply in the short, medium and longer term.
61. This process is set out in the table and paragraphs below.

**Figure 6:** The four stages of EMR (including estimated timings)

Stage 1	Stage 2	Stage 3	Stage 4
To 2017	2017 – 2020s	2020s	late 2020s/beyond
Current arrangements (RO) alongside new Contracts for Difference with prices set administratively. We are minded to run the first capacity auctions in 2014 if needed, for delivery of DSR and storage capacity from winter 2015/16, and delivery of market wide capacity from winter 2018/19.	Technologies mature (but at different rates) and some are able to enter competitive, technology-specific auctions. If the first auction is held in 2014, the Capacity Market will be fully operational and delivering capacity in this period.	Growing maturity of technologies and movement towards technology neutral auctions. Demand side response, additional storage and interconnection, and well functioning energy markets across the EU, will play an increasingly large role in managing supply and demand.	Technologies are mature enough and the carbon price is high and sustainable enough to allow all generators to compete without intervention.

## The stages of EMR

### Stage 1

62. CfD prices for renewables will initially be set administratively. This is necessary because technologies are at different stages of maturity and it is prudent to invest in different technology 'options' so that we can meet our decarbonisation objectives in different states of the future world at least cost.
63. The carbon price is also currently too low to encourage investment in low-carbon generation on its own. This stage reduces Government involvement in the market, by asking the System Operator to complete analysis to support decision making. However, the Government will still set a number of parameters in the electricity sector to meet its decarbonisation and security of supply goals (for example Government will administratively set strike prices for CfDs).
64. Even within the more mature low-carbon technologies, the Government does not believe that the conditions exist for successful auctions at this point for a number of reasons, in particular because our commitment to meet our EU 2020 renewables target would reduce the competitiveness of such auctions.
65. In relation to the Capacity Market - the Government is minded to run the first auction in 2014, for delivery of capacity in the year beginning in the winter of 2018/19. A final decision will be taken subject to evidence of need. This will be informed by updated advice from Ofgem and National Grid which will consider economic growth, recent investment decisions, the role of interconnection and energy efficiency, as well as consideration of the outcome of the review of the 4th Carbon Budget.
66. If the Capacity Market is implemented in 2014, the Government is also minded to run pilot auctions for delivery of DSR and storage from 2015 – 18, which will provide additional capacity during this period.

### Stage 2

67. Government intends to move to more competitive CfD price discovery for low-carbon technologies once it is satisfied that there is enough competitive tension in the auction or tender, and that projects or technologies eligible for a given tender or auction can be compared in a meaningful way. Given the EU 2020 renewables target, and the different build times and stages of development of technologies, it is not deemed appropriate to set a hard deadline for transition to competitive price discovery for all renewables. Instead the Government believes a phased transition is preferable and necessary.

68. The Government proposes to introduce competitive price discovery for more mature renewable technologies once their build times mean that they would be unable to commission in time to meet the deadline for the EU 2020 renewables target, i.e. as early as 2017 for dedicated biomass, 2018 for offshore wind and 2019 or 2020 for onshore wind, or when there is sufficient demand for CfDs to support meaningful competition. As the 2020s progress, we expect more and more technologies to reach the level of maturity that enables competitive and efficient technology specific auctions to be held.
69. We do not expect the conditions to be in place to allow technology neutral auctions at this stage but will continue to monitor this<sup>26</sup>. We believe that trying to move to these auctions too quickly would create a focus on the cheapest available technology and would reduce the diversity of low-carbon technologies that are brought to maturity and which may be needed to ensure that the UK meets its decarbonisation objectives in the most cost effective way.
70. If initiated, the Capacity Market will be up and running by this stage, and ensuring security of supply. We are minded that the first delivery year will commence in winter 2018, with annual capacity auctions ensuring adequate capacity is in place thereafter.
71. If implemented, the Capacity Market will also include transitional arrangements to support the development of DSR and smaller scale storage. For more detail, see Annex C.

### Stage 3

72. Technologies will continue to develop at different rates, and it is possible that Government will still want to find ways of encouraging nascent low-carbon technologies to ensure a diverse portfolio of technologies is maintained during the 2020s.
73. Nevertheless, the Government believes that it can introduce competitive tension between low-carbon technologies during the 2020s, with low-carbon technologies competing increasingly on price alone as the 2020s progress.
74. The Government also expects to see demand side response, additional storage, interconnection, and well functioning energy markets across the EU, play an increasingly large role in managing supply and demand at this point.
75. Capacity auctions will run if needed during this stage to ensure sufficient investment in the total volume of capacity required to minimise security of supply risks, and will be robust to developments within the market, including the creation of a bigger and responsive demand side and a more interconnected and better functioning European single market.

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<sup>26</sup> See page 167 of the Carbon Plan - [http://www.decc.gov.uk/en/content/cms/tackling/carbon\\_plan/carbon\\_plan.aspx](http://www.decc.gov.uk/en/content/cms/tackling/carbon_plan/carbon_plan.aspx)

## Stage 4

76. By this stage (late 2020s and beyond), the Government's role in the electricity market will largely be restricted to the setting of high-level objectives for diversity and security of supply. The following conditions will need to be in place to allow low-carbon technologies to compete on price: the price of carbon (either through the EU-ETS or Carbon Price Floor) will be sufficiently high to stimulate investment; that due to the development of supply chains, and increased learning rates and economies of scale, costs for low-carbon technologies will have fallen; and that a sufficiently diverse portfolio of low-carbon technologies will have been achieved.
77. At some point in this stage, it should be possible for the Government to stop issuing CfDs, as the wholesale market (and Capacity Market) would be sufficient to support ongoing investment in low-carbon technologies, and to deliver the UK's 2050 decarbonisation target and determine the optimal mix of technologies at least cost. Financial market innovation will also be important – for example the ability to hedge electricity price risk over a longer period.

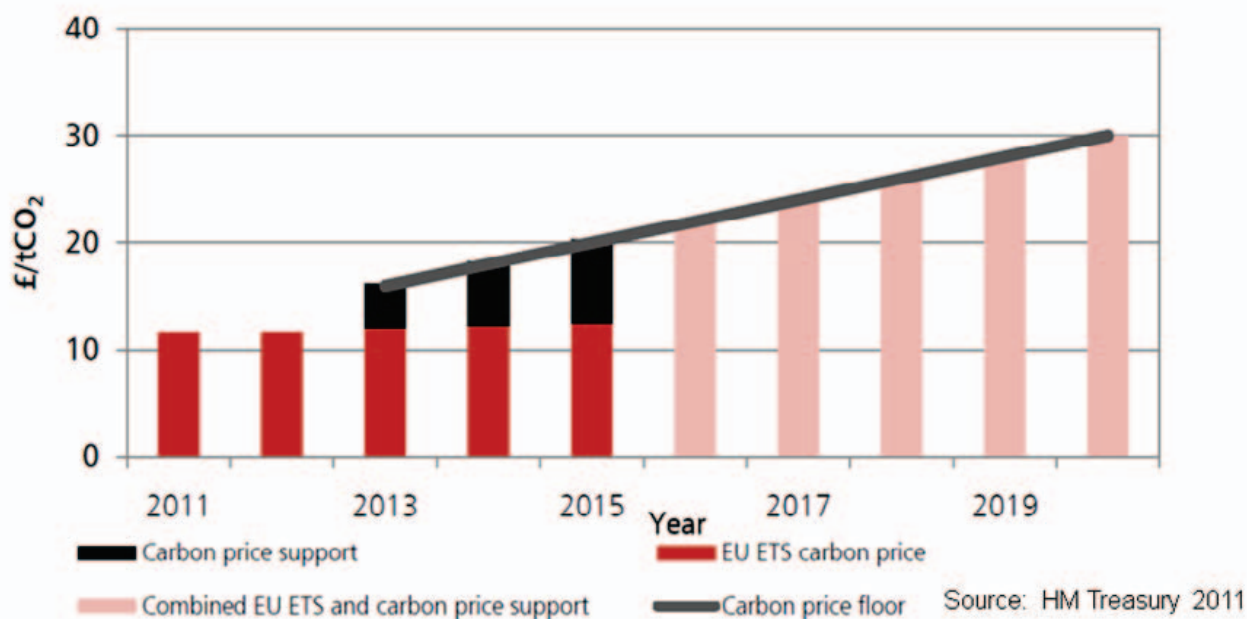
## Wider policy

78. Underpinning these arrangements are other key elements that will drive investment in low-carbon power generation: the Carbon Price Floor; and the Emissions Performance Standard; as well as measures to improve market liquidity and consideration of how to ensure independent generators can find a route to market for their power and support for Energy Intensive Industries (EIIs). These are outlined in the following sections.

### Carbon Price Floor

79. A Carbon Price Floor will provide a strong incentive for billions of pounds of new low-carbon investment in our electricity infrastructure, by supporting the price paid for emitting carbon dioxide in the UK electricity generation sector.

**Figure 7:** Carbon Price Floor illustration (in real 2009 prices and calendar years)



80. The Carbon Price Floor will provide long-term certainty about the cost of carbon in the UK electricity generation sector. The Carbon Price Floor was legislated for through the Finance Act 2011<sup>27</sup>. It will be introduced from 1 April 2013 at around £15.70/tCO<sub>2</sub> and follows a straight line to £30/tCO<sub>2</sub> in 2020, rising to £70/tCO<sub>2</sub> in 2030 (real 2009 prices).
81. Budget 2012 set the 2014–15 carbon price support rates equivalent to £9.55/tCO<sub>2</sub>, following the 2013-14 rates set at Budget 2011 equivalent to £4.94/tCO<sub>2</sub>. These rates represent the difference between the Government's target carbon price (the floor) and the future market price for carbon in the EU ETS. Future rates will be announced at subsequent Budgets

<sup>27</sup> <http://www.legislation.gov.uk/ukpga/2011/11/contents/enacted>

depending on the prevailing carbon price. A sustained increase in the carbon price would reduce the tax rate necessary to meet the floor. These rates will be set two years in advance to allow generators time to plan hedging strategies and avoid damaging liquidity.

## Emissions Performance Standard

82. The Emissions Performance Standard (EPS) will provide a regulatory back stop on the amount of emissions that new fossil fuel power stations can emit. This will help deliver the Government's commitment to preventing unabated coal-fired power stations being built, meaning that while coal can continue to make an important contribution to security of supply, it must do so in a manner consistent with the UK's decarbonisation objectives.
83. The EPS will apply to all new fossil fuel power stations at or over 50MW (including those where CCS is demonstrated) and will initially be set at a level equivalent to 450g/kWh. The EPS will be reviewed on a 3-yearly basis as part of the decarbonisation reporting required under the 2010 Energy Act.
84. Power stations consented under the 450g/kWh-based level will be subject to the level until 2045. This 'grandfathering' will provide long-term certainty to investors, particularly in relation to new gas generation that is needed to ensure security of supply.
85. The EPS will be applied on a UK-wide basis and monitored and enforced by the respective environmental regulators for England, Scotland, Wales and Northern Ireland. The Government will consult Scottish and Welsh Ministers and seek the consent of Northern Ireland Ministers in making regulations for the EPS.

### **Powers in the Energy Bill in relation to the Emissions Performance Standard:**

- Duty on power stations not to exceed annual CO<sub>2</sub> emissions limit.
- Powers for the Secretary of State to bring additional plant into the regime, specifically where an existing plant replaces a boiler or where a 'gasification' plant is associated with two or more generating stations.
- Powers for the Secretary of State, Scottish and Welsh Ministers and Department of Environment Northern Ireland to implement an EPS enforcement regime.
- Power for the Secretary of State to suspend the EPS for the purpose of maintaining security of supply.
- Duty on the Secretary of State to consult Scottish and Welsh Ministers and seek consent of Northern Ireland Ministers in making regulations for the EPS.

## Electricity Demand Reduction

86. The Electricity Demand Reduction (EDR) project delivers against a commitment in the EMR White Paper to undertake an assessment of whether DECC should take further steps to improve the support and incentives for the efficient use of electricity. This is an area that could potentially be valuable to all of us, reducing electricity bills directly and also indirectly through limiting the overall cost of the electricity system in terms of funding for new generation, transmission and distribution infrastructure.
87. In July 2012 we published an initial assessment of the potential around EDR<sup>28</sup>. This assessment of the incentives in place to support the efficient use of electricity concluded that there was significant technical potential to make efficiency savings beyond those incentivised by existing policy. We have published a consultation document on options to encourage more efficient electricity use.<sup>29</sup>
88. The consultation process and timetable have been designed such that if there were to be a case for legislation to enable electricity demand reduction, amendments and new clauses would be brought forward during the Parliamentary passage of the Energy Bill.

## Power Purchase Agreements (PPAs)

89. Independent generation developers often rely on longer term contracts (Power Purchase Agreements or PPAs) to secure the finance they need. Developers have said that it has become increasingly difficult to attract offers of bankable PPAs. The Government believes that a competitive market should provide bankable routes to market for independent generation projects and wants to see a stronger, more competitive, PPA market that can underpin investment.
90. We want to ensure that the extent and nature of issues in the current market - and likely developments in the future PPA market - are fully understood and we have said that, if necessary, we will bring forward proposals to ensure that independent developers have a viable route to market.
91. In June 2012 we published a call for evidence<sup>30</sup> to gather additional details about the state of the current market for PPAs and views on ways to ensure that independent generators are able to participate in the market.
92. The evidence that we received broadly supports the views of the independent generators that the market has shifted in recent years and that generators are finding it difficult to secure PPAs on terms that are as beneficial as they used to be.

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<sup>28</sup> <http://www.decc.gov.uk/en/content/cms/emissions/edr/edr.aspx>

<sup>29</sup> [http://www.decc.gov.uk/en/content/cms/consultations/edr\\_cons/edr\\_cons.aspx](http://www.decc.gov.uk/en/content/cms/consultations/edr_cons/edr_cons.aspx)

<sup>30</sup> [http://www.decc.gov.uk/en/content/cms/consultations/call\\_ren\\_inves/call\\_ren\\_inves.aspx](http://www.decc.gov.uk/en/content/cms/consultations/call_ren_inves/call_ren_inves.aspx)



93. It is not clear, however, whether the problems in today's market are likely to endure. The lower risk profile of the CfD and the removal of a number of temporary factors including the transition from the Renewables Obligation and current regulatory uncertainty, means that a competitive PPA market may be more likely to develop. The Government will focus on the efficient delivery of the EMR programme and will also take steps with market participants to smooth the transition to the CfD.
94. The structure of a PPA will need to change under the CfD to reflect the changes to the risk profile. The market will need to adjust to this new approach and will over time need to develop appropriate contracting approaches and thereby reduce the risks of a delay in taking projects forward and reduce costs. The Government will therefore initiate a stakeholder process from January 2013 to prepare for the CfD and identify the changes to the PPA market that may be required to ensure a smooth transition.
95. The Government anticipates this process can provide important impetus to the transition to the CfD and will produce key outputs including CfD friendly PPA contracts and a voluntary code covering issues such as price transparency.
96. Notwithstanding the above, the Government will in any case keep the PPA market under review as EMR is delivered. To ensure that the Government can act in a timely way, should it be necessary, we are seeking powers in the Energy Bill that would enable the Government to make modifications to electricity supply licences for the purpose of reducing barriers to entry associated with the PPA market.
97. More details on the responses to the PPA call for evidence can be found in Annex A<sup>31</sup>.

**Powers in the Energy Bill in relation to Power Purchase Agreements:**

- Powers for the Secretary of State to make changes to electricity supply licences conditions, and related industry codes, to facilitate investment in electricity generation by promoting the availability of Power Purchase Agreements.

## Wholesale market liquidity

98. A liquid market means that market participants are able quickly and easily to buy or sell power at a price that reflects supply and demand fundamentals. Liquidity is essential not only to promote a competitive market and bring down costs, but also to enable efficient functioning of EMR mechanisms.

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<sup>31</sup> [http://www.decc.gov.uk/en/content/cms/meeting\\_energy/markets/electricity/electricity.aspx](http://www.decc.gov.uk/en/content/cms/meeting_energy/markets/electricity/electricity.aspx)



99. Poor liquidity in the GB wholesale electricity market is an important barrier to entry to independent electricity generators and suppliers. Poor liquidity may distort investment and operational signals and prevent market participants from trading in order to effectively manage their risks. A liquid market is also important to ensure that CfD strike prices are established on the basis of an efficient competitive market and to provide robust reference prices.
100. There has been some positive progress in the last twelve months to address liquidity concerns. Industry led initiatives have increased transparency and trading volumes in the day ahead market. In addition, Ofgem is considering proposals to drive greater liquidity and we expect further progress shortly.
101. Whilst these developments are positive the Government believes that additional steps are necessary, especially to address poor liquidity in the forward market. Industry and Ofgem are best placed to deliver these improvements, but given the importance of liquidity to the success of EMR, the Government believes it is necessary to have the flexibility to act if necessary. We are therefore seeking backstop powers in the Energy Bill to enable the Government to intervene to improve liquidity, if it proves necessary, in order to support the delivery of our objectives.

**Powers in the Energy Bill in relation to liquidity:**

- Powers for the Secretary of State to make changes to electricity generation and supply licences conditions, and related industry codes, to promote liquidity in the GB wholesale electricity market and remove barriers to entry to that market.

## Effective transition to EMR mechanisms

102. Transition is required to move from existing instruments to the EMR mechanisms. Our aim is to ensure a smooth transition for investors and to avoid any hiatus in investment as a result of EMR.

## Transition from the Renewables Obligation

103. We have set out in detail in the EMR White Paper<sup>32</sup> and EMR Technical Update<sup>33</sup> how the transition from the Renewables Obligation (RO) to the CfD will work for renewable generators.

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<sup>32</sup> [http://www.decc.gov.uk/en/content/cms/legislation/white\\_papers/emr\\_wp\\_2011/emr\\_wp\\_2011.aspx](http://www.decc.gov.uk/en/content/cms/legislation/white_papers/emr_wp_2011/emr_wp_2011.aspx)

<sup>33</sup> [http://webarchive.nationalarchives.gov.uk/20121025080026/http://www.decc.gov.uk/en/content/cms/meeting\\_energy/markets/electricity/electricity.asp](http://webarchive.nationalarchives.gov.uk/20121025080026/http://www.decc.gov.uk/en/content/cms/meeting_energy/markets/electricity/electricity.asp)

104. The RO operates as three separate but complementary mechanisms working together - one for England and Wales and one each for Scotland and Northern Ireland.
105. The RO will remain open to new generation until 31 March 2017, allowing new renewable generation that comes online between 2014 (when CfDs start) and 2017 to choose between the CfD and the RO.
106. After this point, the RO will be closed to new generation and 'vintaged' (levels and length of support for existing participants will be maintained). All generation accredited under the RO will receive its full 20 years of support (subject to the 2037 end date of the RO). We have also set out some limited flexibility around the 2017 closure date for those projects that are delayed for reasons outside their control, such as delays in grid connection or planned radar installation.

#### **Powers in the Energy Bill in relation to Renewables Obligation transition**

- Powers for the Secretary of State to place an obligation on Ofgem to purchase renewables certificates at a fixed price.
- Powers for the Secretary of State, with the consent of the Northern Ireland Department of Enterprise, Trade & Investment, to place an obligation on the Northern Ireland Authority for Utility Regulation to purchase Northern Ireland renewables certificates at a fixed price.
- Powers for the Secretary of State to impose a levy on electricity suppliers to recoup the cost of purchasing the renewables certificates.

#### **Final investment decisions during the transition period**

107. The Government recognises that uncertainty during the implementation of changes to the market under EMR could lead to some investment decisions being delayed, and is committed to working with relevant developers to enable final investment decisions in advance of the full implementation of the main CfD regime to progress to timetable wherever possible. The Final Investment Decision (FID) Enabling Project has been established to take forward this work.
108. One of the options available to give comfort to developers is for the Secretary of State to enter into early CfDs – referred to as 'investment contracts' in the Bill – with developers in advance of the full implementation of the main CfD regime. These can then be transferred to the CfD counterparty once that is established. Since this is a transitional measure, under the terms of the Bill investment contracts must have been entered into before CfD regulations come into force (or by the end of 2015 if these regulations have not yet been brought into force).

109. Investment contracts will be similar to CfDs available through the enduring regime, but may differ in some of the terms, for example to reflect the fact that they may be agreed ahead of EMR legislation being in place and finalisation of the standard CfD terms. In particular, where investment contracts are entered into ahead of enactment of the Bill, the payment obligations within the contracts will be conditional on enactment of the Bill containing certain powers for the Secretary of State (such as the power to transfer contracts to a counterparty and to make regulations imposing obligations on suppliers), and any necessary state aid approval being received.
110. The actual form and detail of comfort that might be offered in relation to projects will depend on the projects that come forward and the outcome of any engagement with relevant investors and developers.
111. A number of developers (including new nuclear, renewables, and early stage CCS developers) have expressed interest in the process to date and it is possible that other developers may also do so. The EMR Technical Update<sup>34</sup> sets out the characteristics which we expect projects that come forward for engagement in the process to exhibit. We intend to publish an update to FID-Enabling policy by summer 2013.
112. The Government also recognises the importance of ensuring that the process for agreeing investment contracts with developers is robust and transparent. To this end, the Energy Bill requires any investment contract entered into by the Secretary of State to be published and laid before Parliament (including the strike price and reference price, but excluding information whose disclosure would be likely to damage commercial interests). When laid in Parliament, the contract must be accompanied by a statement setting out that the Secretary of State considers that payments under contract would encourage low carbon electricity generation, and summarising how, when deciding to enter into the contract, the Secretary of State has had regard to certain duties under the Climate Change Act 2008, security of supply, cost to consumers, and the Renewables Directive.
113. More details on the processes for ensuring value for money, transparency, and scrutiny in regard to investment contracts are set out in the Government Response to the ECC Committee's pre-legislative scrutiny report on the Draft Energy Bill<sup>35</sup>.

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<sup>34</sup>[http://webarchive.nationalarchives.gov.uk/20121025080026/http://www.decc.gov.uk/en/content/cms/meeting\\_energy/markets/electricity/electricity.asp](http://webarchive.nationalarchives.gov.uk/20121025080026/http://www.decc.gov.uk/en/content/cms/meeting_energy/markets/electricity/electricity.asp)

<sup>35</sup>

<http://www.decc.gov.uk/en/content/cms/legislation/energybill2012/energybill2012.aspx>

### **Powers in the Energy Bill in relation to Investment Contracts**

- Powers for the Secretary of State to make transfer schemes to transfer rights and liabilities under investment contracts, for example from the Secretary of State to a CFD counterparty or to an investment contract counterparty.
- A power for the Secretary of State to designate by order a company or public authority as an investment contract counterparty and to make regulations to exercise controls over that body (to cover circumstances where a CFD counterparty is not established, or - if it is - a contract is not transferred to it).
- Authorisation for the Secretary of State to fund investment contracts, and regulation making powers to impose obligations on suppliers to fund obligations under investment contracts (whether or not these are transferred from the Secretary of State).

## **Energy Intensive Industries**

114. In the Chancellor's Autumn Statement 2011<sup>36</sup>, the Government announced its intention to explore ways to mitigate the impact of electricity costs arising from EMR on the most Energy Intensive Industries (EIIs), where this significantly impacts their competitiveness, and subject to value for money and State Aid considerations.
115. In order to maintain the competitiveness of the UK as a place to do business the Government intends to exempt EIIs from the cost of CfDs, and is currently minded to do so through the operation of the supplier obligation. The Department for Business Innovation and Skills will work closely with DECC to define the scope of the exemption, including who will be eligible, and the mechanics for delivering it. The work to deliver this exemption will be part of the EMR programme, delivering on the same timescale, subject to further consultation. Any exemption is also dependent on State Aid clearance.

## **European context for EMR**

116. The UK electricity sector faces similar challenges to the rest of the European Union. UK energy policy since the early 1990s has been based on developing liberalised markets, successfully using competition to drive down energy prices. This broad approach has been adopted across Europe, through the EU's Internal Energy Market Packages, resulting in more open, transparent and competitive markets. This has led to lower average prices and greater choice. Together with our European partners, however, we now face a new

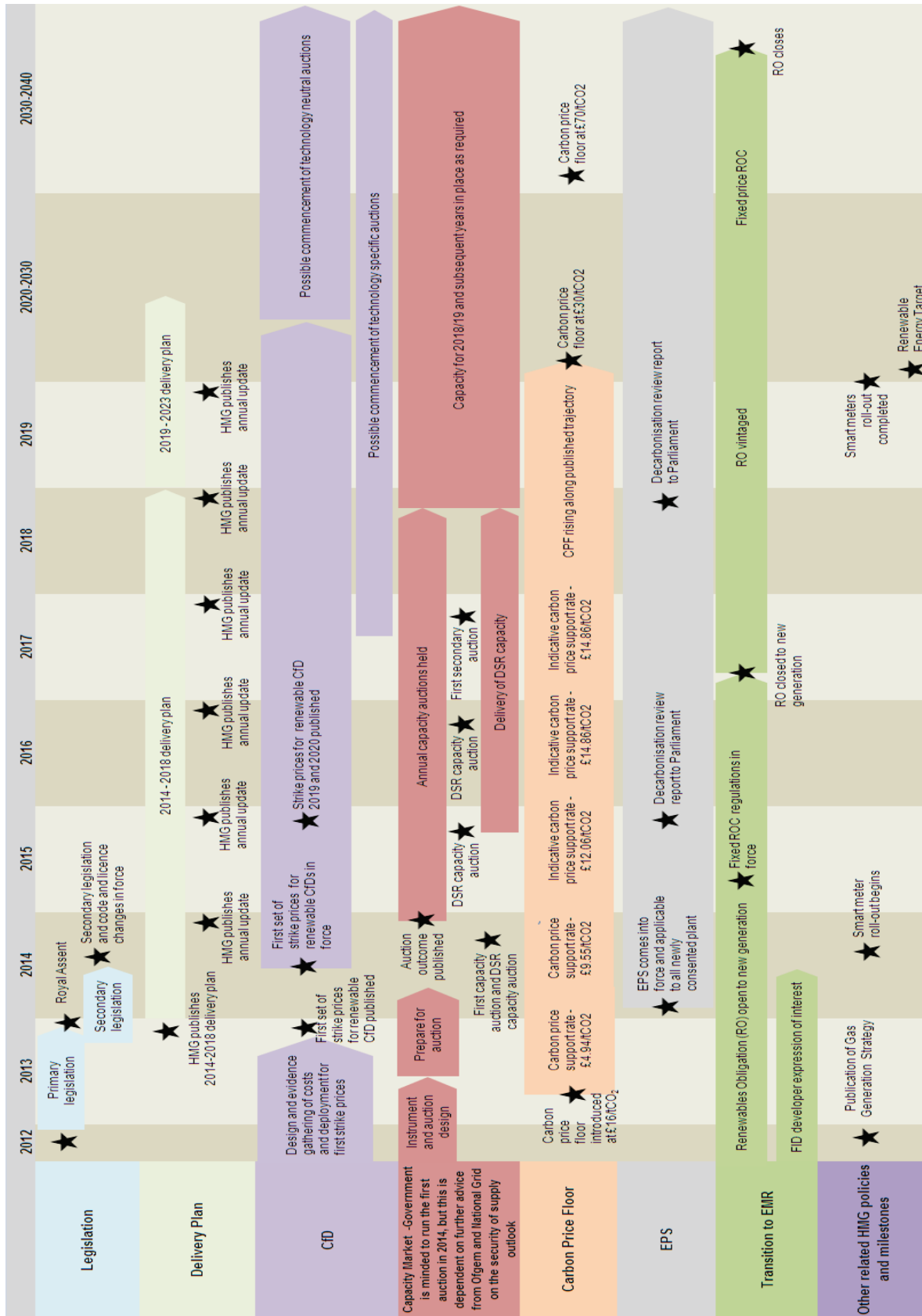
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<sup>36</sup> [http://www.hm-treasury.gov.uk/as2011\\_index.htm](http://www.hm-treasury.gov.uk/as2011_index.htm)

challenge of increasing renewable generation and reducing greenhouse gas emissions, while maintaining security of supply and affordability of bills.

117. The UK supports the European Commission's approach to meeting these challenges through the development of the EU Target Model (to enable the realisation of a single electricity market by progressively coupling adjacent markets, with a vision for integrated EU electricity markets by 2014) and the EU low carbon policy framework. The UK welcomes the efficiencies that further links with European electricity markets through market coupling by means of day ahead power exchanges will bring. The Commission envisages that coupling across interconnectors will occur through implicit auctions in which buyers and sellers in each market can bid into the other.
118. In addition to the expected benefits of coupling by means of day-ahead auctions, further EU initiatives to support electricity trading in forward, within-day and balancing markets, align well with Ofgem and Government initiatives on market reform. Emerging EU network codes (under development through the EU energy regulatory authorities group ACER and the EU transmission system operators group ENTSO-E) on capacity allocation and congestion management will inform EMR detailed design work. Both the CfD and any Capacity Market will be designed to be robust to developments in European and domestic electricity markets and we will continue to consider how to include European generation in these.
119. The UK, along with other EU Member States, is bound by EU State Aid rules and we are designing the EMR mechanisms and institutional arrangements to be consistent with those rules. To this end, we are working closely with the European Commission to ensure that our policies are compliant with State Aid rules. This is important to ensure that we have a stable and certain regime that has the confidence of industry and delivers best value to consumers.
120. It will also be important to engage with the EU's work on a new climate and energy framework for the period up to 2030 where our initial preference is against further technology-specific targets since they risk increasing the costs of meeting the EU's – and the UK's – long term low carbon objectives.

**Figure 8:** Indicative high level EMR timeline



## Costs and benefits of EMR

121. The Government is committed to meeting the legally binding decarbonisation targets as set out in the Climate Change Act 2008, and economy-wide carbon budgets.
122. In the Energy Bill the Government will take a power to set a decarbonisation target range in secondary legislation. The power will provide for flexibility in the setting or reviewing of the range by consideration of wider economic factors. The decision to set a target range for carbon emissions in 2030 should be taken when the Committee on Climate Change has provided advice on the 5th Carbon Budget which will cover the corresponding period (2028 – 2033), and once the Government has set that budget. The power will not be exercised until the Government has set the 5th Carbon Budget.
123. The analysis presented in the Energy Bill Impact Assessment uses 100gCO<sub>2</sub>/kWh as an illustrative level of decarbonisation in the power sector, consistent with previously published EMR impact assessments. The design of EMR and Contracts for Difference will lower the cost of financing the large investments we will need in electricity infrastructure irrespective of the level of decarbonisation in the sector to 2030.
124. To reflect the decision to take a power to set a decarbonisation target range and show the wider range of costs and benefits of EMR, the Impact Assessment will be updated early in the New Year to include analysis of decarbonising the power sector to an average emissions level of 200gCO<sub>2</sub>/kWh in 2030. In addition, the update will include a range of fossil fuel price scenarios and sensitivity analysis of a 50gCO<sub>2</sub>/kWh emissions intensity level.
125. In a scenario where power sector emissions are 100gCO<sub>2</sub>/kWh in 2030, it is estimated that EMR would result in net benefits of between £1.3bn and £7.4bn up to 2030 (NPV, 2012 prices) and between £6.1bn and £16bn up to 2049, compared with meeting decarbonisation ambitions through existing policy instruments.
126. With or without reform, household electricity prices are likely to increase over time. However, Electricity Market Reform will help to reduce the amount that prices and therefore bills will increase. As a result of EMR, average household electricity bills are estimated to be around 5 to 9% lower over the period 2016 to 2030, compared to what they would have been if a decarbonisation level of 100gCO<sub>2</sub>/kWh were achieved through existing policy instruments. The impact on average bills for businesses and energy intensive industries will be similar.
127. EMR could also help support as many as 250,000 jobs in the energy sector.



# EMR in the Devolved Administrations

128. Our key aim is ensuring an attractive investment environment for electricity generation in all parts of the UK, by putting in place arrangements which are as consistent as possible, while respecting devolved competencies and minimising market distortions.
129. We recognise that there is significant generation capacity within the Devolved Administrations (DAs) and in particular significant potential for low carbon generation sources, including nuclear, CCS, and renewables (such as onshore and offshore wind, and marine power). It is only by harnessing natural resources and technical expertise from across the UK that we will be able to deliver the required new generation of secure low-carbon power.
130. We are fully committed to having full and meaningful engagement with the DAs on the delivery of EMR that reflects their roles and responsibility under the devolved arrangements. This engagement will be consistent with the principles of consultation:
- **Proportionate** to the potential impacts of the proposal or decision being taken;
  - **Timely**, so that engagement begins early in terms of policy development so that different views can genuinely be taken into account; and
  - **Transparent**, where objectives of the consultation process are clear at the outset and where feedback is given in terms of how views have been considered.
131. Furthermore, in order to ensure that the role of the DAs is enduring and clear following legislation, we will set out a framework for ways of working with them on an enduring basis to apply from Royal Assent of the Energy Bill - this could be through a Memorandum of Understanding. Where appropriate, secondary legislation will also likely contain a description of the role of the DAs.
132. While it is important to set out the principles to which the UK Government will adhere in consulting with the DAs, it is also important for industry and investor certainty that the role of the DAs in EMR is as transparent as possible. The following sections set out at a high level the application of EMR in the DAs. Further information is also included in Annex D to this document, which sets out the role of the DAs in the delivery plan process.

## Northern Ireland

133. Energy policy is transferred to the Northern Ireland Executive (with the exception of most elements of nuclear power). The Northern Ireland Executive has agreed that extension of the CfD, 'Investment Contracts' and Emissions Performance Standard (EPS) provisions will



apply to Northern Ireland, while taking into account both devolved competencies and Northern Ireland's position within the Single Electricity Market (SEM). The UK Government and the Northern Ireland Executive have also agreed that because the SEM already uses a capacity mechanism, the Capacity Market would apply across Great Britain only with any associated costs being borne by GB consumers only.

134. To reflect that Northern Ireland Ministers have full decision making powers over the Energy Market in Northern Ireland (with the exception of most areas of nuclear power), we have agreed with the Northern Ireland Executive that before UK Ministers set strike prices for the UK, Ministers will gain the consent of Northern Ireland Ministers for prices in Northern Ireland. Costs will be socialised across UK consumers. Market conditions within Northern Ireland are different however to those in GB. UK-wide strike prices are preferable but in the event relevant differences in market conditions require it, CfD strike prices in Northern Ireland may be slightly different to those in GB to reflect those differences.
135. If Northern Ireland Ministers do not consent to proposed strike prices, there will be a mechanism for strike prices for Northern Ireland to be determined by Northern Ireland Ministers. If this were the case, any additional costs due to differential strike prices in Northern Ireland would be met by Northern Ireland consumers.
136. We will continue to involve Northern Ireland Ministers in further design and development work to ensure that the Northern Ireland Executive's devolved competency is respected. As well as involvement in decision making on the CfD strike prices, Northern Ireland Ministers will also have a consultative role set out in statute on the design and delivery of the CfD, as well as a consultative role within the accompanying institutional framework. Moreover, as Northern Ireland operates in a separate electricity market to GB – the Single Electricity Market – it is important to understand the differences between the markets before making decisions on strike prices in Northern Ireland. For this reason both SONI, the System Operator Northern Ireland, and the Northern Ireland Authority for Utility Regulation (NIAUR) may need to be involved in the analytical process for the delivery plan.
137. Northern Ireland Ministers intend to close the Renewables Obligation in 2017. However, because of reforms to the Single Electricity Market in Northern Ireland, the Northern Ireland Executive does not plan to open its market to CfDs for projects commissioning from 2016 at the earliest, meaning a shorter transition period for Northern Ireland. The Northern Ireland Department for Enterprise, Trade & Investment will have a consenting role in the transition in 2027 to the operation of a certificate purchase scheme (also known as a fixed ROC scheme) in Northern Ireland.
138. While the EPS is a wholly devolved matter to Northern Ireland, the EPS will be set up on a UK-wide basis following consultation with Northern Ireland Ministers. This will require a Legislative Consent Motion to be passed. There will also be an explicit duty on the Secretary of State to seek the consent of Northern Ireland Ministers when making regulations in respect of interpretation of the emissions limit duty and the monitoring and enforcement of the EPS where those regulations apply in Northern Ireland. The power to

temporarily suspend the EPS, in the event that it is necessary to maintain security of supply, will fall solely to Northern Ireland Ministers to the extent that it applies to Northern Ireland.

## Scotland

139. All of the policies in EMR extend to Scotland and energy, generation and supply are classed as reserved matters, though environment policy is broadly devolved. Because the interface between reserved and devolved areas of competence for Scotland is not straightforward, we have worked closely with the Scottish Government in finalising primary legislation and will continue to work closely in framing further detail in secondary legislation, to deliver a coherent set of reforms and ensure a smooth transition to the new arrangements.
140. The Scottish Government will have a consultative role – set out in statute – in the design and delivery of the CfD, as well as a consultative role within the accompanying institutional framework. The UK Government will continue to involve Scottish Government officials in ongoing policy development at working level on other aspects of EMR such as the Capacity Market and FID Enabling process.
141. EMR does not change the existing powers of Scottish Ministers over the Renewables Obligation in Scotland. Scottish Ministers have agreed to a statutory consultation role in the transition in 2027 to the operation of a certificate purchase scheme (also known as a fixed ROC scheme) in Scotland.
142. The EPS will apply on a UK-wide basis following consultation with Scottish Government Ministers. This consultation will take place when making regulations in respect of the interpretation of the emissions limit duty and in the event that the EPS is temporarily suspended if necessary to maintain security of supply.
143. Scottish Ministers will also have a duty to design an appropriate EPS enforcement regime for Scotland, something that will trigger a Legislative Consent Motion. Scottish Ministers will be given the necessary powers to implement an enforcement regime.

## Wales

144. All of the policies in EMR extend to Wales and energy policy is non-devolved in respect of Wales, though environment policy is broadly devolved. Because the interface between reserved and devolved areas of competence for Wales is not straightforward, we have worked closely with the Welsh Government in finalising primary legislation and will continue to work closely with the Welsh Government before setting out further detail in secondary legislation, to ensure a smooth transition to the new arrangements.

145. The approach agreed with the Welsh Government is that it will have a consultative role – set out in statute – in the design and delivery of the CfD, as well as a consultative role within the accompanying institutional framework. DECC will continue to involve Welsh Government officials in ongoing policy development at working level on other aspects of EMR such as the Capacity Market and FID Enabling process.
146. The EPS will apply on a UK-wide basis following consultation with Welsh Government Ministers. This consultation will take place when making regulations in respect of the interpretation of the emissions limit duty and in the event that the EPS is temporarily suspended in the event that it is necessary to maintain security of supply.
147. Welsh Government Ministers will also have a duty to design an appropriate EPS enforcement regime for Wales, something that will trigger a Legislative Consent Motion. Welsh Government Ministers will be given the necessary powers to implement an enforcement regime. These powers will be capable of being used to enable the monitoring and enforcement of the EPS to be carried out by the new Natural Resources body for Wales.

# Next steps

## Upcoming EMR milestones

148. The Government will share more information on EMR throughout the next year, including on the final CfD contract; the draft and final delivery plan for 2014-2018 including details of renewable CfD strike prices; and on final proposals on Capacity Market design and initiation. The Government will also be running a number of consultations in 2013 to allow stakeholders opportunity to comment on our proposals. A full list of key upcoming milestones and dates is set out in the table below.

Date	Milestone
January 2013	Closing date for responses to Government's call for evidence on proposed approach for supplier obligation
January 2013	Closing date for responses to Government and Ofgem's consultation on potential for conflicts of interest arising from the System Operator taking on the EMR delivery role
January 2013	Panel of Technical Experts appointed
March 2013	Government consultation on regulations for the transition period from the RO to the CfD (allowing new generators a choice of scheme)
Spring 2013	Ofgem and HMG report on potential for conflicts of interest arising from the System Operator taking on the EMR delivery role
April 2013	Carbon Price Floor introduced
May 2013	Capacity Market final design proposals published
July 2013	Government publishes further details on the supplier obligation
July 2013	CfD final contract published
July 2013	Draft delivery plan, including draft renewable CfD strike prices, published for consultation
July 2013	Further detail on CfD allocation and price setting processes for CCS and nuclear projects after close of CCS completion/FID

	enabling process
September 2013	Government consultation response on the transition period from the RO to the CfD (allowing new generators a choice of scheme)
October 2013 onwards	Government consultations on secondary legislation for EMR
By the end 2013	Energy Bill receives Royal Assent - subject to Parliamentary time and the will of Parliament
By end of 2013 (subject to Royal Assent)	First delivery plan, including final renewable CfD strike prices, published
2014	EMR delivery mechanisms up and running

## Stakeholder engagement

149. Since the start of the EMR process the Government has engaged closely with a wide range of stakeholders. The EMR team has met regularly with relevant trade associations, energy companies, consumer groups, investors and NGOs to gather views and evidence on all aspects of EMR as well as contributing to key industry events.
150. Since May 2012, we have developed three EMR Expert Groups on Contracts for Difference, the Capacity Market and the Institutional Framework. The Expert Groups are formed of senior representatives from a wide range of bodies within the electricity sector, including energy firms, National Grid, Ofgem and consumer groups. They enable individuals with expert knowledge to input on specific aspects of EMR policy design and provide an opportunity for DECC to keep industry stakeholders informed of EMR progress. Further information about the Expert Groups can be found at the link below<sup>37</sup>.
151. This engagement will continue following the introduction of the Energy Bill as we develop further the detail of our reforms. Specifically, we will maintain and build upon the strong working relationships with our stakeholders, including industry investors, consumer groups and non-governmental organisations, in order to keep stakeholders informed of and involved in EMR progress. We will continue to draw upon the EMR Expert Groups, which will ensure expert input from a wide range of stakeholders into the policy design process.

<sup>37</sup> [http://www.decc.gov.uk/en/content/cms/meeting\\_energy/markets/electricity/emr\\_expert/emr\\_expert.aspx](http://www.decc.gov.uk/en/content/cms/meeting_energy/markets/electricity/emr_expert/emr_expert.aspx)

**Figure 9:** Indicative EMR Roadmap (to end 2014)

