



# ***Energy Bill***

**Bill 100 of 2012-13**

**RESEARCH PAPER 12/79** 13 December 2012

The *Energy Bill 2012* seeks to implement 'electricity market reform'. The aims of this, as for Government energy policy generally, are for 'secure, clean and affordable' energy supplies. The Bill introduces a new system of support for low-carbon generation, called 'Contracts for Difference' which will encompass nuclear as well as renewable generation. It allows for other measures to reform the electricity market, such as capacity auctions, and measures to support routes to market for independent generators should such powers be needed. However, it does not include all of the recommendations made by the Energy and Climate Change Select Committee following its pre-legislative scrutiny of the draft Bill. The Committee also said that certainty and stability were needed urgently for investors, but several consultations associated with measures in the Bill are still on-going.

Other provisions in the Bill include placing the Office for Nuclear Regulation on a statutory footing, allowing for the possible sale of the Government Pipeline and Storage System, and 'consumer redress' powers, allowing Ofgem to require energy companies to pay compensation to consumers.

The Bill's Second Reading will take place on Wednesday 19 December 2012.

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## Research Paper 12/79

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## Summary

The *Energy Bill 2012* follows on from Energy Acts in 2008, 2010 and 2011, and its major aim is to implement 'electricity market reform' (EMR). A draft Bill underwent pre-legislative scrutiny by the Energy and Climate Change Select Committee, who reported in July 2012. The Committee's main concerns were about ensuring urgency and certainty of reform to attract investment in energy projects to the UK, and also about the Bill's focus on generation rather than on energy efficiency or demand reduction.

Against a backdrop of rising wholesale energy prices, and environmental legislation requiring the closure of many oil- and coal-fired generating plant, the Government is seeking through EMR to further 'decarbonise' or clean up electricity generation. The plan is to move from centralised, large fossil fuel-fired power stations to a more geographically diverse generation mix encompassing more renewables. This will help ensure security of supply, since recent predictions by Ofgem say that the amount of spare capacity on the GB electricity system could fall from around 14% now to 4% in Winter 2015/16. The electricity grid is not built for diverse, decarbonised generation, however, and a vast amount of investment is needed not just in new generation but also in energy transportation (e.g. the grid) by 2020.

The Bill introduces several mechanisms designed to deliver EMR. It introduces a new system of support for low-carbon generation, known as 'contracts for difference' (CfDs). These will in time replace the current Renewables Obligation, but differ by including nuclear, and carbon capture and storage, as well as renewables. There has been some controversy about whether the EMR package, in being designed to support nuclear, supports renewables less well than it might. Much of the success of CfDs will depend on the details, such as the so called 'strike price' that generators will be guaranteed to receive. A strike price for nuclear new build is being negotiated now between the Government and a consortium planning to build Hinkley Point C. The Government has however declined to 'underwrite' CfDs generally.

A further EMR mechanism in the Bill is for a capacity market and capacity auctions, designed to address possible shortfalls in generation. The Bill also sets, on the face of the Bill, an Emissions Performance Standard for carbon emissions as a backstop to prevent, for example, unabated coal-fired plant. However, the level at which this has been set, and recent Government announcements, suggest that this may foster a 'dash for gas'. The Bill does not go as far as setting a decarbonisation target for the electricity sector on the face of the Bill, as some have wished to see.

The Government has to balance its aspirations to transform the electricity market with minimising increases to consumers' bills. Ofgem encourages competition in the electricity supply industry to keep bills down. But the current electricity market is opaque and is not attractive to smaller independent generators and suppliers, so the Bill includes remedies that may or may not be used to address this (a consultation is on-going). A further problem is that consumers need to switch rather than stick with suppliers for competition to work, and to have the information to help them make informed decisions. The Prime Minister announced recently that the Energy Bill would include measures requiring energy companies to give customers their cheapest tariff, but these measures are not yet in the Bill.

Aside from the Parts relating to EMR, the Bill includes provisions placing the Office for Nuclear Regulation, currently a non-statutory agency of the Health and Safety Executive, on a statutory footing. It includes measures so that the sale of the Government and Pipeline and Storage System (GPSS) might be possible. It requires a new statutory Strategy and Policy Statement setting out policy goals and outcomes for the gas and electricity markets, and the roles of Government and Ofgem in delivering these. Finally, it allows for 'consumer redress', through a new power for Ofgem to require energy companies to pay consumers compensation, in addition to fines, for failures to meet standards of conduct.

## 1 Introduction

The [Energy Bill \[Bill 100 of 2012-13\]](#) was introduced into the House of Commons on 29 November 2012. Its Second Reading debate will take place on Wednesday 19 December 2012. [Explanatory Notes](#) and several [Impact Assessments](#) are available on the Parliament website.<sup>1</sup> On the same day the Secretary of State for Energy and Climate Change, Edward Davey, made the [Annual Energy Statement](#).<sup>2</sup> A significant set of further accompanying documents was also published by the Department of Energy and Climate Change (DECC). This included the annual [Statutory Security of Supply Report](#), a new [Energy Security Strategy](#), and several background papers and consultations.<sup>3</sup>

This reflects the breadth and ambition of the current Bill. Following on from *Energy Acts* in 2008, 2010 and 2011, it is perhaps the most complex so far, seeking to implement “electricity market reform” (EMR, see section 2.6) and re-set energy policy towards a lower carbon, more diversified generation mix. It was announced in the Queen’s Speech as:

“My Government will propose reform of the electricity market to deliver secure, clean and affordable electricity and ensure prices are fair”.<sup>4</sup>

“Secure, clean and affordable” are the Government’s high level objectives for the electricity system and more generally, energy policy. ‘Clean’ means ‘decarbonised’, or meeting the UK’s targets under the *Climate Change Act 2008* and the EU Renewables Directive.<sup>5</sup> It involves the closure of coal and oil-fired plants, driven by other environmental legislation.

As well as cleaning up generation through ‘decarbonising’ the energy mix, the Bill needs to address significant risks to the GB security of supply. For electricity, these were most recently calculated by the energy regulator, Ofgem, in its October 2012 [Electricity Capacity Assessment](#).<sup>6</sup> This said that the risks to electricity security of supply will increase in the next four years as spare capacity decreases. While demand is expected to remain broadly flat in Ofgem’s base case, as coal and oil generation comes off stream the amount of spare capacity in the system could fall from around 14% now to 4% in Winter 2015/16. The Government’s mantra regarding security of supply is for a ‘diverse portfolio’ of generation.

The third element is affordable energy prices. Delivering diverse, decarbonised generation and energy security will require investment. This will add to the pressures driving household bills upwards (see section 2.4). The Bill therefore has to balance the need to encourage generators to invest, with the increased costs to consumers. On 17 October 2012 the Prime Minister announced that the Energy Bill would require energy supply companies to give customers their cheapest tariff, too.<sup>7</sup> (See section 8.1 of this paper; these measures are not yet in the Bill.)

A [draft Energy Bill](#) was published on 22 May 2012.<sup>8</sup> It underwent pre-legislative scrutiny by the Energy and Climate Change (ECC) Select Committee who reported on 23 July 2012. The Committee was fairly critical of the Government’s proposals in the draft Bill. It felt that

<sup>1</sup> [Energy Bill Explanatory Notes Bill 100-EN](#) and Parliament’s [Energy Bill 2012-13 web page](#)

<sup>2</sup> HC Deb 29 November 2012 c387

<sup>3</sup> One set of accompanying documents is on the [DECC Energy Bill webpage](#) and another on DECC’s [EMR webpage](#), also see the DECC/Ofgem [Statutory Security of Supply Report](#) November 2012 and DECC [Energy Security Strategy](#), November 2012 Cm 8466

<sup>4</sup> HC Deb 9 May 2012 c3

<sup>5</sup> 80% reduction in carbon emissions by 2050 on 1990 levels, and 15% of energy from renewable sources by 2020. For policy aims, see [Electricity Market Reform: policy overview](#) DECC, November 2012 Cm 8498 p.9

<sup>6</sup> Ofgem, 5 October 2012

<sup>7</sup> See [House of Commons Library Standard Note Simplifying Energy Tariffs](#) SNSC6440 23 November 2012

<sup>8</sup> Draft Energy Bill, 22 May 2012 CM 8362

some proposals were too complex and many key issues remained undetermined, while investors were looking for clarity and certainty. It felt that some 'easy wins' such as better energy efficiency and reducing demand for energy were being overlooked in the focus on generation. The Committee's other main concern was that the timetable for the Bill should not slip:

The importance of ensuring a timely delivery of electricity market reform cannot be overstated: reform is vital if we are to meet low-carbon and energy security aspirations for 2020.<sup>9</sup>

The Government's response to the Committee was published alongside the Bill.<sup>10</sup> The Government has adopted several of the Committee's recommendations, but not all of them. The policy details and the ECC Committee's views are discussed throughout this paper as they appear in the Bill. There is a summary of the Government's response, including recommendations it has not adopted, in section 8.3.

There remain significant policy areas on which the Government is yet to finish consulting, and/or on which it anticipates bringing forward amendments to the Bill during its passage.<sup>11</sup> Some of the Bill's impact assessment (IA) documents will need to be updated as policy is determined, and in the light of recent developments such as the publication of a Gas Strategy and of the Treasury's levy cap (see sections 1.1 and 2.8). In further cases the Bill makes provisions, but consultations are on-going to determine how far those provisions will be needed, and whether they will be used.<sup>12</sup>

## 1.1 The Bill's impact assessments

The Impact Assessments (IAs) published alongside the Bill set out the Government's estimate of the net benefit or cost to society of the proposed measures. These can all be found on [DECC's website](#).<sup>13</sup> They include a central estimate of the net cost/benefit of the preferred option compared to possible alternatives and a range of potential costs/benefits resulting from different underlying assumptions. The IAs also look at the impact on different sectors in their distributional analysis and at the impact on electricity bills.

In some cases they are based on incomplete information. For instance, they have to make certain assumptions about what secondary legislation will include, or they cannot take account of very recent or forthcoming policy announcements. Most build on the analysis used to produce IAs for the *draft Energy Bill*.

The IAs use an 'illustrative' decarbonisation level for 2030 of 100gCO<sub>2</sub>/kWh. The Bill includes provisions to set a decarbonisation range (see section 3.1), but this will not happen until 2016 at the earliest. Some of the IAs look at the result of using different 2030 decarbonisation targets of 50 and 200gCO<sub>2</sub>/kWh. Currently the power sector has an emissions intensity of just over 500gCO<sub>2</sub>/kWh.

The IAs do not reflect the recent decision on the size of the Levy Control Framework in 2020, the revised growth forecasts or the Gas Generation Strategy published alongside the Autumn Statement 2012, the recent announcement by EDF to extend the operational life of two of its

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<sup>9</sup> HC 275-I Energy and Climate Change - First Report of Session 2012-13 Volume I *Draft Energy Bill: Pre-legislative Scrutiny* 23 July 2012

<sup>10</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504

<sup>11</sup> For example, possible amendments on a decarbonisation target for the electricity sector and on an energy efficiency feed-in-tariff, following consultations, and to fulfil the PM's commitment on offering energy customers a company's cheapest tariff

<sup>12</sup> On 'routes to market and PPAs', and on National Grid's conflicts of interest

<sup>13</sup> DECC's [Energy Bill webpage](#)

nuclear power stations by seven years to 2023 and the potential life extensions of other nuclear plant.<sup>14</sup> Some of these factors may be included in future updates to the IAs.

An analysis and summary of the IAs for those elements of the Bill with the greatest (assessed) financial impact are provided in Appendix 2.

## 1.2 Overview of the Bill

Part 1 of the Bill will attract most debate and deals with EMR. Chapter 1 introduces some overarching aims that the Secretary of State must have regard to. Chapter 2 introduces a new support mechanism encompassing all forms of low-carbon generation, called 'Contracts for Difference' (CfD) that will replace the [Renewables Obligation](#) (RO; see sections 3.6 and 3.7), but will extend to nuclear generation and carbon capture and storage projects.

Part 1 Chapter 3 allows for mechanisms to maintain capacity of electricity supply, including a system of capacity agreements and incentives as well as a competitive auction (or 'capacity market'). The Government is minded to run the first auction in 2014, but is yet to take a final decision, depending on need.<sup>15</sup>

Part 1 Chapter 4 deals with conflicts of interest, since National Grid will be a delivery body of EMR but is also a private company with commercial interests. Chapter 5 allows for 'investment contracts' or 'early CfDs' that can be made with developers making investment decisions before the CfD regime is in place in 2014, notably EDF and Hinkley C at present.

Chapter 6 seeks to improve access to markets for smaller independent generators, who currently find it hard to compete with the biggest energy firms who generate, sell and trade electricity. Chapter 7 allows for transitional arrangements as the RO is phased out.

The final significant measure under Part 1 is Chapter 8, which allows for an 'emissions performance standard' (EPS) setting an annual carbon dioxide emissions limit for new plant of 50MW (megawatts) or over.

The underlying detail and policy mechanisms required to make Part 1 of the Bill and EMR work, and deliver the changes needed, have already been subject to much debate. Examples include; whether CfDs as a policy design can truly encompass all sizes and forms of low-carbon generation, whether the Government will 'underwrite' CfDs, the size of the Treasury's 'Levy Control Framework' that will cap expenditure under CfDs, the design of the capacity market, and the nature of investment contracts currently being agreed to bring new nuclear forward. This paper will discuss all of these issues.

Part 2 of the Bill allows for the Office for Nuclear Regulation (ONR), currently a non-statutory agency of the Health and Safety Executive, to become a new independent statutory body. Its areas of responsibility will not change significantly; it will deal with transportation and nuclear installations inspections.

Part 3 deals with the Government and Pipeline and Storage System (GPSS), owned by the Ministry of Defence. The Bill makes provision so that its future sale might be possible.

Part 4 provides for a new statutory Strategy and Policy Statement setting out policy goals and outcomes for the gas and electricity markets, and the roles of Government, Ofgem and others in delivering these.

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<sup>14</sup> EDF press release '[EDF Energy announces seven year life extension to Hinkley Point B and Hunterston B nuclear power stations](#)', 4 December 2012

<sup>15</sup> [Energy Security Strategy](#), DECC November 2012 Cm 8466 p.9



There are further miscellaneous measures in Part 5. These include 'consumer redress', or a new power for Ofgem to require energy companies to pay compensation to consumers for failures to meet standards of conduct.

### 1.3 Geographical extent of the Bill, and of the electricity markets

**Clause 124** says that most of the Bill applies to England, Scotland and Wales. Only parts of the Bill apply to Northern Ireland although this includes EMR and Contracts for Difference (**Clause 124** subsection (2)).

The electricity market which Ofgem regulates operates on a GB basis. Northern Ireland forms part of a different market - the Single Electricity Market (SEM) - with Ireland, which the Northern Ireland Authority for Utility Regulations regulates in place of Ofgem for GB. The SEM, for example, already has a capacity mechanism. Northern Ireland Ministers have full decision making powers over their energy market, with the exception of nuclear power.

In Scotland energy is generally a reserved matter, apart from the promotion of renewable energy. Planning and environmental policy are devolved, however. Welsh energy policy is reserved, but again, environmental policy is largely devolved. The Emissions Performance Standard (EPS) for example will apply on a UK-wide basis, with devolved powers to design and implement the EPS enforcement regimes; this will trigger Legislative Consent Motions.

Recognising the potential of the devolved administrations for low carbon generation, the UK Government says it will seek to work with them to engage fully on EMR delivery, while providing investor certainty. The Scottish Government has issued a response to the *Energy Bill's* proposals, generally welcoming these.<sup>16</sup>

Devolution considerations are set out in greater detail in the [Electricity Market Reform: policy overview](#) document published alongside the Bill.<sup>17</sup>

## 2 Background to EMR

### 2.1 The 'big 6' and the electricity industry

The UK's electricity market is dominated by the so-called 'big 6' energy companies. Through acquisitions and mergers, many are now multinationals:

- Npower is part of the German RWE Group
- Scottish Power is now owned by the Spanish utility Iberdrola
- EDF Energy is part of Électricité de France
- Centrica owns British/Scottish Gas (UK registered)
- E.ON Energy is a subsidiary of the German E.ON Group
- Scottish and Southern is registered in Scotland

There are four main parts of the electricity business;

- generation
- transmission ('transport'; the high voltage electricity network)

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<sup>16</sup> Scottish Government [Scottish Government response to UK Energy Bill](#) 29 November 2012

<sup>17</sup> [Electricity Market Reform: policy overview](#) DECC, November 2012 Cm 8498 pp.40-43

- distribution (shorter distance 'transport' – the local low voltage networks)
- supply (to domestic or business customers)

All of the big 6 are 'vertically integrated' which means that they are involved in aspects of the industry from generation through to supply. There are moves at an EU level (through the so-called 'Third Package') to 'unbundle' companies. This would mean separating the ownership or accounts of the different parts of the business. However, the measures agreed at EU level apply only to companies that transport electricity or gas, i.e. National Grid and the more local 'distribution' network operators.

## **2.2 Balancing and settlement; the wholesale market**

National Grid, the system operator, has to balance the transmission system, since electricity cannot be stored. Generators and suppliers make contracts with each other or with the wholesale market (the power exchange), sometimes far in advance or sometimes on a close to real-time basis, based on what they think demand is going to be at any given time. They also make offers and bids of what their charges will be if they are asked by National Grid to come on- or off- stream to balance the system.

This is all done continuously, on a half-hourly basis, and all has to be reconciled afterwards according to actual demand and whether the system as a whole had a shortfall of generation or was in surplus (an arrangement called 'balancing and settlement', carried out under the industry Balancing and Settlement Code, BSC). This reconciliation is done by an organisation called Elexon. The system of charges incentivises generators to match demand by making different payments according to whether the system as a whole is short or long (in surplus) at any given time. However, clearly, any given company and its subsidiaries may be generating, supplying and trading at any given time, i.e. selling and buying electricity, and this leads to some opacity in the market.

So concerns remain about the transparency of the big 6 and the wholesale market. This is mainly because of uncertainty around prices and assuring a market for electricity generated, and whether returns can therefore be assured for independent generators and their investors. This may hinder new entrants to the market, reducing competition. Section 3.6 considers this in more detail.

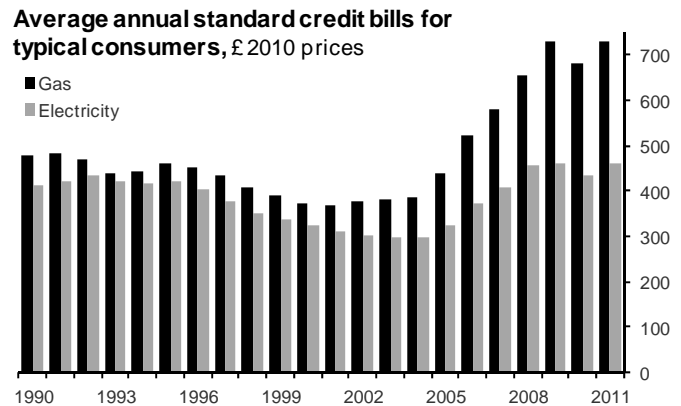
## **2.3 Why does competition matter?**

Ofgem, as the energy regulator, has a remit to protect the interests of (current and future) consumers and it does this primarily through promoting competition in the energy markets, along with regulation. It operates through the *Electricity Act 1989* and the *Gas Act 1986* as amended, and under later Acts. Under these, it sets 'Licence Conditions' that energy companies have to meet, and breaching these can cost a company up to 10% of turnover in fines (see section 7.1 for more on penalties).

Ofgem imposes price controls on the monopoly parts of the energy business (transmission and distribution). On the other hand, overall supply price controls (i.e. caps on consumers' final bills) were discontinued in 2002 because there was thought to be sufficient competition in the supply business. However, for this to be the case, there needs to be a choice of energy suppliers between whom customers can switch. Customers also need to be able to compare tariffs easily; see section 8.1.

## 2.4 Is supply competition working? Statistics on prices and bills

The chart opposite illustrates changes in domestic fuel bills over the past two decades. Electricity bills have increased by less than gas bills – by just over 50% in real terms since 2004. Electricity prices have increased further since these data were produced, but have not yet fed through to monthly inflation data. These bill data assume an annual level of consumption that does not vary over time. For electricity this is 3,300 kWh and this is meant to represent a ‘typical’ level of household consumption. This means that the annual bill data shows trends in unit costs not actual spending. It is not affected by changes in average consumption levels over time. While this gives a consistent price series that is not affected by the weather or other short-time impacts, it also is not affected by longer term changes in consumption patterns and energy efficiency.



In 2011 an average of 1.5% of household spending went on electricity. This was less than in the previous two years, above the 2001-03 low of 1.1%, but well below the 2.5-2.7% seen in the late 1970s and early 1980s.<sup>18,19</sup> Changes in prices clearly affect these figures, but there are also short- and long-term changes in household incomes, energy efficiency and the weather.

Real electricity prices for the industrial sector reached a low at a similar time to domestic prices in 2003. Since then industrial electricity prices have increased by a greater proportion than domestic prices. They peaked towards the end of 2008 at more than twice their 2003 level. Industrial prices fell back over the following two years, but more recently have approached their 2008 peak level.<sup>20</sup>

In the first half of 2012 UK electricity prices<sup>21</sup> for medium consumers<sup>22</sup> were just below the EU27 median figure. Most of the other member states with lower prices are newer members; the UK's price was the 4<sup>th</sup> cheapest in the EU15 although in the past three years prices have been rising faster in the UK than across the EU15. UK electricity prices for industrial consumers were generally above the EU medians. In the first half of 2012 average prices for medium industrial consumers<sup>23</sup> were 2% and 6% above the EU15 and EU 27 medians respectively and this gap was wider at higher consumption levels.<sup>24</sup>

In 2011 total spending on electricity across all users was £30.6 billion which was just below the 2009 peak. Households spent £14 billion on electricity (excluding VAT), the commercial sector £7.8 billion and industry £6.5 billion.<sup>25</sup>

Higher fuel prices are the main reason for the increases in fuel poverty seen since 2003 and 2004. Their impact has far outweighed that of improvements to energy efficiency and higher

<sup>18</sup> Office for National Statistics, *Consumer Trends*

<sup>19</sup> For much more detail on domestic prices see House of Commons Library Standard Note [Energy Prices](#)

<sup>20</sup> DECC *Quarterly energy prices* Table 3.3.1

<sup>21</sup> Including taxes

<sup>22</sup> 2.5-5.0 MWh per year

<sup>23</sup> 2,000 to 20,000 MWh per year

<sup>24</sup> DECC, *Quarterly energy prices*

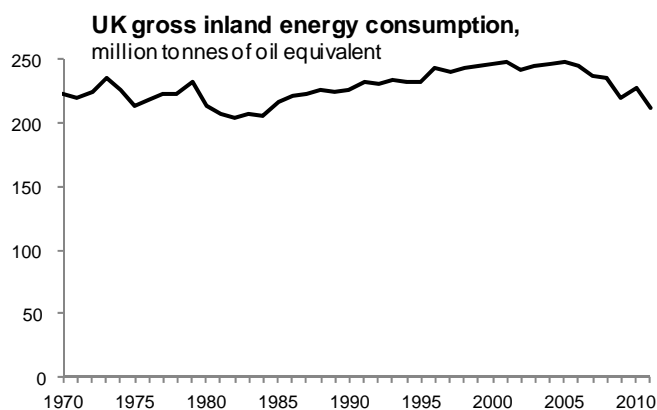
<sup>25</sup> DECC *Digest of UK energy statistics 2012*, Table 1.7

incomes. The estimated number of households in fuel poverty hit lows of 2 million in 2003 and 2004, but has since increased to 4.75 million in 2010.<sup>26</sup>

## 2.5 Current and future electricity generation

### Total energy use

In 2011 total UK fuel use was 212 million tonnes of oil equivalent. Around two-thirds of this came from domestic production, the rest from net imports of energy. Gas is the most important single source of energy making up 38% of consumption in 2011, followed by oil (34%) and coal (16%). Transport was the largest single energy consuming sector in 2011 with 40% of final consumption. The domestic sector accounted for 28%, industry 20% and 'others' 12%. Trends in consumption are illustrated opposite.

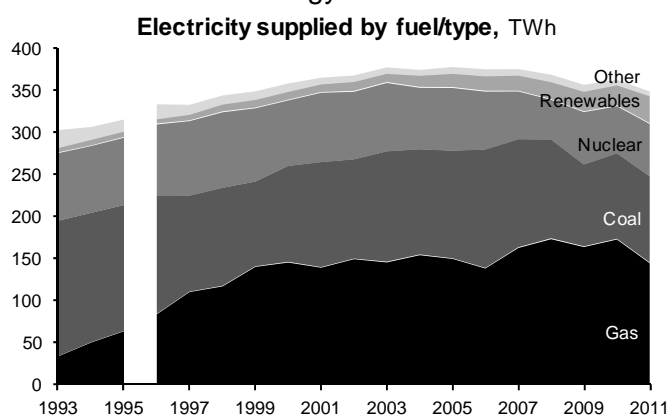


Source: *Digest of UK energy Statistics 2012*, DECC, Table 1.1.1

Demand for energy is projected to gradually fall over the next decade to below 200 million tonnes of oil equivalent, before increasing again to levels similar to 2011 by 2030.<sup>27</sup> This scenario is under DECC's central assumptions about fossil fuel prices and growth and includes the impact of policies that have been implemented or agreed (including Energy Market Reform). New policies with a greater impact in later years would be expected to help improve energy efficiency and reduce energy use in the later years of this projection period.

### Electricity generation

Total electricity use in the UK in 2011 was 318 terawatt hours<sup>28</sup> (TWh). The fuels used for domestic generation accounted for just over one-third of all UK energy use. Gas has been the largest single source of fuel for generation for much of the last decade. In 2011 it was used to produce 41% of UK generation. In 2010 there was record gas generation at 48% of all generation. Recent trends by fuel type are illustrated opposite. Generation from gas started to increase in the early 1990s. In 1993 it stood at 11%, and by 1999 it had reached more than 40%. Recent short-term shifts from gas to coal and *vice versa* reflect changes in the relative price of each fuel. Nuclear's share has generally fallen over this period and was 18% in 2011.<sup>29</sup> Renewables grew slowly for much of the last two decades, but have increased more rapidly in recent years. In 2011 they contributed just over 9%.



Source: *Digest of UK energy Statistics 2012*, DECC, Table 5.6

<sup>26</sup> DECC *Annual report on fuel poverty statistics 2012*. The definition of 'fuel poverty' is currently under review but currently a household is considered to be in fuel poverty if it needs to spend more than 10% of its income on fuel for adequate heating (21 degrees for the main living area, and 18 degrees for other occupied rooms).

<sup>27</sup> DECC *Updated energy and emissions projections 2012*

<sup>28</sup> Billion watt hours or million kilowatt hours

<sup>29</sup> For more information on nuclear generation see the Standard Note [Nuclear Energy Statistics](#)

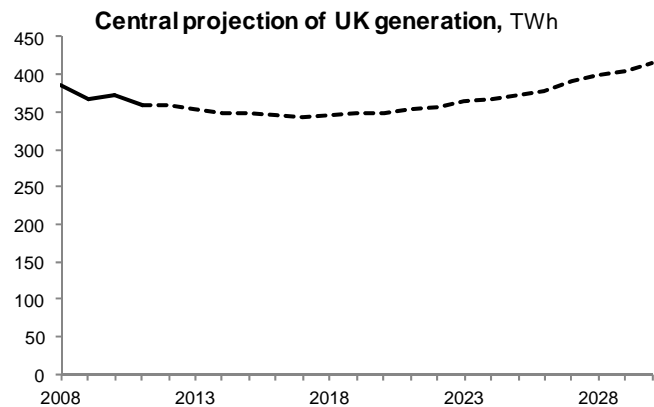
Total electricity use increased by around 75% between 1970 and 2005. Since then higher prices, improvements in energy efficiency and the recession have combined to reduce consumption by 9%. In 2011 net electricity imports made up 2% of UK supply.<sup>30</sup> Longer-term trends in demand from industry and the domestic sector have been broadly similar. Demand from the commercial sector has increased at a faster rate and has fallen back by a smaller amount in recent years. In 2011 35% of demand was from the domestic sector, 32% from industry and 24% from the commercial sector.<sup>31</sup>

The chart opposite illustrates the central projections for electricity generation up to 2030. These figures are for gross generation including net imports and hence are higher than the consumption figures above. Under this scenario generation falls by around 15 TWh (4%) to 2017 before increasing by 70 TWh or 20% up to 2030.

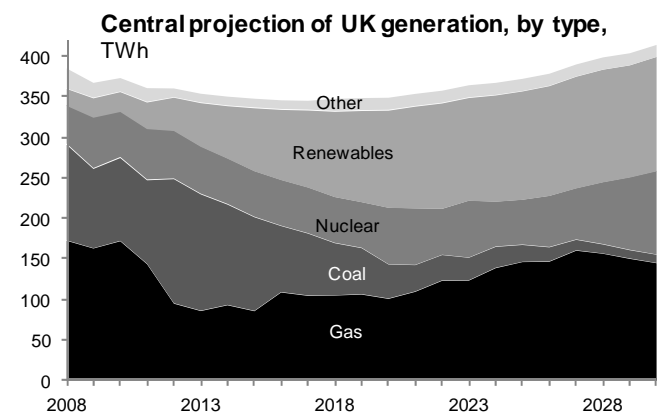
There are expected to be major changes in the sources of generation over the next two decades with a large expansion from renewables, a more modest expansion from gas (which remains the most important single source), a sharp fall in coal and a fall in nuclear generation before increases later on in the period. The share of renewable generation peaks in 2022 and falls slightly to 2030 as more gas comes on line. The contribution of different sources is illustrated opposite and summarised in the table below.

These projections do not include the Gas Strategy published since the *Energy Bill* was produced. Nor do they include the announcement on 13 December 2012 concerning the resumption of fracking for shale gas (see section 3.8 for more details).

The main areas driving growth in demand are the transport and commercial sectors. Consumption by the domestic sector is expected to fall in the central scenario by around 20% to 2020 before increasing again back up to 2011 levels by 2030. As with the earlier energy projections this pattern reflects the impact of current policies which have a short term impact only.



Source: Updated energy and emissions projections 2012, DECC. Annex E



Source: Updated energy and emissions projections 2012, DECC. Annex E

#### Central projections of generation by type

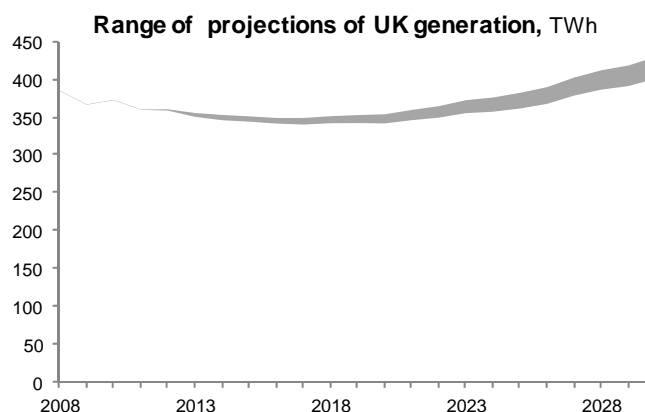
	2011		2030	
	TWh	% of total	TWh	% of total
Gas	144	40%	145	35%
of which CCS	0	0%	15	4%
Coal	102	28%	7	2%
of which CCS	0	0%	3	1%
Nuclear	63	17%	102	25%
Renewables	33	9%	142	34%
Other	16	5%	10	2%
<b>All</b>	<b>360</b>		<b>415</b>	

Source: Updated energy and emissions projections 2012, DECC. Annex E

<sup>30</sup> DECC *Digest of UK Energy Statistics 2012* Table 5.1.2

<sup>31</sup> DECC *Digest of UK Energy Statistics 2012* Table 5.2

The range of generation projections - from high to low economic growth and fossil fuel prices - is quite narrow, as illustrated opposite. In 2030 the high-low range is 29 TWh or 7%. The different scenarios also have a relatively small impact on the generation mix; gas and nuclear are both slightly higher when growth is high and fossil fuel prices are low, gas is lower when fossil fuel prices are higher and renewable output only varies by 4% under different scenarios.

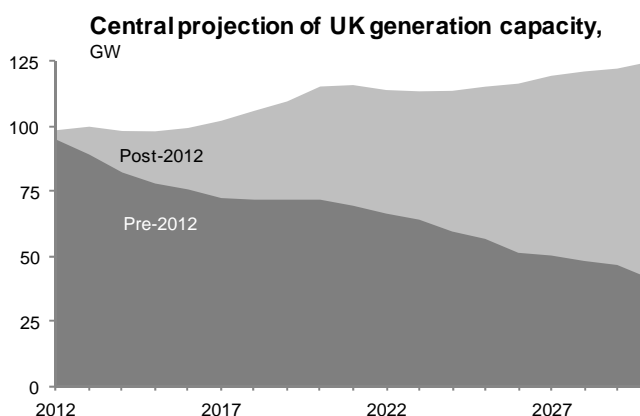


Source: Updated energy and emissions projections 2012, DECC. Annex E

These projections were made in October 2012 and include estimates of the impact of energy and climate change policies which are in place and recent policies where funding has been agreed and sufficiently developed to allow estimates to be made. They do not take any account of any additional measures announced in the *Energy Bill*, new growth forecasts, the Gas Strategy or EDF's recent announcement that it would extend the operating life of two nuclear power stations.

### Electricity capacity

In 2011 the total capacity of UK generation was around 94 gigawatts (GW). As with the generation figures most capacity was gas, followed by coal. Renewable capacity is relatively more important than generation because of its lower load factors.<sup>32</sup> The chart opposite shows the projected make-up of capacity up to 2030. Existing capacity declines during the whole period as most coal fired stations are shut down and around half of the gas-fired plant reaches the end of its operational life. Existing nuclear stations are also expected to close during this period, but their impact is much smaller.



Source: Updated energy and emissions projections 2012, DECC. Annexes I and J

The central projection is that 84 GW of new capacity will come online between 2012 and 2030 and 57 GW of existing capacity is expected to go offline. The main contributors are renewables (50%), most of which is expected to come online over the next decade, gas (37%) and nuclear (12%). Because a large proportion of new capacity is renewable total capacity needs to increase by a larger proportion than projected demand to ensure that supply can meet demand at all times. The projections show only small amounts (3.1 GW) of gas or coal with carbon capture and storage by 2030. The first new nuclear plant is projected to come online in 2020 with a total of 10 GW of new nuclear by 2030. The table opposite summarises capacity by type.

#### Central projections of capacity by type

	2012		2030	
	GW	% of total	GW	% of total
Gas	36	37%	45	36%
of which CCS	0	0%	3	2%
Coal	27	28%	4	3%
of which CCS	0	0%	0	0%
Nuclear	10	10%	14	11%
Renewables	15	15%	53	43%
Other <sup>a</sup>	10	10%	9	7%
<b>All</b>	<b>99</b>		<b>125</b>	

(a) Includes imports and storage

Source: Updated energy and emissions projections 2012, DECC. Annexes I and J

<sup>32</sup> The proportion of the time they operate at full capacity – typically 30-35% for wind power.

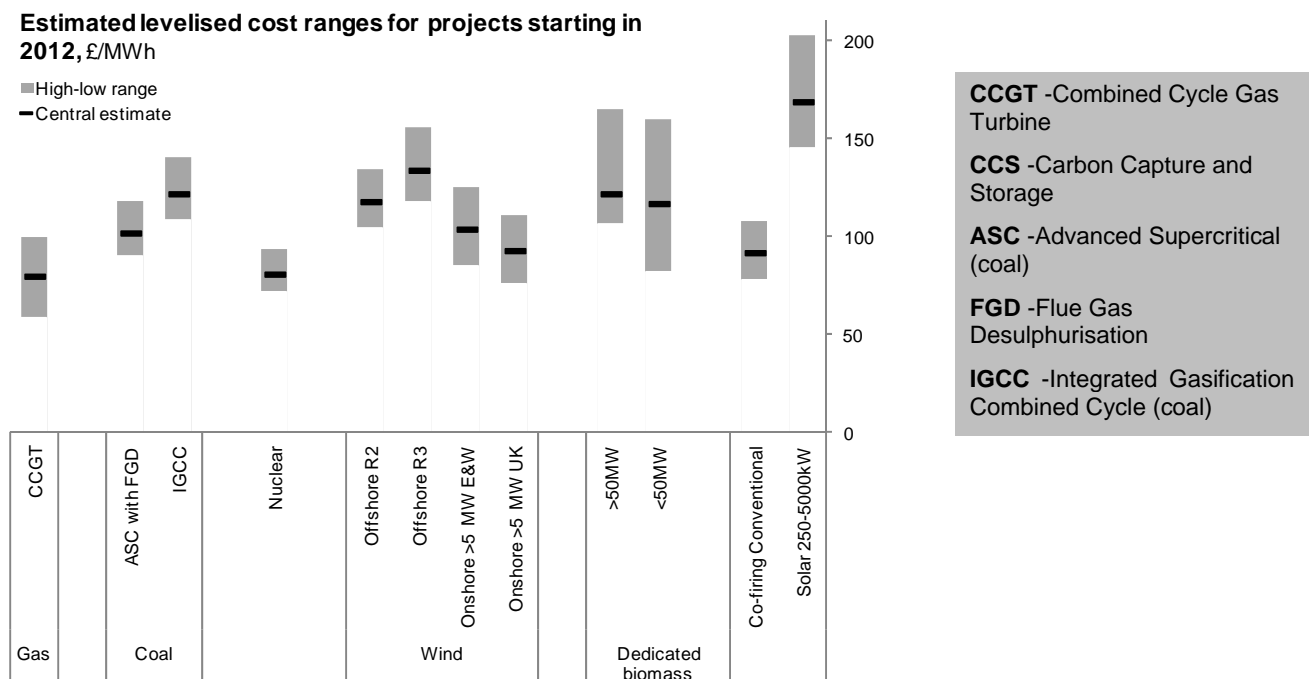
These projects of capacity by type are fairly robust to the different projection scenarios.

### Generation costs

The Government commissions research regularly into the costs of new generation. These results are used to inform policy and the wider debate around the energy mix. The latest results, those which inform the impact assessments and modelling for the Bill, are included in [Electricity Generation Costs](#).<sup>33</sup> The underlying research estimates the cost profile over the lifetime of each type of generation plant from the upfront pre-development costs to capital, fuel, maintenance, carbon, decommissioning and waste costs. These are discounted into present value terms using a 'standard' discount rate of 10% per year. This cost is compared to the total assumed lifetime output of each plant to get a £/MWh figure for each technology. This is known as the *lifetime levelised cost*.

Because the estimates are made for the cost of new rather than existing plant they look at a range of technologies from the well established to those still in development or with no commercial experience in the UK. The costs for the first of a new type of technology are expected to be higher than when they become established. The costs data therefore include estimates for generation built now and in the near future when these 'first of a kind' costs are reduced. The charts below illustrate the central estimates of the levelised costs of different technologies, along with their high-low range.

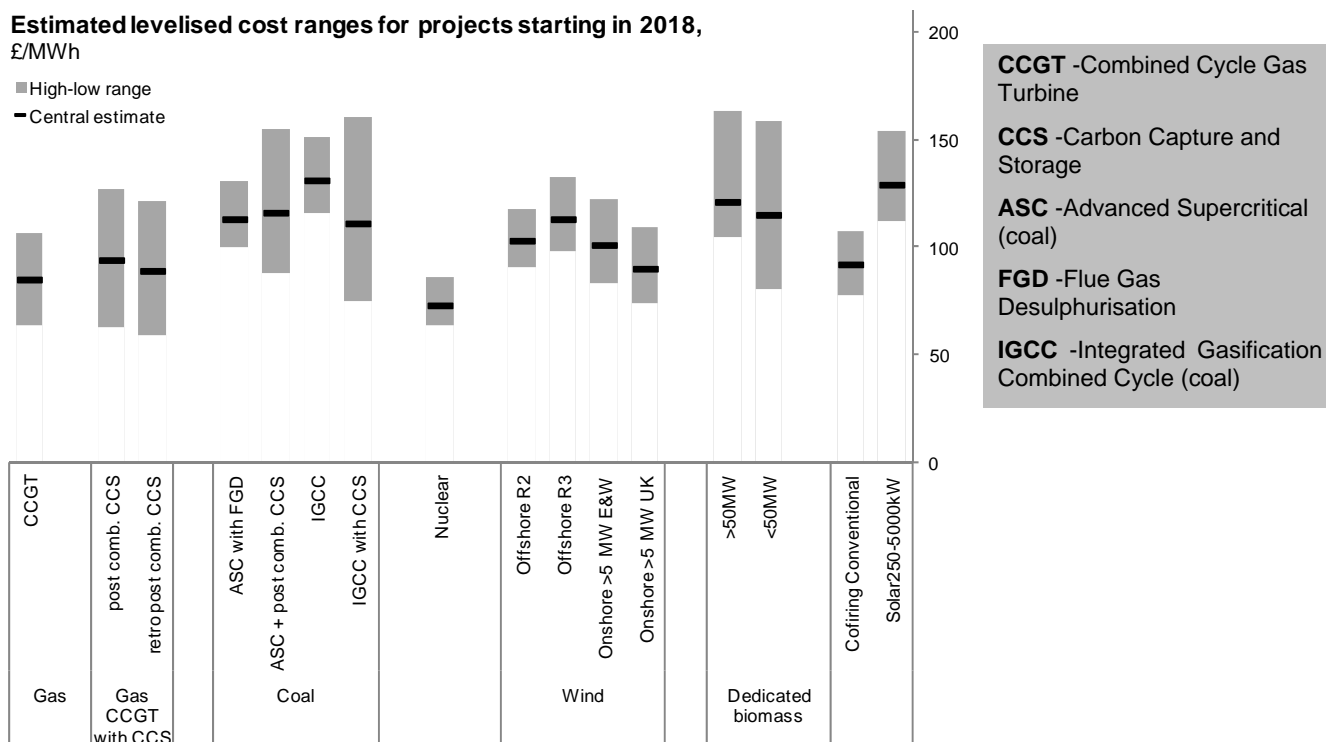
The first chart looks at the main range of technologies considered appropriate for 2012 starts. Here gas and nuclear have the lowest central estimates of levelised costs at around £80/MWh. This is despite the first of a kind premium for nuclear. Next least expensive are co-firing of biomass and onshore wind at £90-100/MWh. Offshore wind is more expensive, especially Round 3 sites which are expected to be deeper and further off shore than Round 2 sites.



The high-low range for Combined Cycle Gas Turbine (CCGT) starts in 2012 is wide for a conventional technology (£58-100/MWh). The sensitivities cover building costs and fuel prices and it is the latter that is the main cause of this relatively wide range.

<sup>33</sup> DECC *Electricity Generation Costs* October 2012

The next chart looks at the main range of technologies deemed appropriate for 2018 starts. This includes coal and gas options with carbon capture and storage (CCS), all of which have first of a kind premia attached. The later start date mean higher carbon costs for fossil fuel plants. Here nuclear costs are lower than 2012 starts because the first of a kind premium no longer exists. Nuclear clearly has the lowest central cost estimate at £64/MWh along with a narrow high-low range. The higher cost of carbon/capital costs of CCS push up the costs of the different gas options compared to wind and the other renewable sources. Central cost estimates for offshore wind are still higher than for gas, but their high-low range is narrower. All the different coal technologies have higher levelised costs than gas.



Further into the future the costs of new fossil fuel generation with CCS are expected to fall as the technology becomes established. The other main technologies that are expected to see substantial reductions in the levelised costs of new generation are offshore wind and large-scale solar plants.<sup>34</sup>

## 2.6 Policy development of electricity market reform (EMR)

The vision, then, for future energy generation is a shift away from larger fossil-fuel powered stations to encompass a ‘balanced mix’ including nuclear and also smaller, more localised renewable generation. The transmission grid has not yet evolved for this. The future also involves lower carbon emissions, and therefore investment in low carbon technologies. This will drive energy prices up in the short term, on top of changes in wholesale prices.

Ofgem’s *Project Discovery* in 2010 estimated that replacing aging infrastructure and moving towards decarbonisation might require up to £200 billion of investment by 2020 alone, and said that customer bills would rise under all scenarios.<sup>35</sup>

<sup>34</sup> ibid. Table 3

<sup>35</sup> *Project Discovery Options for delivering secure and sustainable energy supplies* Ofgem 3 February 2010



Of this, EMR is intended to deliver the £110 billion of investment needed in the electricity sector by 2020, comprising around £75 billion needed in new generation and £35 billion in electricity transmission and distribution.<sup>36</sup>

The Department of Energy and Climate Change (DECC) produced an *Electricity Market Reform Consultation* in December 2010.<sup>37</sup> This led to the July 2011 Energy White Paper *Planning Our Electric Future: a White Paper for secure, affordable and low carbon Electricity*.<sup>38</sup> This concluded that, without reform, the market would not deliver the scale of long-term investment needed in low-carbon generation, particularly in renewables, new nuclear and CCS, which needed to be made more attractive.

The market currently works well for investment in unabated fossil fuelled-plants that have lower up-front costs but on-going fuel costs, but less well for low carbon technologies which tend to have high up-front costs but low running costs.

The ECC Committee has looked both at security of energy supply and at EMR and has been supportive of EMR, calling it a “once in a generation opportunity to shift our energy usage to a low-carbon, energy-secure and affordable future”.<sup>39</sup>

However, a major reason why the ECC Committee was critical of the *draft Energy Bill 2012* was that it perceived time to be running short given investment and development lead times for new generation investment decisions, even though EMR policy development has now been proceeding for some time. It also felt that the proposals, while well intended, had become too complex. The Committee has been consistent in its views.

In its report on EMR of May 2011 the ECC Committee felt the Consultation paper’s proposals were “over-complex, potentially expensive and fail to recognise the urgency of the transformation that needs to take place”. When it revisited the subject in its October 2011 report *UK Energy Supply: Security or Independence?* the Committee remained concerned about urgency and attracting investment, given that it felt the proposed package of measures was too complex and might therefore seem too risky or unstable for investors.<sup>40</sup>

The ECC Committee’s repeated calls for investor certainty are because, as outlined in section 2.1, the UK’s large energy firms are typically multinationals who have a choice of developing projects under different regulatory and incentive regimes. They and their investors also want regulatory and return certainty.

The July 2011 White Paper made four main proposals, which the EEC Committee dubbed the ‘four pillars of EMR’:

- **Feed-in-tariff with Contract for Difference (CfDs)** to provide long term contracts of price support to different low-carbon generation types
- **A capacity mechanism** to encourage flexible reserve/cushion plants or demand reduction measures ‘to ensure the lights stay on’
- **Carbon price floor** to ‘underpin’ carbon price support providing a minimum guaranteed level; this has already been provided for in legislation (see below)

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<sup>36</sup> [Electricity Market Reform: policy overview](#) DECC, November 2012 Cm 8498 p. 7

<sup>37</sup> Department of Energy and Climate Change, Cm 7983

<sup>38</sup> CM 8099 12 July 2011

<sup>39</sup> ECC Select Committee HC 742 Volume I *Fourth Report Electricity Market Reform*, 16 May 2011, and HC 1065 Volume I *Eighth Report UK Energy Supply: Security or Independence?* 25 October 2011

<sup>40</sup> Ibid.

- **An emissions performance standard (EPS)** to limit how much carbon power stations can emit

With policy having moved on, the Government now describes the 'key elements of EMR' as the top two only; CfDs and a Capacity Market, 'supported by' the Carbon Price Floor, an EPS, Electricity Demand Reduction, measures to support market liquidity and independent generators, and transitional arrangements.<sup>41</sup> The Government describes the current EMR package as:<sup>42</sup>

EMR is a flexible toolkit that will take us through this transition, working with the existing market and maintaining a market-based approach while addressing market failures. It has been designed to meet the investment challenge we face and deliver this at lowest cost. It will keep the lights on and help us meet our climate change commitments, while minimising costs to consumers.

## 2.7 Impact of Government policy on electricity bills

Over the past decade various Government energy and climate change policies have been funded through obligations on energy suppliers. These policies include the Renewables Obligation, the Carbon Emissions Reduction Target, Warm Homes Discount Scheme and Feed-in-Tariffs. Ultimately these policies are paid for by consumers, as suppliers pass on the costs through energy bills.

DECC estimates that current energy and climate change policies added around £28 (4%) to a typical domestic gas bill in 2011 and £61 (10%) to an electricity bill.<sup>43</sup> When considering this, it is crucial to distinguish between the unit cost of energy and annual expenditure.

Where energy efficiency policies are paid for through bills you would expect that this will increase unit costs (pence per kWh) but *reduce* annual average consumption levels (number of kWh used). The impact on an average bill depends on which element is larger. Increases in unit costs affect all households while energy efficiency measures do not. Therefore the average impact masks some variation in the overall change. In addition, the improvements in energy efficiency are nearly always paid for upfront, while the benefits are felt longer term. This means it is important to look at prices as well as bills and at current, and previous, policies.

DECC analysis across the full range of current and previous policies suggests that policies have added around 1% to current electricity bills. This includes the energy efficiency savings from earlier energy bill-funded schemes, the impact of policy on wholesale prices and EU minimum standards of electrical efficiency. These estimates, along with projections to 2030 are set out below. Details of individual policies can be found in the [DECC analysis](#).

Significantly however, DECC's analyses are yet to be updated for 2012, and/or to take into account the announcement of the size of the Levy Control Framework in 2020 (see section 2.8 below). DECC's analysis of the impact of Government policies was produced before the *Energy Bill* was published and other related policy decisions were made. An updated version is expected shortly.

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<sup>41</sup> [Electricity Market Reform: policy overview](#) DECC, November 2012 Cm 8498 p. 13

<sup>42</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 p.32

<sup>43</sup> DECC [Estimated impacts of energy and climate change policies on energy prices and bills](#) November 2011

The ECC Committee recommended that the Government be more up front with consumers and provide political leadership regarding the upward pressures on bills from the need to pay for climate change policies.<sup>44</sup>

#### Estimated impact of Government energy and climate change policies on domestic electricity bills

Real 2010 prices

	Prices (pence per kWh)			Bills (£)		
	2011	2020	2030	2011	2020	2030
<b>Price/bill with no policies</b>	<b>13.0</b>	<b>14.4</b>	<b>15.7</b>	<b>583</b>	<b>644</b>	<b>702</b>
<i>of which: wholesale costs</i>	6.5	7.1	7.0	291	319	313
<b>Impact of policies</b>	<b>+1.9</b>	<b>+3.9</b>	<b>+4.4</b>	<b>+5</b>	<b>-100</b>	<b>+4</b>
Green Deal and ECO <sup>a</sup>	n/a	+0.8	n/a	N/A	+9	-5
Smart Meters	n/a	+0.0	-0.2	N/A	-20	-30
CERT & EEC 1&2	n/a	n/a	n/a	-42	-44	-5
CERT Extension	+0.4	n/a	n/a	+20	-5	-6
CESP	+0.0	n/a	n/a	+0	-1	-1
Better Billing	+0.0	+0.0	+0.0	-2	-2	-2
WHD support cost	+0.1	+0.2	+0.1	-6	-8	-7
Products policy	n/a	n/a	n/a	-25	-158	-136
Merit order effects <sup>b</sup>	+0.3	-0.5	+0.0	+14	-20	+2
EU ETS	+0.5	+1.1	1.3 to 2.8	+23	+49	56 to 127
CPF	n/a	+0.1	1.6 to 0	N/A	+6	70 to 0
RO support cost	+0.5	+1.1	+0.3	+20	+48	+12
EMR support cost	n/a	+0.9	+1.1	N/A	+41	+50
FIT support cost	+0.0	+0.1	+0.1	+1	+6	+6
<b>Price/bill with policies</b>	<b>14.9</b>	<b>18.3</b>	<b>20.1</b>	<b>588</b>	<b>543</b>	<b>706</b>
% change due to policies	+15%	+27%	+28%	+1%	-16%	+1%

Notes: Bill data assumes a pre-policy consumption level of 4,500 kWh per year in each year

(a) ECO support costs only for price impact, bill impacts are net of Green Deal loan repayments

(b) Impact on wholesale prices of power from policies aimed at decarbonising generation

CPF -Carbon Price Floor

Source: *Estimated impacts of energy and climate change policies on energy prices and bills 2011, DECC*

While these policies have pushed up unit costs it is estimated that the reduction in consumption resulting from policies to 2011 virtually wiped out this increase on average bills. In 2020 a 27% increase in unit prices due to bills is expected at the same time as a 16% reduction in average bills (as falling consumption due to energy efficiency measures outweighs prices rises). The impact on bills in 2030 is close to zero as the energy saving measures from some earlier policies start to reach the end of their assumed life.

One of the largest bill savings is said to be legally binding EU minimum standards on products. The upfront costs of buying more energy efficient new TVs, lighting, electric motors etc. are not included in these figures because there is no direct impact on electricity bills.

The Committee on Climate Change (CCC) looked at overall price increases between February 2004 and January 2011, putting the contributory factors into detailed categories.

<sup>44</sup> HC 275-I Energy and Climate Change - First Report of Session 2012-13 Volume I *Draft Energy Bill: Pre-legislative Scrutiny* 23 July 2012 para 217

**Estimated contributory factors to domestic energy price rises Feb 2004 to Jan 2011**

	Gas	Electricity
Overall price increase	121%	79%
% of increase in unit costs due to:		
Wholesale energy	66%	54%
Transmission, distribution and metering	20%	13%
Carbon price	-	9%
Renewables	-	6%
Energy efficiency funding	7%	13%
VAT	5%	5%
Estimated increase in annual bill (2004 to 2010)	£295	£160

Source: Household energy bills – impacts of meeting carbon budgets Committee on Climate Change, December 2011

This analysis found that wholesale costs were the main driver of price rises; however the range of policy-related costs pressures is estimated to have been responsible for 28% of the electricity price rise during this period. Energy efficiency funding will have helped to cut consumption during this period to some extent and this is not factored in here as the percentage shares are for unit costs only. Looking at the future they estimate that domestic electricity *prices* could increase by around 40% in real terms between 2010 and 2020 and around 60% of this is due to energy and climate change policies. Rather than model the impact on consumption of current or previous policies their analysis focuses on all potential changes in electricity use. With no change in consumption real terms average annual bills could increase from £430 to £610. Changes in consumption connected to more efficient products and less wastage have the *potential* to limit this increase to around £65 (15%) on an average bill.<sup>45</sup>

The CCC updated its analysis on 13 December 2012.<sup>46</sup> It estimated that annual household energy bills could increase by £100 in 2020 to support development of low-carbon technologies. The CCC also warned against relying on unabated gas-fired generation, which it said held the risk of electricity bills for the typical household being up to £600 higher than under a low-carbon power system over the next decades (see also section 3.8).

## 2.8 The Levy Control Framework

While the obligations on energy suppliers which are funded through consumers' bills share some elements with 'standard' tax and spend, they have not involved direct revenue generation or direct spending by the Government.

In the 2010 Spending Review the Government included some of this 'levy-funded spending' within a new control framework aimed at ensuring the policies are cost-effective and affordable to consumers. The Treasury document [Control framework for DECC levy-funded spending](#) and a [questions and answers](#) document from DECC give more background.

The Spending Review set an overall cap for DECC's levy-funded spending. This was £2.1 billion in 2011-12, rising to £3.9 billion in 2014-15. It covers the Renewables Obligation, Feed-in Tariffs and the Warm Homes Discount Scheme. Where spending is expected to exceed the cap then DECC needs to agree a plan with the Treasury to bring it down. The large majority of the cap is for the Renewables Obligation, but it was the much higher than expected uptake of the Feed-in Tariffs, largely for solar, that was the first example of

<sup>45</sup> CCC, [Household energy bills – impacts of meeting carbon budgets](#) December 2011

<sup>46</sup> CCC, [Energy prices and bills – impacts of meeting carbon budgets](#) 13 December 2012

'overspends' within the framework that have led to a change in policy. The way the Levy Control Framework works is set out in the box below.

*Control framework for DECC levy-funded spending*

The 2010 Spending Review set an overall cap for DECC's tax and spending through policies that entail levy-funded spending. This cap is managed through the Treasury's control framework.

DECC must set policy such that the central forecast for levy-funded spending is equal to or less than the agreed cap. There is a headroom of 20% of the total cap which represents the level of permissible variation before DECC has to develop urgently plans for bringing policies back into line with the cap.

Where spend exceeds the headroom, DECC must agree a plan with the Treasury to bring spending back down. In the absence of an effective plan, the Treasury could ask DECC to fund all or part of the spending gap from within its Departmental Expenditure Limit.

The policies currently covered by the cap are the Renewables Obligation, Feed-in Tariffs and Warm Home Discount. The budget for the RO within the Spending Review period are as follows:

2011/12	£1,750m
2012/23	£2,256m
2013/14	£2,556m
2014/15	£3,114m

Sources: HM Treasury, Control framework for DECC levy-funded spending, March 2011; DECC, Control Framework for DECC levy-funded spending Questions and Answers, December 2011

Many of the Electricity Market Reforms included in the *Energy Bill* have implications for the levy control framework. An agreement made just before the *Energy Bill* was published set out the framework's budget in 2020/21. This would include spending related to CfDs and the Capacity Market as well as existing policies.<sup>47</sup> The cap in 2020/21 is expected to be around £7.6 billion in 2012 prices or £9.8 billion in cash terms. See also the notes on Clause 13 in section 3.2, below.

## 2.9 Other recent Energy Acts

There were Energy Acts in 2008, 2010 and 2011. In short (the list is not exhaustive and the links are to House of Commons Library standard notes):

- The *Energy Act 2008* included provision for [carbon capture and storage](#), [smart metering](#), [feed-in-tariffs](#), the [Renewable Heat Incentive](#) and several offshore issues.
- The *Energy Act 2010* introduced mandatory social price support (the scheme now operating as [Warm Home Discount](#) in place of voluntary social tariffs). It gave Ofgem

<sup>47</sup> Excludes the Warm Homes Discount Scheme and the Energy Company Obligation element of the Green Deal which have separate spending limits to 2015. According to its Impact Assessment the financial impact of the Capacity Market is not expected until later on in the 2020s

new powers to regulate the energy markets along with its primary objective to take into account the needs of current *and future* energy consumers.

- The *Energy Act 2011* allowed for the **Green Deal** (the Government's 'flagship' energy new efficiency scheme about to be fully in place by end of January 2013), minimum energy efficiency requirements for the private rented sector, measures making information on energy performance certificates more widely available, and an ability for the Secretary of State to require clearer energy company tariffs.

The 2011 Act was intended at one time to be larger (announced as an 'Energy Security and Green Economy Bill' in the Queen's Speech), and to include EMR as well as an EPS and the creation of the Green Investment Bank.<sup>48</sup> The Green Investment Bank was implemented instead through the *Enterprise and Regulatory Reform Act 2012*,<sup>49</sup> and EMR now forms the 'cornerstone' of the current Bill.<sup>50</sup>

### 3 Part 1 of the Bill: EMR

#### 3.1 Chapter 1: Overarching aims

Chapter 1 of the Bill is an addition which partly addresses several ECC Committee recommendations. The key objectives of EMR, discussed above, are energy security, decarbonisation and affordability for consumers. The Secretary of State told the Committee that he thought these were quite clear, but the Committee was unsure that this view was shared by its other witnesses and submissions. It had also heard representations, from WWF and the Committee on Climate Change (CCC), that an explicit decarbonisation target for the electricity sector should be included in the Bill.<sup>51</sup> DECC's response during evidence sessions was that decarbonisation targets were already set under other legislation and described in the accompanying documents to the draft Bill. (However, these are economy-wide, and not specific to the power sector.)

Despite the reassurances, the Committee concluded that the objectives of EMR should be set out on the face of the Bill. It added that greater clarity of the contribution of the power sector to decarbonisation would also be helpful, through a sector-specific 2030 carbon intensity target which should be set in secondary legislation, and based on the recommendation of the CCC. It said that prioritising decarbonisation of the electricity system would likely provide the most cost-effective route to meeting the 2050 target.<sup>52</sup>

**Clause 1** says that when implementing the Bill's provisions, the Secretary of State must 'have regard to':

- His duties under the *Climate Change Act 2008* (which sets the UK's 2050 carbon target of an 80% reduction in carbon emissions by 2050 on 1990 levels, and a 34% reduction by 2020)
- Ensuring security of supply to consumers
- The likely costs to consumers of electricity and

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<sup>48</sup> See House of Commons [Library research paper 11/36, Energy Bill](#) 4 May 2011

<sup>49</sup> The Queen's Speech 2012- [Briefing Notes](#) Cabinet Office 10 May 2012

<sup>50</sup> [Energy Bill Explanatory Notes](#) Bill 100-EN para 5

<sup>51</sup> See for instance [Minutes of Evidence taken on 26 June 2012](#) Q384 onwards and HC 275-I Energy and Climate Change - First Report of Session 2012-13 Volume I [Draft Energy Bill: Pre-legislative Scrutiny](#) 23 July 2012 para 33 onwards

<sup>52</sup> HC 275-I Energy and Climate Change - First Report of Session 2012-13 Volume I [Draft Energy Bill: Pre-legislative Scrutiny](#) 23 July 2012 para 37

- The EU Renewables Directive 2009/28/EC (which sets the 15% of energy from renewable sources by 2020 target)

This goes some way to making the UK's existing legally-binding targets more explicit but does not commit the Government to anything new in that regard. It does however require the Government on the face of the Bill to 'have regard to' the costs to consumers. The ECC Committee wanted 'at minimum cost to consumers', which is a stronger commitment.

The Bill does not as yet set a carbon intensity target for the electricity industry. In its response to the Committee, the Government said that it agreed that a 'least cost pathway' to 2050 was needed.<sup>53</sup> Just before the Bill was published, the Government said it had reached agreement across the Coalition on this issue, and gave an undertaking to bring forward an amendment to the Bill to take 'a power to set a range' in secondary legislation. It will decide whether to exercise this power after taking advice from the CCC on the Fifth Carbon Budget (which runs to 2030), and after setting that Budget in 2016.<sup>54</sup>

### **Reaction**

Caroline Flint MP, Labour Shadow Energy and Climate Change Secretary, said that she supported a clear decarbonisation target on the face of the Bill, and would work with colleagues across the House to that effect. Friends of the Earth urged Members to support any decarbonisation amendment.<sup>55</sup> Commenting before the Bill was laid, WWF called the lack of a decarbonisation target 'seriously disappointing'.<sup>56</sup> The chief executive of the wind turbine maker Vestas, and the Director of Aldersgate, an alliance of 50 major companies, both argued in favour of the certainty that an early decarbonisation target would provide.<sup>57</sup>

See also section 3.8 of this paper, on the EPS.

## **3.2 Chapter 2: Contracts for Difference**

**Clauses 2 to 16** allow for Contracts for Difference (CfD), the key new mechanism proposed to support low carbon generation. The aim is to guarantee a return for investors and generators beyond that which can be provided by a fluctuating wholesale energy price.

Reading the Bill's Clauses and Explanatory Memorandum alone can give little idea of the system envisaged, although more detail is given in the [Contracts for Difference Operational Framework](#), which replaces a draft which accompanied the draft Bill.<sup>58</sup>

### **Clause 2 What is a Contract for Difference?**

**Clause 2** says that the Secretary of State may regulate for CfDs between low carbon energy generators and a counterparty, and that payments under these contracts will be funded by electricity suppliers.

The Government considered three main designs of Feed-in-Tariff (FiT) for EMR, and the merits of these were discussed by the ECC Committee in its 2011 report on EMR.<sup>59</sup> The main alternative to CfDs considered seriously was a 'Premium-FiT', which would have paid a

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<sup>53</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 p.16

<sup>54</sup> DECC Press Notice 2012/146 23 November 2012 [Government agreement on energy policy sends clear, durable signal to investors](#)

<sup>55</sup> [Business Green Updated: Energy Bill - the reaction](#) 29 November 2012

<sup>56</sup> WWF Press release [Lack of decarbonisation target in Energy Bill 'failure of leadership'](#) 23 November 2012

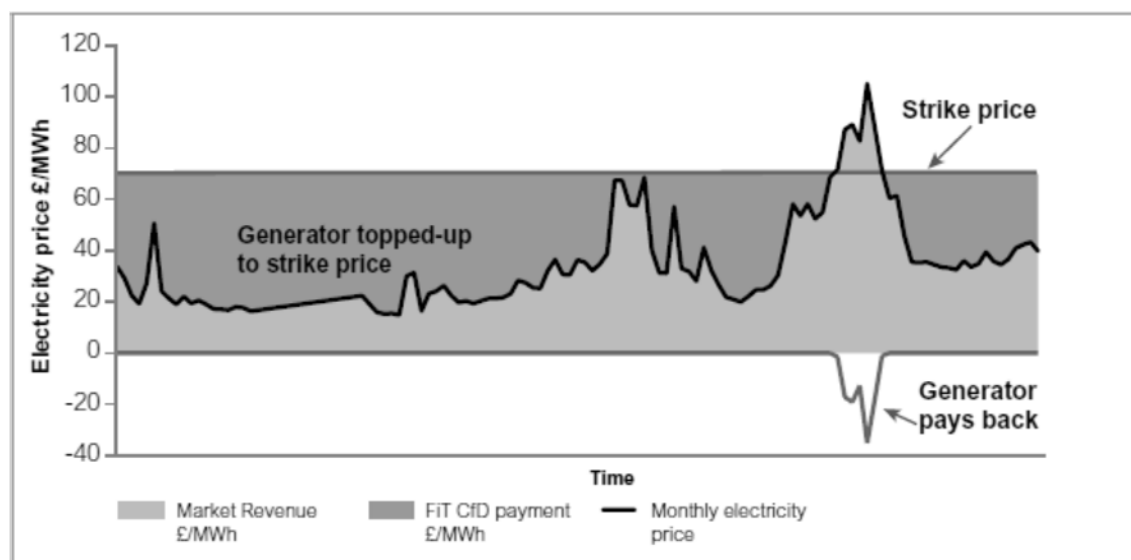
<sup>57</sup> [Independent](#) "Investment in renewable energy has halved in just three years, says alarming research" 3 December 2012

<sup>58</sup> DECC, [Annex A: Feed in Tariffs with Contracts for Difference: Operational Framework](#) November 2012

<sup>59</sup> ECC Select Committee HC 742 Volume I [Fourth Report Electricity Market Reform](#), 16 May 2011 Chapter 5

guaranteed amount above the wholesale price. However, the EMR White Paper said that the Government had settled on a FiT-CfD.<sup>60</sup>

CfDs have the key advantage over fixed FiTs of providing a two-way street. The CfD regime provides stable returns and a guaranteed price for generators at a fixed 'strike price'. Generators receive revenue from selling their electricity into the market as usual. When the wholesale market price (or 'reference price') is below the strike price they receive a top-up payment from suppliers. If the wholesale price is higher than the strike price, generators must pay back the difference. This is in turn paid back to suppliers (allowed for by **Clause 7** of the Bill), potentially increasing value for money for their customers (Figure 1).



**Figure 1—The operation of a FiT with CfD (intermittent generation)**

The ECC Committee heard some concerns that CfDs were not the ideal FiT design for all forms of low carbon generation. It had suspicions that they were being used across the piece partly to help UK support for new nuclear pass EC State Aid approval as part of a wider package. In other words, EMR was acting as a 'fig leaf' for new nuclear.<sup>61</sup> Use of only one type of FiT also meets the Government's policy of "no levy, direct payment or market support for electricity supplied or capacity provided by a private sector new nuclear operator, unless similar support is also made available more widely to other types of generation".<sup>62</sup>

### **Setting the strike price**

Clearly, the level at which the strike price is set is critical and the ECC Committee called for clarity on this beyond 2017 as soon as possible. The Government intends that the strike price will eventually be set through a competitive process. However, this is not currently possible for practical reasons. For example, there would not be enough participants to run a meaningful competition in new nuclear generation.

In the 'near term', before the introduction of competitive processes, prices for all low-carbon technologies will be set through an administrative process. For renewables, the Government plans to consult in summer 2013, so that strike prices for the first five years of CfD will be

<sup>60</sup> DECC [Energy White Paper Planning Our Electric Future: a White Paper for secure, affordable and low carbon Electricity](#) CM 8099 12 July 2011 p 37 and Annex B

<sup>61</sup> HC 275-I Energy and Climate Change - First Report of Session 2012-13 Volume I [Draft Energy Bill: Pre-legislative Scrutiny](#) 23 July 2012 para 140 on

<sup>62</sup> [HC Deb 18 October 2010 c42WS](#)



published by the end of 2013, in the 2013 'Delivery Plan'. The process has already begun via a call for evidence by National Grid. Strike prices for renewables beyond 2018/19 will be provided in the annual updates to the delivery plan.<sup>63</sup>

Therefore, while a signed CfD provides certainty of income, it will still be possible for Government to alter the level of strike price for *subsequent* contracts. Despite the Committee's calls for clarity post-2017, the Government says it will offer strike prices for only up to five years ahead, because of the potential for costs to change, with learning effects.<sup>64</sup> So a generator signing a CfD in 2020 may not receive as much as a generator signing a contract in 2014.

It remains the Government's intention to move to competitive tenders or auctions to set strike prices 'as soon as practicable', possibly as early as 2017 for some renewable technologies. The Government's aim is to move to 'technology-neutral' auctions in the 2020s.<sup>65</sup>

In the meantime, the other main low-carbon technologies are carbon capture and storage (CCS) and nuclear. These are going to be set through negotiation over their contracts (or there could be 'some form of competition depending on the particular circumstances').<sup>66</sup> CCS is undergoing its own general competition process and is yet to prove large scale feasibility, but negotiations on the first nuclear strike price, taking place in a non-competitive market, may conclude very soon (see section 3.5 on Part 1, Chapter 5).

Once a generator has signed the contract, they will receive the agreed strike price for each MWh (megawatt hour) of electricity generated for the duration of the contract. DECC proposes that this will be 15 years for renewables and 10 years (or varying) for CCS, but has not yet determined how long nuclear CfDs will last for.<sup>67</sup>

### **Clauses 3 and 4 The Counterparty**

The ECC Committee heard mixed views, from witnesses with different interests, on the pros and cons of CfDs as opposed to other forms of FITs during its scrutiny of the draft Bill. On balance, it felt CfDs could be made to work, but not in the complex manner in which they were presented in the draft Bill.

A CfD is, at its simplest, a contract. One of the main concerns held by very many witnesses was that there could be no legally binding contract with the 'multiparty counterparty' model proposed in the draft Bill. This envisaged that the CfD would be an instrument created by statute that set out obligations on generators on one side, and on all licensed suppliers on the other side, with some form of settlement body in the middle. Some witnesses to the Committee said they had seen advice that this would be legally unenforceable. Vincent de Rivaz, CEO of EDF Energy told the Committee:

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<sup>63</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 p.12

<sup>64</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 p.12

<sup>65</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 p.12 and [Electricity Market Reform: policy overview](#) DECC, November 2012 Cm 8498 p. 16

<sup>66</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 p.13

<sup>67</sup> draft Energy Bill Annex B, pp 55-57

To be clear the initial proposal was a virtual counterparty. It was not really existing, so I think it should not be too hard for your Committee to convince the Government to move to the alternative solution that we have just described.<sup>68</sup>

The Government has accepted the overwhelming concerns from industry and investors on this, and the Bill now proposes a single counterparty for generators to sign contracts with, which will be a Government-owned company. This is now provided for by **Clauses 3 and 4**, and will allow for private law contracts between a generator and a single counterparty body.<sup>69</sup> The aim is that once the contract has been agreed, it will not be possible for Government (or a new Government) to make retrospective changes to the contract, other than under pre-arranged circumstances. The Government says it;

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.<sup>70</sup>

### ***Clause 5 The supplier obligation, and 'underwriting' CfDs***

**Clause 5** sets out supplier obligations. Suppliers will be required to pay levies to the counterbody so that it has the funds to pay the generators. However, there is also the possibility of default, and the Clause also requires suppliers to post collateral.

The draft Bill proposed that liabilities would be borne by energy suppliers under the multiparty model. Again, many witnesses to the Committee had difficulties with this because they had understood that Government would be 'underwriting' CfDs. The Committee agreed that Government underwriting would be the best way to instil investor confidence and reduce the costs of capital, and felt that HM Treasury views had prevailed over DECC's.<sup>71</sup> Some witnesses to the Committee (e.g. SSE, RWE npower, Green Alliance) thought that the issue of State Aid clearance might be underlying the Government's reluctance to be the counterparty: SSE said that if the Government acted as such, this would lower the cost of capital but this would probably be State Aid.<sup>72</sup>

The Government is still declining to underwrite the contracts;

Whilst the counterparty will be owned by Government, payments will always come from suppliers to match payments to generators. The obligation on suppliers to pay will be a requirement of their licences, regulated by Ofgem. The risk of supplier default impacting on payment flows will be mitigated by a series of backstops including the advance posting of credit and collateral to cover any payment period and the mutualisation of any losses across suppliers. In the event of an insolvency, the supplier of last resort regime (which effectively moves customers to a new supplier), and the Energy Company Administration Scheme (whereby an administrator continues to supply and meet obligations), would be in place to ensure that payments would continue. We believe these measures are sufficient.<sup>73</sup>

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<sup>68</sup> [Minutes of Evidence taken before the ECC Committee](#) 12 June 2012 Q59

<sup>69</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 p.9

<sup>70</sup> [Electricity Market Reform: policy overview](#) DECC, November 2012 Cm 8498 p. 17

<sup>71</sup> Paras 76-79 of the ECC Committee's report discuss this

<sup>72</sup> [Minutes of Evidence taken before the ECC Committee](#) 12 June 2012 Q24 and Q66 and [Minutes of Evidence taken before the ECC Committee](#) 19 June 2012 Q245

<sup>73</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 p.9

The requirement to post collateral is likely to be contentious where it involves small suppliers who are trying to compete with the big 6. The ECC Committee said that small suppliers should be exempted. In response, the Government says it has set out [more detail on the supplier obligation including a call for evidence](#) so that small suppliers can detail the impacts, including those of posting collateral, on their businesses.<sup>74</sup>

### **Clause 6 and allocating CfDs**

**Clause 6** gives the Secretary of State and National Grid (which is the CfD ‘delivery body’, see section 3.4), the power to direct the counterparty to enter into CfDs. This will normally be done in accordance with the Regulations laid under **Clause 2**, but more flexibility may be needed for particular projects. The Clause allows for allocation of CfDs according to technologies and for contract allocation via a competitive process, such as an auction, and for an appeals process if a CfD is not awarded.

After the Secretary of State sets the strike price, CfDs will be allocated by National Grid. The draft Bill and draft Operational Framework envisaged that developers would be able to receive CfDs only after they had reached ‘financial close’ on a project, to reduce the risk of developers being allocated CfDs and then not completing development.

To give developers earlier reassurance regarding the likelihood of gaining CfDs, they can now apply earlier in the process than envisaged in the draft Bill, ‘well ahead of financial close’ according to DECC. For example, a wind developer could apply for a CfD once they have obtained planning permission and a grid connection agreement.<sup>75</sup> They will then need to ‘complete a small number of further hurdles post-CfD award’ to retain the contract. This new two stage process meets one of the ECC Committee’s recommendations towards reducing the development risk, of investing much time and money in a project that might not then be awarded a CfD.<sup>76</sup>

There is little detail on how allocation will be determined in practice, other than initially ‘first come first served’ basis before moving to allocation rounds ‘once a significant proportion of the available budget is likely to be allocated’.<sup>77</sup> DECC’s Operational Framework says that:

The Government will define the principles for the allocation process to be run by the System Operator. This will include the criteria on which the system will move from allocating CfDs on a ‘first-come-first-served’ basis to allocation using rounds, auctions or other competitive processes, and the mechanisms used to remain within the existing Levy Control Framework and the budget determined by the Government.<sup>78</sup>

This raises one of the main concerns the ECC Committee had about the allocation of CfDs, which was the effect of HM Treasury’s Levy Control Framework limiting the funds, and therefore CfDs, available (see notes on Clause 13, below).

### **Clauses 7 to 12**

These include various mechanisms required to make CfD work, some of which will be implemented through Regulations:

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<sup>74</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 p.27; [Call for evidence at DECC, Annex A: Feed in Tariff with Contracts for Difference Operational Framework](#) November 2012

<sup>75</sup> See figure 2 and pp 21 and 22 for the allocation process in DECC, [Annex A: Feed in Tariff with Contracts for Difference Operational Framework](#) November 2012

<sup>76</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 p.11

<sup>77</sup> [Electricity Market Reform: policy overview](#) DECC, November 2012 Cm 8498 p. 16

<sup>78</sup> DECC, [Annex A: Feed in Tariff with Contracts for Difference Operational Framework](#) November 2012 p.12

- the ability of the counterparty to pay back monies to suppliers if the reference price rises above the strike price (Clause 7)
- the ability of the counterparty to make payment to generators where there has been a supplier obligation shortfall, perhaps because of supplier default (Clause 8)
- monitoring data and information, allowing the Secretary of State to demand information or advice from the System Operator (Grid), the System Operator in Northern Ireland, or the counterparty, generators and suppliers (Clause 9)
- the power for Ofgem to make determinations (Clause 10)
- the power of the Secretary of State to permit variations on the side of the counterparty; the counterparty will not be able to vary a CfD without the Secretary of State's permission. The Explanatory Notes stress that this will not allow any CfD to be varied without the consent of the generator in question (Clause 11)
- making supplier obligations under CfD enforceable by the regulators (Ofgem and the Northern Ireland Authority for Utility Regulations); breaches will be equivalent to breaches of their Licence Conditions which means suppliers can be fined, etc. (Clause 12)

### **Clause 13 and the 'levy cap'**

**Clause 13** allows the Secretary of State to make an order setting out the maximum costs of the scheme. CfDs will fall under HM Treasury's Levy Control Framework (see section 2.7 for an explanation of the levy).

The ECC Committee heard from many witnesses who were concerned that the allocation or strike price of CfDs would be effectively capped by this system. The Committee was greatly concerned that in effect this might mean Treasury funding rules 'trumping' the aims of EMR and thus the legally-binding decarbonisation requirements of the *Climate Change Act 2008* and EU Renewables Directive. The Committee received reassurances from the Secretary of State on the primacy of legal obligations, but did not hear from Treasury Ministers.<sup>79</sup>

Just before the *Energy Bill* was published the Government set out what the levy cap would be in 2020, under what it described as agreement across the Coalition on this and on a package of other measures;

The amount of market support to be available for low carbon electricity investment (under the Levy Control Framework) up to 2020 has also been agreed. This will be set at £7.6 billion (real 2012 prices) in 2020, which corresponds to around or £9.8 billion (nominal 2020 prices).<sup>80</sup>

The Government says this is 'broadly in line with' the CCC's recommendations (which were around £8 billion) and has not provided any further commentary to the ECC Committee's questions on this.<sup>81</sup> Apart from the overall magnitude of the cap, the ECC Committee also sought clarification about the cap annually in the interim spending period (2016-2019), whether there would be more 'headroom' allowed than the current 20%, and whether the current annual and longitudinal capping of expenditure by line might be relaxed.

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<sup>79</sup> HC 275-I Energy and Climate Change - First Report of Session 2012-13 Volume I *Draft Energy Bill: Pre-legislative Scrutiny* 23 July 2012 paras 30-32 and 103-115

<sup>80</sup> DECC Press Notice 2012/146 [Government agreement on energy policy sends clear, durable signal to investors](#) 23 November 2012

<sup>81</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 p.15

**Clauses 14-16** make fairly technical provisions. They require consultation with suppliers, National Grid and the Regulators before making secondary legislation (**Clause 14**); make it clear that neither the Secretary of State nor National Grid is a 'shadow director' of the counterparty (**Clause 15**) and allow transmission and distribution Licence Conditions to be modified to allow for settlement and payment purposes (**Clause 16**).

Appendix 2 to this paper includes an assessment of the Government's impact assessment for CfDs.

### 3.3 Chapter 3: Capacity Market

The 'capacity margin' is the excess of installed generation over demand.<sup>82</sup> If the capacity margin is low, there is a risk of supply shortfall; this is perhaps the aspect of energy security most associated in peoples' minds with 'keeping the lights on'.

DECC and Ofgem have produced an annual *Statutory Security of Supply Report* (formerly known as '*Energy Markets Outlook*') for some years now, and a new *Energy Security Strategy* was also produced for the first time alongside the Bill.<sup>83</sup>

In October 2012 Ofgem also produced its first *Electricity Capacity Assessment*, as required by the *Energy Act 2011*, which amended the *Electricity Act 1989* to require Ofgem to produce an annual capacity assessment by 1 September every year, starting in 2012. This said:

The high level of spare capacity in the GB electricity market is set to end quite rapidly over the next few years.<sup>84</sup>

It reiterated findings in Ofgem's earlier one-off *Project Discovery* report which first highlighted the need for massive investment in energy infrastructure, the impacts on household bills, and the consequences of existing energy plant coming to the ends of their lifetimes.<sup>85</sup>

Ofgem's latest (October 2012) assessment is that under its 'base case', while there are significant uncertainties, especially around gas (how many new gas plant will be built and how many will come out of moth-balls), broadly, the risks to electricity security of supply will increase in the next four years as spare capacity decreases. Old plants (11 gigawatts, GW) are being replaced by new wind (5 GW) and biomass generation, and notably, older coal and all oil plant will close under the EU Large Combustion Plants Directive. While demand is expected to remain broadly flat in Ofgem's base case, as coal and oil generation comes off stream the amount of spare capacity on the system could fall from around 14% now to 4% in Winter 2015/16.<sup>86</sup>

Ofgem's findings were reported widely in October 2012.<sup>87</sup> However, the findings are not new. The EMR White Paper talked about "uncomfortably low capacity margins towards the end of the decade", perhaps to below 5%. It said DECC was consulting on the type of 'capacity mechanism' to be introduced, including demand side response (DSR, see section

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<sup>82</sup> Ofgem, *Electricity Capacity Assessment* 5 October 2012

<sup>83</sup> DECC/Ofgem *Statutory Security of Supply Report* November 2012 and DECC *Energy Security Strategy*, November 2012 Cm 8466

<sup>84</sup> Ofgem, 5 October 2012

<sup>85</sup> Ofgem *Project Discovery Options for delivering secure and sustainable energy supplies* 3 February 2010

<sup>86</sup> Ofgem, *Electricity Capacity Assessment* 5 October 2012

<sup>87</sup> E.g. 'Millions at risk of blackouts in three years, warns Ofgem', *The Daily Telegraph* 6 October 2012 p.16 'Fast track Wylfa B to keep lights on; plea as Britain faces energy shortfall within 3 years' *Daily Post*, 6 October 2012; 'Winter power cuts feared as Britain runs out of energy'; *The Express*, 6 October 2012 p.6; 'UK 'at risk of electricity blackouts by 2015' due to EU's green laws and power station closures' *MailOnline*, 5 October 2012

8.2), as well as generation.<sup>88</sup> The EMR White Paper posed two options for a GB-wide system:

The first is a targeted mechanism in the form of a Strategic Reserve, a development of the lead option from the December 2010 Electricity Market Reform consultation document, designed to address stakeholder concerns. This comprises centrally-procured capacity which is removed from the energy market and only utilised in certain extreme circumstances.

The alternative would be a market-wide mechanism in which all providers willing to offer reliable capacity are provided incentives to do so. Under both options, we plan to ensure a fair and equivalent treatment of demand side resources such as storage and demand side response, alongside generation, with the aim of securing best value investment across the power system.<sup>89</sup>

In its December 2011 [Technical Update to the White Paper](#) and IA on a capacity mechanism, DECC said that the Government had decided to legislate for the second option, a capacity mechanism in the form of a Capacity Market.<sup>90</sup> The reasons for preferring this option are to do with the 'slippery slope' of having a strategic reserve instead:

The analysis set out in the December 2011 Capacity Mechanism Impact Assessment indicated that a Strategic Reserve is not as robust as a Capacity Market to a range of security of electricity supply scenarios. This is principally because of the risk of 'slippery slope' associated with the Strategic Reserve. This is where the size of the Strategic Reserve grows significantly as a result of plant seeking to join the Reserve, undermining effective market operation and increasing costs to consumers.<sup>91</sup>

The reserve would be held outside the market and used only in emergencies, but at times of high prices those plant and investors still in the main market would have concerns about the reserve being deployed, dampening the prices and revenues they could expect. A strategic reserve would also make it hard for DSR to take part. The Government has confirmed, conversely, that its current capacity market proposals include DSR and storage being able to compete alongside generation 'in the near term'.<sup>92</sup>

Some DECC [FAQs](#) explain in simple terms how this would work:

Providers of capacity – including existing and new plant, and potentially non-generation technologies such as demand side response and storage – enter into an auction to secure contracts for providing capacity.

If providers of capacity are successful in the auction, they receive, in the delivery year, a payment to provide reliable capacity when needed, and are penalised if they fail to deliver.<sup>93</sup>

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<sup>88</sup> DSR is a short term reduction in electricity consumption either through actively shifting it to another period, using another type of generation, or not using electricity at that time.

<sup>89</sup> DECC, [Energy White Paper Planning Our Electric Future: a White Paper for secure, affordable and low carbon Electricity](#) 12 July 2011 CM 8099

<sup>90</sup> DECC, [Technical Update to its White Paper on Electricity Market Reform](#), 15 December 2011 and DECC, [Capacity Mechanism Impact Assessment](#), 15 December 2011

<sup>91</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 p.23

<sup>92</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 p.22

<sup>93</sup> DECC [EMR Technical Update - FAQs](#)

The ECC Committee called for more certainty over how and when a capacity market might be introduced, because it felt that having once raised this as a possibility, the subsequent lack of detail was risking a hiatus in investment.<sup>94</sup>

[Annex C Capacity Market: Design and Implementation Update](#) issued alongside the Bill gives the latest thinking on how this will work.<sup>95</sup>

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. The inclusion of DSR and storage may involve running preparatory mini-auctions for DSR and storage to build their capability, and help them compete with generation, perhaps in 2014, 2015 and 2016. However, the detailed design is still being developed, and final proposals will be published in May 2013.<sup>96</sup>

**Clauses 17-28** deal with setting up a ‘Capacity Market’. Specifically, **clauses 17 and 18** allow the Secretary of State to make ‘electricity capacity regulations’ under which ‘capacity agreements’ may be made between capacity providers and electricity suppliers. The clause refers to ‘capacity providers’ and not just generators, because this capacity may be provided not only through generation, but also by storage or by DSR. **Clause 19** allows for ‘capacity auctions’ to take place.

**Clauses 20-29** deal with some of the more technical aspects of establishing a capacity market. **Clause 20** allows for settlement (as in the balancing and settlement that Elexon currently undertakes for the market; see section 2.2), and may also require capacity providers or suppliers to post collateral.

**Clause 21** says that the electricity capacity regulations may confer functions on Ofgem or on National Grid. As in the earlier proposals,<sup>97</sup> it remains the intention that the Capacity Market will be administered by the System Operator, National Grid.<sup>98</sup> (See next section.)

The remaining Clauses in this chapter deal with other requirements that may be placed on suppliers or capacity providers (**Clause 22**), the provision of information and advice (**Clause 23**), enforcement and dispute resolution (**Clause 24**) and the necessary Licence modifications (**Clause 25**).

**Clause 26** gives the Secretary of State the power to ‘amend or repeal’ the parts of the *Electricity Act 1989* and *Energy Act 2011* that require the annual security of energy and security of electricity supplies.

**Clause 27** extends Ofgem’s general duties to its new Capacity Market functions, and **Clause 28** says that as well as consulting Ofgem and suppliers on any regulations, the first set of any electricity capacity regulations made must be approved by both Houses.

Appendix 2 to this paper includes an assessment of the Government’s impact assessment for the capacity market.

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<sup>94</sup> HC 275-I Energy and Climate Change - First Report of Session 2012-13 Volume I [Draft Energy Bill: Pre-legislative Scrutiny](#) 23 July 2012 Chapter 5, para 160 onwards

<sup>95</sup> DECC, [Annex C Capacity Market: Design and Implementation Update](#) November 2012

<sup>96</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 p.22

<sup>97</sup> DECC, EMR: Capacity Market—Design and implementation update, Annex C, May 2012, p 5

<sup>98</sup> DECC, [Annex C Capacity Market: Design and Implementation Update](#) November 2012

### 3.4 Chapter 4: Conflicts of interest

**Clauses 29-32** are in the Bill because the System Operator, National Grid, is to be the ‘delivery body’ for EMR and will administer CfDs and the Capacity Market.

National Grid will administer the allocation of most ‘general’ CfDs (i.e. unless these are made under special cases such as early nuclear negotiations or CCS arrangements) and it will run the Capacity Market’s capacity auctions, also deciding how much capacity to contract for. It will also advise the Government on setting the strike prices while these are being set administratively.<sup>99</sup>

National Grid will be overseen in many regards by Ofgem, with equivalent arrangements in Northern Ireland. Nevertheless, National Grid plc is a private company which owns and operates the electricity transmission network in England and Wales (the high voltage electricity network - the grid), and *operates* it only in Scotland (balancing the system). It also owns *and* operates the gas transmission (high pressure) network *across* the UK, as the sole UK owner and operator. It also owns gas distribution networks across about half of GB, plus other businesses (e.g. liquid natural gas storage, interconnectors, and gas metering).<sup>100</sup> While National Grid does not own nor operate any UK generation, it clearly has commercial interests in the industry in a way that the Regulator Ofgem, for example, does not.

The ECC Committee said it was not appropriate for a private company, ultimately motivated by profit making, to act as the EMR delivery body. It considered that this suggestion would lead to considerable conflicts of interest for National Grid, and possibly increased costs to consumers. It recommended that a new independent, not for profit, company be established.

The Government however is sticking to the line it took in the EMR White Paper and [Technical Update to the White Paper](#) published in December 2011, when it proposed that National Grid would operate both the capacity mechanism and contracts for difference.<sup>101</sup> The Government says it “remains of the view that there are considerable synergies between the EMR delivery functions and the technical, commercial and financial expertise that National Grid possesses in its role as System Operator”.<sup>102</sup>

At the same time the Government says it recognises industry concerns and the potential for conflict, and notes that views were sought via an open letter issued by Ofgem in March 2012.<sup>103</sup> In addition to this, a joint DECC/Ofgem [Consultation on synergies and conflicts of interest](#) is now open (to 29 January 2013), alongside the Bill. The consultation document also outlines possible mitigating actions.<sup>104</sup>

A final joint report from DECC and Ofgem arising from the consultation is expected in early 2013, but in the meantime the Bill provides powers for business separation measures within Grid if necessary (**Clause 29**), and to be able to transfer EMR delivery functions to another body if necessary, for example because of unsatisfactory performance (**Clauses 30 and 31**).

The Government says that National Grid is already, however, subject to appropriate separation of parts of its business with oversight by Ofgem, and has an appropriate governance framework. **Clause 32** extends Energy Administration Orders under the *Energy*

<sup>99</sup> [Electricity Market Reform: policy overview](#) DECC, November 2012 Cm 8498 p.22

<sup>100</sup> National Grid website; [where we operate](#) page

<sup>101</sup> DECC [Planning our electric future: Technical Update](#) 15 December 2011

<sup>102</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 p.17

<sup>103</sup> [Letter from Ofgem/DECC](#) 8 March 2012

<sup>104</sup> DECC/Ofgem [Synergies and conflicts of interest arising from the Great Britain System Operator delivering Electricity Market Reform Consultation Document](#) November 2012



*Act 2004* to the EMR functions of National Grid. (These allow for courts to appoint an energy administrator upon application by the Secretary of State, as an alternative to general insolvency law to ensure uninterrupted essential services in the event of a company becoming insolvent.)

### 3.5 Chapter 5: Investment contracts

The CfD regime will not come into effect for some time; the Government says it is on track to start letting CfD contracts in 2014.<sup>105</sup> But with capacity margins becoming uncomfortably low, as described in section 3.3, there is some urgency to start the process sooner of bringing new generation onto stream, particularly for projects with a long lead-in time such as nuclear. This is to help companies take a so-called 'Final Investment Decision' (FID) ahead of the regime being fully in place, so DECC calls this the 'FID-enabling process'.

#### **Clause 33 Setting the nuclear strike price and investment contracts**

**Clause 33** is very short and is the only Clause in this Chapter. It says that Schedule 3 has effect.

**Schedule 3, paragraph 1** introduces 'investment contracts' which is the new name for what were 'investment instruments' in the draft Bill, and are also now described as 'early-CfDs'.

They are contracts that generators will enter into with the Secretary of State before the CfD regime and CfD counterparty come into being. They will involve the parties to the contract making payments based on the difference between a strike price and reference price. The strike price will be specified in or determined under the contract, and the contract must be laid before Parliament. However, the Secretary of State can redact any confidential information from the contract. 'Confidential information' is defined in the Schedule's **paragraph 3**. The strike price or reference price cannot be confidential information.

Under **paragraph 5**, the Secretary of State may designate an 'eligible person' to be the investment contract counterparty by statutory instrument, and under **paragraph 6** may make further provision by regulations. These may include implementing the supplier obligation for investment contracts (the equivalent of the supplier obligation for general CfDs provided for by **Clause 5** of the Bill).

The first investment contract to be made under the FID-enabling process was likely to have been that between the Government and 'Nuclear Newbuild Generation Company Limited', a subsidiary of EDF and Centrica, for Hinkley Point C. This now looks less certain; an announcement on the Hinkley C contract and nuclear strike price was initially expected by the end of 2012 but may now be in February 2013 or even later.<sup>106</sup>

The ECC Committee heard from both Centrica and EDF during its pre-legislative scrutiny. While EDF told the Committee that "the strike price will not be defined in a cosy way through hidden decisions" most other witnesses were unconvinced on that point. Given the dearth of competition in nuclear, the Committee was very concerned that the Government should be able to demonstrate value for money when agreeing the strike price for Hinkley. It also wanted the process to be as transparent as possible so as not to disadvantage other future 'players'. It recommended that a panel of experts should scrutinise the strike price setting,

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<sup>105</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 p.13

<sup>106</sup> *Independent*, 'UK close to key deal on price of nuclear power' 29 October 2012 and *The Guardian* 'Nuclear giant EDF postpones decision on new Hinkley Point reactor' 7 December 2012

and specifically said that it thought a nuclear strike price above that given to offshore wind would not represent value for money for consumers.<sup>107</sup>

As well as the requirement in Schedule 3 for the contract to be laid before Parliament, (albeit with commercially confidential information hidden, but to include the strike price), the Government says it will commission external advisors to conduct an ‘open book’ scrutiny of the developer’s documentation and will publish a summary of this report. It will also publish a value for money assessment and a ‘fairness opinion’ obtained from financial advisors.<sup>108</sup>

While Hinkley C may be delayed, on 4 December 2012 EDF announced that it will extend the lives of Hinkley Point B and Hunterston B power stations which are now expected to remain operational until at least 2023.<sup>109</sup>

Appendix 2 to this paper includes an assessment of the Government’s impact assessment for investment contracts.

### 3.6 Chapter 6: Access to Markets, and liquidity

#### **Clause 34: Liquidity**

‘Liquidity’ and ‘access to markets’ may sound obscure but it is what EMR is really about, for those who urge radical reform to help smaller independent companies break into the big 6-dominated market (see section 2.1). Barry Gardener MP has said, for example:

Vertical integration allows a utility company to generate the electricity under one arm of the company, which it sells through an intermediary—often offshore—which they also own, and then on-sells to another arm of the corporation, which supplies it to us as the consumer. The result is a total lack of transparency in the true cost of electricity. All the big six operate similar structures, which prevent real competition and stop new entrants coming into the market.<sup>110</sup>

Ofgem has been concerned about market opacity and profit margins for some time now, and has been conducting work under its [Retail Market Review](#) towards making the wholesale markets more ‘liquid’ and encouraging new entrants and more competition.<sup>111</sup>

It is difficult even for Ofgem to assess the profits energy companies are making, because they hedge their prices by buying ahead and so on, and so one cannot simply compare the market price at any given time to a company’s supply prices to gauge profit. It is very hard, in other words, to know what reference price to measure profits against. In December 2012 Ofgem issued a consultation on a ‘Secure and Promote’ Licence Condition. This would aim to ‘lock-in’ some recent voluntary industry moves (e.g. some increased trading on day-ahead auctions, although as Ofgem notes, it is not even clear how far this helps overall market liquidity). Ofgem said it also wanted to develop a ‘Mandatory Auction’ idea as an intervention if needed. The consultation closes on 15 February 2013.<sup>112</sup> In the meantime, the Bill provides powers for the Secretary of State to improve wholesale market liquidity if necessary.

<sup>107</sup> HC 275-I Energy and Climate Change - First Report of Session 2012-13 Volume I [Draft Energy Bill: Pre-legislative Scrutiny](#) 23 July 2012 para 131 onwards

<sup>108</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 p.20

<sup>109</sup> EDF press release [EDF Energy announces seven year life extension to Hinkley Point B and Hunterston B nuclear power stations](#) 4 December 2012

<sup>110</sup> HC Deb 3 November 2011 c366WH onwards, comments at c374WH

<sup>111</sup> Ofgem, [Retail Market Review documents homepage](#)

<sup>112</sup> Ofgem, [Wholesale power market liquidity: consultation on a ‘Secure and Promote’ licence condition](#) 5 December 2012

**Clause 34** allows the Secretary of State to modify Licence Conditions for generators and suppliers. These powers may be used to facilitate participation in the wholesale market, or to promote liquidity in that market.

Under subsection (3), licence modifications may impose conditions about the sale or purchase of electricity to or from group undertakings. Obligations may also be imposed to require companies to sell or buy electricity on certain terms; the example given in the Explanatory Memorandum is to sell a proportion of electricity on a particular [power] exchange or to sell particular products at particular times. Finally, obligations may require companies to disclose or publish information about transactions in the wholesale electricity market.<sup>113</sup>

The Clause also allows the Secretary of State to modify the Balancing and Settlement Code (see section 2.2) as necessary.

### ***Clause 35: Routes to market post- the Renewables Obligation***

The Renewables Obligation (RO) is the current subsidy to support renewable generation. Under the RO, electricity suppliers have to source a proportion of their generation from renewable sources – the proportion increases annually. Renewable generators earn certificates - Renewable Obligation Certificates (ROCs) - for the production of electricity. Energy suppliers purchase these certificates to meet their requirement to source electricity from renewable sources. One ROC in 2009/10 was ‘worth’ £52 to electricity suppliers, and it is through the sale of these certificates to energy suppliers that renewable generators get their subsidy. Suppliers pass on the costs of ROCs to their customers through bills.<sup>114</sup>

The RO provided an incentive for larger energy companies to enter into long-term contracts called Power Purchase Agreements (PPAs). Through these, smaller generators (particularly intermittent generators) sell power at a discount in exchange for managing their risk. The ‘off-taker’ or ‘PPA provider’ takes on this risk. PPAs are important particularly for smaller generators who do not have a large in-house trading capacity, or for intermittent generators. A PPA with a credit-worthy counterparty is usually required before lenders will provide finance for a project.<sup>115</sup>

The ECC Committee heard that smaller renewable and gas generators were currently having trouble securing PPAs, and that independent generators were concerned that they would not be able to obtain PPAs under the new regime. Even if independents do secure PPAs, there is concern that the price they receive will be discounted more heavily than now below the market price, to reflect the PPA providers’/off-takers’ increased risks, reducing the price that small renewable generators may receive.<sup>116</sup>

The July 2011 EMR White Paper acknowledged possible problems with routes to market and PPAs. While the documentation that accompanied the draft Bill said that “In time a competitive market should provide bankable routes to market for independent generation projects,” it also undertook to publish a call for evidence.<sup>117</sup>

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<sup>113</sup> [Energy Bill Explanatory Notes Bill 100-EN para 184](#)

<sup>114</sup> House of Commons Library Standard Note SNSC5870 [The Renewables Obligation](#) describes the RO in more detail

<sup>115</sup> DECC Draft Energy Bill [Annex B Feed-in Tariff with Contracts for Difference: Draft Operational Framework](#) pp 82-83 and DECC [A call for evidence on barriers to securing long-term contracts for independent renewable generation investment](#) 5 July 2012

<sup>116</sup> HC 275-I Energy and Climate Change - First Report of Session 2012-13 Volume I [Draft Energy Bill: Pre-legislative Scrutiny](#) 23 July 2012 paras 118 onwards and 59-64

<sup>117</sup> DECC Draft Energy Bill [Annex B Feed-in Tariff with Contracts for Difference: Draft Operational Framework](#) pp 81-85

This [call for evidence](#) was produced in July 2012. DECC seems to have become increasingly convinced that a problem does exist in the current market and while the focus is on independent renewable generators, DECC is also concerned about non-renewable independent generators. The call for evidence noted that:

Developers have reported that the PPA market has deteriorated and that there is a risk of an investment hiatus.<sup>118</sup>

The call for evidence closed on 16 August and in its response to the ECC Committee the Government said that the evidence received supports the views of independent generators that the market has shifted in recent years. Large suppliers can currently meet their renewable obligations from their own generation and existing PPAs, for example. Similarly, independent gas suppliers find that large energy companies are concentrating on their own gas generation.<sup>119</sup>

While the Government still maintains that the CfD regime should improve the PPA situation, and that “a competitive PPA market is likely to develop” it acknowledges transitional uncertainties around the end of the RO. Therefore, if it becomes clear the EMR and a market led approach have not led to an effective market for PPAs and that market does not develop as anticipated, then the Government says it will use powers in the Bill.<sup>120</sup>

**Subsection (3) of Clause 35** allows the Secretary of State to make Licence Condition modifications to impose obligations on suppliers, such as an obligation to offer a PPA to an eligible generator or to participate in a PPA auction.

### 3.7 Chapter 7: The Renewables Obligation: Transitional arrangements

**Clause 37** inserts a long amendment into the *Electricity Act 1989* to deal with the transition from the RO to CfDs.

Once the CfD regime is available, there will be a transition phase where new renewable generation can choose between the RO or a CfD. This will be in place from the beginning of CfD availability until 31 March 2017. Beyond 2017, the RO will be closed to new generating capacity.

For existing ROCs once the scheme closes, the obligation on suppliers to buy the ROC will be transferred to a ‘purchasing body’ to purchase the ROC at a fixed price, to reduce the risk of volatility in the price of ROCs over the final years of the RO.<sup>121</sup>

Under **Clause 37**, ‘GB and NI certificates’ will be issued in place of ROCs. The purchasing body for ‘GB certificates’ is likely to be Ofgem, although **Clause 37** says it may also be the Secretary of State or CfD counterparty. Similarly, in Northern Ireland (NI) the Northern Ireland Authority for Utility Regulation will probably purchase ‘NI certificates’. Although the price will be fixed it may be adjusted for inflation, and different purchase prices may be set for different periods. A levy on electricity supplies will be raised to pay for the cost of purchasing GB and NI certificates. As with similar forms of financial support, this will be passed through to consumers’ bills.

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<sup>118</sup> DECC [A call for evidence on barriers to securing long-term contracts for independent renewable generation investment](#) 5 July 2012

<sup>119</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 p.27

<sup>120</sup> Ibid, p. 28

<sup>121</sup> DECC, *Draft Energy Bill Explanatory Notes*, Cm 8362, May 2012, paras 133-135

## **Reaction**

The ECC Committee suggested that the Government consider pushing back the date when the RO closes to new generation (from 2017 to 2020 for example), as a contingency plan, but the Government has rejected this recommendation, saying it remains on track to start letting CfD contracts in 2014.<sup>122</sup> The Scottish Government (SG) has also said it has concerns about whether the CfD regime will “deliver the same degree of market certainty that the RO has been successful in delivering”, so it is therefore “not yet in a position to make a decision on whether, and to what extent, the RO Scotland should be closed to new generation from 2017”. The SG has said it has urged the UK Government to consider this and to maintain flexibility to allow for the continuation of the RO beyond 2017.<sup>123</sup>

(On a related matter, the Government has also rejected the Committee’s suggestion that the simple small scale Feed-in-Tariff (FiT) should be extended beyond 5MW to 10MW or possibly 50MW, to help accommodate increasingly large community schemes.<sup>124</sup>)

### **3.8 Chapter 8: The Emissions Performance Standard, and the role of gas**

As section 2.6 above outlined, an Emissions Performance Standard (EPS) to limit the carbon that power stations can emit was one of the original ‘four pillars of EMR’ set out in the July 2011 EMR White Paper, as described by the ECC Committee. It is now perhaps demoted slightly to part of the supporting ‘EMR flexible toolkit’ or ‘wider policy’ underpinning the ‘key elements’ of CfDs and a Capacity Market.<sup>125</sup>

EPS is described as a “regulatory backstop on the amount of emissions that new fossil fuel power stations can emit”. It will apply to all new plant at or over 50MW and it will be set initially at 450 gCO<sub>2</sub>/KWh, and reviewed on a three yearly basis under the Carbon Budget process.<sup>126</sup>

When this EPS limit was first announced in March 2012, the Secretary of State said that gas still had an important role to play over the coming decades, so this would “provide certainty to gas investors” by enshrining this limit in primary legislation. The announcement explained that this would affect new coal (which would emit nearly 800 gCO<sub>2</sub>/kWh), but was above the level of gas-fired power stations (which emit below 400g gCO<sub>2</sub>/kWh). As an annual limit it would allow for gas peaking plant (Open Cycle Gas Turbines) which can emit slightly above the 450 gCO<sub>2</sub>/kWh but operate infrequently.<sup>127</sup>

Furthermore, power stations ‘consented’ (given permission for by the Secretary of State) under the 450 gCO<sub>2</sub>/KWh EPS will be subject to this level until 2044, under a provision called ‘grandfathering’.

**Section 38** sets, on the face of the Bill, i.e. in primary legislation, an EPS of 450 gCO<sub>2</sub>/KWh up to and including 2044. This applies to fossil fuel plants and to associated gasification plants, and also includes any associated carbon capture and storage (CCS) plants.

<sup>122</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 p.13

<sup>123</sup> Scottish Government [Scottish Government response to UK Energy Bill](#) 29 November 2012

<sup>124</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 p.8

<sup>125</sup> [Electricity Market Reform: policy overview](#) DECC, November 2012 Cm 8498 p. 13 and [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 p.32

<sup>126</sup> [Electricity Market Reform: policy overview](#) DECC, November 2012 Cm 8498 p.30

<sup>127</sup> DECC Press notice 2012/025, [Davey sets out measures to provide certainty to gas investors](#), 17 March 2012

The inclusion of CCS is new and a change from the draft Bill, and is in response to an ECC Committee recommendation. The Committee argued that while CCS was a special case (an emerging technology, which will require demonstration projects at first) it was concerned about the unintended consequences of excluding CCS ‘undermining decarbonisation’. The Government agreed on balance and has removed from the EPS Clauses its exemption for CCS demonstration projects.<sup>128</sup>

**Clause 39** allows the EPS to be suspended ‘in exceptional circumstances’, notably if there is a chance of a shortfall in electricity, although any such direction will now be laid before Parliament, in accordance with another ECC Committee recommendation.<sup>129</sup>

### ***Reaction: a dash for gas?***

The level at which the EPS has been set has caused some concern about fostering a new dash for gas. The Committee on Climate Change (CCC) wrote to the Secretary of State on 27 March 2012, pointing out that the “EPS would allow unabated gas fired generation from new plant through to 2045”. The CCC’s Chairman, Adair Turner, added that while the EPS proposal could be compatible with power sector decarbonisation requirements to meet carbon budgets, it also carried the risk that there would be too much gas-fired generation instead of low carbon investment. The CCC said that to mitigate the risk of gas consented now operating at baseload (rather than peaking) in 2030, it was important that “a clear decarbonisation objective is set for the EMR”.<sup>130</sup>

Both the ECC Committee Report on Energy Security and its pre-legislative scrutiny of the draft Bill concluded that the EPS proposals could lead to a dash for gas and a ‘lock-in’ to a high carbon system. It said that it was vital to have an understanding of the likely impact of EMR on the future role of gas generation. It wanted DECC to do modelling work to include ‘dash for gas before 2015’ and ‘no new gas before 2015’ scenarios.<sup>131</sup>

Early indications are that a dash for gas is most likely. On 5 December 2012 the Secretary of State laid the Government’s [Gas Generation Strategy](#) before Parliament, noting in his Written Statement that the modelling indicated that more gas was needed:

Modelling by DECC suggests that up to 26 GW of new gas plant could be required by 2030, in part to replace older coal, gas and nuclear plant as it retires from the system. It also indicates that, in 2030, we could need more overall gas capacity than we have today, although operating at lower load factors. The modelling shows that gas could play a more extensive role, with higher load factors, should the fourth carbon budget be revised upwards.<sup>132</sup>

On the same day, during the Autumn Statement, the Chancellor said:

The Energy Bill provides certainty and support for billions of pounds of investment in renewable energy. Today, we publish our gas strategy to ensure that we make the best use of lower-cost gas power, including new sources of gas under the land. We are consulting on new tax incentives for shale gas and announcing the creation of a single

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<sup>128</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 pp.30-31

<sup>129</sup> [Energy Bill Explanatory Notes Bill 100-EN](#) para 227 and [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 p.31

<sup>130</sup> CCC, [Comments on Emissions Performance Standard \(EPS\) for gas-fired power generation](#), 27 March 2012

<sup>131</sup> HC 275-I Energy and Climate Change - First Report of Session 2012-13 Volume I [Draft Energy Bill: Pre-legislative Scrutiny](#) 23 July 2012 paras 199-204 and 221 on

<sup>132</sup> DECC [Gas Generation Strategy](#), December 2012, Cm 8407 and [HC Deb 5 December 2012 c62WS](#)

office so that regulation is safe but simple. We do not want British families and businesses to be left behind as gas prices tumble on the other side of the Atlantic.<sup>133</sup>

On 13 December 2012 the Secretary of State for Energy and Climate Change announced that exploratory hydraulic fracturing (fracking) for shale gas could resume in the UK.<sup>134</sup> On the same day the CCC published its updated analyses of the effects of climate change policies on household bills. The CCC warned against relying on unabated gas-fired generation, which it said held the risk of electricity bills for the typical household being up to £600 higher than under a low-carbon power system over the next decades.<sup>135</sup>

**Chapter 9** of the Bill deals with miscellaneous measures such as liability for damages, and requiring changes to Licence Conditions to be laid before Parliament for 40 days.

#### **4 Part 2 of the Bill: Nuclear Regulation**

This part of the Bill gives statutory footing to a new independent body, the Office for Nuclear Regulation (ONR), to regulate the nuclear power industry.

The ONR already exists, however, as a non-statutory agency of the Health and Safety Executive (HSE) since 1 April 2011, following the *Stone review* commissioned in 2008.<sup>136</sup> The review was not published but its author's *Observations to the Secretary of State* were, and this included the "perceived lack of accountability of [the Nuclear Installations Inspectorate] and some of the weaknesses in its existing governance", requiring an independent, more transparent and accountable statutory regulator.<sup>137</sup> A Written Ministerial Statement on 8 February 2011 announced that legislation would be brought forward to take the ONR outside of the HSE.<sup>138</sup>

The ONR brought together the safety and security functions of HSE's Nuclear Directorate (incorporating the Nuclear Installations Inspectorate, the Office for Civil Nuclear Security and the UK Safeguards Office) and the Department for Transport's Radioactive Materials Transport Division.

The Office's areas of responsibility will not change significantly; it will still deal with transportation and nuclear installations inspections, and the Environment Agency will also continue to inspect such sites, for example.

**Chapter 1 of Part 2 of the Bill** sets out the ONR's purposes (**Clauses 47-53**). They are in five areas:

- Nuclear safety
- Nuclear site health and safety
- Nuclear security
- Nuclear safeguards and

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<sup>133</sup> [HC Deb 5 December 2012 c881](#)

<sup>134</sup> DECC press release [New controls announced for shale gas exploration](#) 13 December 2012.

<sup>135</sup> CCC, *Energy prices and bills – impacts of meeting carbon budgets* 13 December 2012 and *Financial Times* 'Green energy cheaper over time, study says' 13 December 2012 p.2

<sup>136</sup> See [HSE website](#) and DECC website on [nuclear regulatory reform](#)

<sup>137</sup> [Nuclear Regulatory Review Private Advice and Reasoning Observations by Tim Stone for the Secretary of State for Energy and Climate Change](#) December 2008

<sup>138</sup> [HC Deb 8 February 2011 c7WS](#)

- The transport of radioactive materials<sup>139</sup>

**Chapter 2** gives the Secretary of State the power to make ‘nuclear regulations’ for nuclear safety, nuclear security, nuclear safeguards and transport purposes and allows for summary or summary/indictable criminal offences under these; indictable only offences cannot be created (**Clauses 54-56**).

**Clause 57** establishes the ONR as a body corporate and introduces Schedule 7, which sets out its constitution and delegated functions. Its staff will not be Crown/civil servants but will be covered by the *Official Secrets Act 1989*. The ONR will be governed by a Board of up to 11 members including a non-executive Chair, the Chief Nuclear Inspector, a CEO and executive- and non-executive members. Annual plans and reports must be laid before Parliament, as well as a long-term strategy, which must be reviewed every five years.

**Chapter 4** sets out the ONR’s functions, including, under **Clause 58**, a “general duty to do whatever it considers appropriate for its purposes including to assist others to further those purposes”. Under **Clause 59** it may publish codes of practice and under **Clause 62 and Schedule 8** it may appoint Inspectors who can issue improvement or prohibition notices, and will have some powers of entry and seizure. **Clauses 63-70** set out further functions including the ability to carry out investigations and inquiries and the provision of information or advice and research and training. **Clauses 71-75** set out how these functions should be carried out, including allowing for directions from the Secretary of State, and co-operation with the HSE. **Clauses 76-79** deal with the ONR’s powers including those to obtain information.

**Chapter 5 of Part 2** sets out general duties of employees, much as exists under health and safety legislation. It sets out duties of employers, such as not to charge employees for certain things such as safety equipment. It creates offences related to making false statements to ONR and its inspectors.

**Clause 86** requires the Secretary of State to make a report to both Houses of Parliament each financial year on how the Bill’s powers on the ONR have been exercised.

**Clause 96** requires the Secretary of State to carry out a review of the provisions of Part 2 of the *Energy Bill 2012*, relating to the ONR, after they have been in force for five years. The conclusions of the review must be laid before Parliament.

## **5 Part 3 of the Bill: Government Pipeline and Storage System**

The Government Pipeline and Storage System (GPSS) is owned by the Ministry of Defence. Originally developed during the Second World War to protect oil distribution, it still supplies 40% of aviation fuel in the UK to commercial airports such as Heathrow and Gatwick and to RAF/US airbases. Legislation is needed to create transferable rights of access to the land through which the pipeline runs, so that its future sale might be possible.

**Clause 97** of the Bill defines what the GPSS is. It includes land defined or acquired under statute including the *Requisitioned Land and War Works Acts 1945 and 1948*, and the *Land Powers (Defence) Act 1958*, and wayleave orders related to this land.

**Clause 98** says that the Secretary of State may use the land on or underneath the GPSS “for any purpose for which it is suitable” including inspecting, surveying and restoring the GPSS.

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<sup>139</sup> [Energy Bill Explanatory Notes Bill 100-EN pp 47- 51](#)



**Clause 99** deals with access and gives rights of entry to any GPSS land for these purposes, normally with the consent of the occupier. This includes the right to maintain access (erect stiles and bridges, etc). It does not include the right to enter dwellings. **Clause 100** allows for warrants for entry if necessary, if at least seven days' notice has been given to an occupier but there are reasonable grounds for entry.

**Clause 101** says that these rights of entry, and rights to use the GPSS land and rights to transfer the GPSS (see below) should be registered as local land charges in England and Wales (although there are no GPSS assets in Wales) or may be recorded in the Land Register of Scotland.

**Clause 102** allows for compensation to persons who prove that these rights have depreciated the value of their land. Under subsection (3) this will be equal to the amount of the depreciation, but subsection (4) allows for compensation for loss of damage, disturbance and enjoyment of land or property.

**Clause 103** gives the Government the right to "sell, lease or transfer" the GPSS or any part of it along with liabilities and any conditions as considered appropriate.

The rest of Part 3 makes related amendments, for example certain repeals (**Clause 106**) and to dissolve the Oil and Pipelines Agency (**Clause 107**).

### **Reactions**

Reporting the proposed sale, *Scotland on Sunday* did not perceive this to be especially controversial:

The government pipeline and storage system (GPSS) has its origins in measures taken by the wartime government to provide a secure oil distribution network for the UK. It still connects Leuchars to Linkwood, and Inverness to Lossiemouth.

The GPSS has been expanded and restructured over several decades and today includes some 2,500km of cross-country pipelines, storage depots, pumping stations and other facilities.

[...] Murdo MacLean, an energy specialist at Pinsent Masons, said: "These measures will be of particular interest to utilities or other investors."

The GPSS remains strategically significant because it is used to supply major commercial airports including Gatwick and Heathrow as well as bases of the RAF and the US Air Force throughout Britain.<sup>140</sup>

However, another report said that the RMT Union opposed the sale. Bob Crow of the RMT said that plans to increase the capacity of oil storage at Portishead were a 'classic fattening up exercise' in advance.<sup>141</sup>

## **6 Part 4 of the Bill: Strategy and Policy Statement**

Ofgem's 2010 [Project Discovery](#) has already been referred to by this paper. This piece of work saw Ofgem seeking to fill a policy role, which some might have seen as DECC's role. This was just before the Government conducted its reviews of quangos and introduced the *Public Bodies Bill*, and there was perhaps some nervousness on Ofgem's part that it had overstepped the mark. However, Ofgem has remained largely unchanged by the reviews, although Consumer Focus, the important postal and energy watchdog, is to be abolished.

<sup>140</sup> *Scotland on Sunday* Pipe network may be sold off 27 May 2012 p.17

<sup>141</sup> *Western Daily Mail* Union attacks 'fattening-up' move before pipeline sell-off 31 May 2012 p.4

The 2011 Ofgem Review found a need for greater clarity between Ofgem and Government, and said that the Government guidance that accompanied Ofgem's statutory duties lacked impact. Ofgem's decision making could also be more transparent.<sup>142</sup>

The [Ofgem Review Final Report](#) published alongside the July 2011 EMR White Paper accepted that the Government needed to communicate more clearly its policy goals for the gas and electricity markets and the respective roles of Government and Ofgem in delivering these. Policy clarity and stability would help attract investment in the energy sector.<sup>143</sup>

The July 2011 EMR [White Paper](#) said that a Strategy and Policy Statement (SPS) would be produced and gave more background on what it would need to do:

A new statutory 'Strategy and Policy Statement' will be established. This document will:

- set out the Government's policy goals for the gas and electricity markets;
- describe the roles and responsibilities of Government, Ofgem, and other relevant bodies; and
- define policy outcomes that Government considers Ofgem to have a particularly important role in delivering.<sup>144</sup>

The Statement would need to be approved by Parliament and would be "intended to remain stable over at least the length of a Parliament".

**Clause 109** gives the Secretary of State the power to create a Statement which will comprise 'strategic priorities', 'policy outcomes,' and the Government's and Ofgem's (specifically, the Gas and Electricity Markets Authority's) role in delivering these.

**Clause 110** gives Ofgem a duty to 'have regard to' the strategic priorities in the Statement subject to its primary duty to protect the interests of its current and future consumers.

**Clause 111** allows for some exemptions, and **Clause 112** places a duty on the Secretary of state to review the Statement every five years. A review may also be triggered sooner, such as following a General Election, or if Ofgem says that a policy outcome in the Statement is in danger of being missed, or if energy policy has changed significantly. Under **Clause 112** subsection (10), the Government must consult with Ofgem, and with Scottish and Welsh Ministers, before reviewing and amending the Statement.

**Clause 113** sets out the procedural requirement for designating the Statement (including any amendments) and the same consultees shall be shown a 'first draft' under 'first consultation' before a 'revised draft' for 'wider consultation' is prepared. A report will need to summarise the second consultation responses and any changes made as a result, and the final draft statement will need to be laid before Parliament to be passed by affirmative resolution.

**Clause 115** gives Ofgem new reporting requirements under the *Utilities Act 2000* related to the Statement. This will need to include how Ofgem proposes to further the policy outcomes in the year ahead and beyond. It is expected that this reporting might be done under Ofgem's forward work programme.

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<sup>142</sup> DECC [Ofgem Review Summary of Conclusions](#) 19 May 2011

<sup>143</sup> DECC [Ofgem Review Final report](#) 12 July 2011

<sup>144</sup> DECC [Energy White Paper Planning Our Electric Future: a White Paper for secure, affordable and low carbon Electricity](#) CM 8099 12 July 2011 Chapter 4, specifically p.88

## **Reaction**

The Scottish Government has welcomed the SPS and has said it looks forward to working with DECC and Ofgem on its details and considering the annual reports from Ofgem on its impact.<sup>145</sup>

In its Written Submission to the ECC Committee's pre-legislative scrutiny of the draft Bill, Ofgem broadly welcomed the SPS which it said did not affect the Authority's independence, which was enshrined in law. But Ofgem did have some concerns because the SPS could potentially make a difference to the way the Authority operated, by needing to have regard to the Strategic Framework. At the same time there was no detail yet on what would be in the SPS, nor any fixed limits on how many policy outcomes could be specified, nor how many times these could be changed. Ofgem said that "the way in which the SPS is drafted and revised will be critical in ensuring that its potential benefits as fully supported by Ofgem are not undermined".<sup>146</sup>

## **7 Part 5 of the Bill: Miscellaneous**

### **7.1 Clause 117: Consumer redress orders**

Ofgem has powers under the *Electricity Act 1989* and the *Gas Act 1986* to impose fines on licence holders (energy companies) if they breach their Licence Conditions.

[Section 27A of the Electricity Act](#) sets out penalties, puts a 10% of turnover limit on this and says the fines must go into the Consolidated Fund. It does not provide for compensation however, and Section 27C also places a 12 month time limit on the imposition of penalties.<sup>147</sup>

Because these fines go to the Consolidated Fund, they make little direct difference to consumers, even when consumers have suffered a direct loss, through, for example, mis-selling. Further, Ofgem's Standards of Conduct are not included in the Licence Conditions, which would help make them enforceable rules.<sup>148</sup> Nor do the Standards of Conduct mention any compensation scheme.<sup>149</sup>

Through the Energy Ombudsman service, people can ultimately receive an award of up to £5,000.<sup>150</sup> Also, Ofgem can sometimes obtain compensation on a voluntary basis from energy companies. This happened in November 2012, when E-ON paid compensation of £1.4m customer compensation and a £300,000 goodwill gesture for incorrect termination fees and overcharging following price rises.<sup>151</sup>

However, during a debate in October 2011 when Caroline Flint MP asked whether the Government could ensure that consumers were compensated for mis-selling, the former Secretary of State Chris Huhne set out the limitations of the current system:

The clear advice that I have received is that, legally, we will have to legislate to ensure that redress is available for energy consumers—but I am happy to look at any evidence that the right hon. Lady has to the contrary, and if we can move further and faster, clearly we will. However, our advice at present is that we will need new

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<sup>145</sup> Scottish Government [Scottish Government response to UK Energy Bill](#) 29 November 2012

<sup>146</sup> [Energy and Climate Change Committee - Draft Energy Bill: Pre-legislative Scrutiny Written Evidence submitted by Ofgem](#) Ofgem, June 2012

<sup>147</sup> [section 27A of the Electricity Act 1989](#)

<sup>148</sup> ECC Committee Eighth Special Report [Government's response](#) to the ECC Committee's Sixth Report of 2010-12 on Ofgem's Retail Market Review 19 October 2011

<sup>149</sup> Ofgem [Retail Market Review](#) Findings and initial proposals 21 March 2011 para 2.33

<sup>150</sup> Ombudsman Services: Energy [About Ombudsman Services: Energy](#) September 2012

<sup>151</sup> Ofgem Press Release [Ofgem secures £1.7 million for consumers following E.ON error](#) 27 November 2012

legislation, and it is a matter of great regret to me that the Labour Government did not implement that.<sup>152</sup>

On 20 September 2011 the then Secretary of State [announced](#) that the Government was considering giving greater powers to Ofgem:

The Government is also considering giving Ofgem new powers to require energy companies to provide consumer redress when consumers have lost out as a result of a company breaching a licence condition. Redress would include refunding customers directly or requiring the company to pay into funds that benefit consumers. This would be in addition to Ofgem's current powers to fine companies up to 10% of their annual turnover, and would be unlimited.<sup>153</sup>

DECC [consulted](#) on these proposed new powers for Ofgem in April 2012. This explained:

Ofgem sometimes seeks to reach a voluntary agreement with businesses and has been successful in obtaining redress, including monetary compensation for consumers. However, there have also been occasions when it has been unsuccessful in reaching a voluntary agreement and, as it has no powers to compel redress to be provided, consumers will have missed out on redress that might have been due to them.

The Government is proposing that Ofgem should be provided with a power which would enable it to order an energy business to remedy the adverse effects on consumers of a breach of a relevant obligation. We would still expect voluntary agreements on redress to be the norm but the proposed power would strengthen Ofgem's hand during negotiations and also give it a means of ensuring consumers are compensated where energy businesses are unwilling to provide this voluntarily.<sup>154</sup>

**Clause 117 of the Bill introduces Schedule 14**, which allows Ofgem to require energy companies to pay compensation to gas or electricity consumers if it is satisfied that a contravention has occurred and as a result of that, one or more consumers have suffered loss, damage or inconvenience. Ofgem will have to prepare a policy on its use of consumer redress orders. The Schedule also allows for time limits (five years), and for appeals, and for maximum levels of penalty and compensation (10% of turnover).

### **Reaction**

Citizens Advice 'strongly welcomed' DECC's decision to grant Ofgem power of redress since it was the consumer left out of pocket most often when things went wrong. Its response to DECC's consultation gave examples of people who had been mis-sold more expensive energy contracts.<sup>155</sup> Consumer Focus said that this was a 'really welcome move'.<sup>156</sup> But Consumer Focus has also recommended that the redress system be made simpler overall.<sup>157</sup>

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<sup>152</sup> [HC Deb 20 October 2011 c1053](#)

<sup>153</sup> DECC press release 11/076 [More teeth for Ofgem, more rights for energy consumers](#) 20 September 2011

<sup>154</sup> DECC, [Consultation on a proposed new power for Ofgem to compel regulated energy businesses to provide redress to consumers](#) DECC consultation document April 2012

<sup>155</sup> Citizens Advice *Consultation on a proposed new power for Ofgem to compel regulated energy businesses to provide redress to consumers* Response from Citizens Advice to the Department of Energy and Climate Change undated

<sup>156</sup> Consumer Focus press release [New compensation powers for Ofgem](#) 9 April 2012

<sup>157</sup> [Memorandum submitted by Consumer Focus to ECC Select Committee Consumer Engagement with Energy Markets inquiry](#) March 2012

## 7.2 Clause 118: Offshore transmission

This is a technical measure. Companies developing offshore generating stations can also construct the transmission lines connecting these to the grid. Under EU rules (the so-called 'Third Package') however, companies are not supposed to be both generators and transmission operators without fully 'unbundling' the parts of their business. But constructors need to be able to test the transmission lines they have built, so to allow this, a change to the *Electricity Act 1989* will stop this being a criminal offence. This is a non-controversial measure and, for instance, the Scottish Government supports it.<sup>158</sup>

The remaining clauses in Part 5 are on recovering nuclear decommissioning costs (**Clause 119**), and on the need for a review of the consumer redress and nuclear decommissioning fees provisions five years after they come into force (**Clause 120**).

## 7.3 Part 6: Final

The Clauses in this Part deal with interpretation, Schedules allowing for transfer schemes, financial provision, extent, and commencement. Extent was discussed in section 1.3 above. On commencement, **Clause 125** says that many of the provisions relating to EMR come into effect on the day the Bill receives Royal Assent. Some will come into force two months later, including; the EPS, access to markets, conflicts of interest, the SPS, consumer redress, the offshore transmission system and nuclear decommissioning fees.

# 8 What is not in the Bill

## 8.1 Energy tariffs

On 17 October 2012 the Prime Minister announced that the Government would legislate in the forthcoming 2012 Energy Bill to require energy companies to give customers their cheapest tariff. Ofgem has been developing proposals and consulting towards simplifying tariffs, to make it easier for consumers to compare deals and switch energy supplier, for some time. [Ofgem's proposals](#) were published two days after the Prime Minister's announcement. The ECC Committee heard from the Minister of State at DECC Greg Barker on this matter when he gave oral evidence to them in October 2012.<sup>159</sup>

On 20 November 2012 DECC published a [discussion document](#) seeking to bring together the Ofgem work and the commitment to legislate. The DECC proposals also seek to strike a balance between getting the cheapest tariff for customers, while not stifling switching and competition in the energy supply industry.<sup>160</sup>

These provisions are not yet in the Bill and so can presumably be expected later, as Government Amendments. A [House of Commons Library Standard Note](#) gives more background.<sup>161</sup>

## 8.2 Overall demand reduction

There are two ways in which the demand side, rather than the supply side, can influence the operation of the electricity system:

- **Demand Reduction**, a permanent decrease in electricity use; and

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<sup>158</sup> Scottish Government [Scottish Government response to UK Energy Bill](#) 29 November 2012

<sup>159</sup> Oral evidence taken before the Energy and Climate Change Committee [Consumer engagement with energy markets](#) Tuesday 30 October 2012

<sup>160</sup> DECC, [Ensuring a better deal for energy customers](#) 20 November 2012

<sup>161</sup> House of Commons Library, Standard Note SN506440, [Simplifying Energy Tariffs](#), 23 November 2012

- **Demand Side Response**, sometimes referred to as Demand Side Management), a temporary reduction in demand or the movement of demand to another time, which can help address supply constraints

The Bill will support the development of demand side response (DSR) and storage by allowing these to bid into capacity auctions (see section 3.3).

Other than this however, the ECC Committee was very critical of the draft Bill in that reducing overall demand was ‘totally absent’ from it. It noted that DECC was developing proposals on this but said this was being done too late. (After the draft Bill was produced, in July 2012 DECC published an assessment of “[Capturing the full electricity efficiency potential of the UK](#)”.<sup>162</sup>)

Yet, the ECC Committee said, demand-side measures were potentially the cheapest way to decarbonise. The Committee recommended stronger measures to encourage flexible, responsive demand, and innovative technologies around storage and DSR. It recommended that the Bill should allow for a Feed-in-Tariff for energy efficiency, which DECC officials, in oral evidence to the Committee, appeared to be open to. Many witnesses to the Committee said that they thought demand was being ignored or that the Capacity Market would be too passive a vehicle for this.<sup>163</sup>

The Government’s main policy for promoting energy efficiency is the Green Deal, currently being rolled out and intended to provide a ‘pay as you save scheme’ for installing energy efficiency or micro-generation measures in properties. However, this is concerned primarily with reducing space heating, and this is generally powered by gas or fuels other than electricity. While energy efficiency was described as ‘low hanging fruit’ by one witness to the ECC Committee, others were not sure the Bill was the right place for it.<sup>164</sup> After the *Energy Bill* was produced, several commentators (WWF and Caroline Lucas MP for the Green Party) lamented the lack of energy efficiency measures within it.<sup>165</sup>

Alongside the *Energy Bill*, DECC also published a consultation on [Electricity Demand Reduction](#). This considers the option of, and seeks views on, a ‘Premium Payment’ or Feed-in-Tariff, for electricity efficiency.<sup>166</sup> The closing date for the consultation is 31 January 2013. The Government says that this timeframe is consistent with the possibility of Government amendments to the Bill during its passage in spring 2013, should this be required.<sup>167</sup>

### 8.3 Summary of the Government’s responses to the ECC recommendations

The Government says it has made the following ‘key changes’ to the Bill as a result of the ECC Committee’s recommendations:

- clarity of the EMR objectives on the face of the Bill (new Part 1, Chapter 1);
- a single counterparty to the CfD contract to ensure a robust private law contract;
- powers to allow Government intervention to ensure independent generators can access the market (new Part 1 Chapter 6);

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<sup>162</sup> DECC, [Capturing the full electricity efficiency potential of the UK](#) July 2012

<sup>163</sup> HC 275-I Energy and Climate Change - First Report of Session 2012-13 Volume I [Draft Energy Bill: Pre-legislative Scrutiny](#) 23 July 2012 para 48 onwards

<sup>164</sup> [Minutes of Evidence taken before the ECC Committee](#) 19 June 2012

<sup>165</sup> [Business Green Updated: Energy Bill - the reaction](#) 29 November 2012

<sup>166</sup> DECC, [Electricity Demand Reduction consultation on options to encourage permanent reductions in electricity use](#) 29 November 2012 Cm 8468

<sup>167</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 p.25

- powers to allow Government intervention to improve market liquidity (new Part 1 Chapter 6);
- a two-stage registration and allocation process for CfD contracts, to give generators early certainty of CfD allocation and price; and
- amendment to the EPS provisions so that Carbon Capture Storage (CCS) demonstration projects now come within the regime.<sup>168</sup>

The recommendations that it has declined to, or is yet to, implement include:

- The Government has said it will amend the Bill to add 'the power to set a range' for a decarbonisation target for the electricity sector in Regulations, as the Committee recommended. However, the Bill as it stands will need to be amended to do this. (This also stops short of a commitment on the face of the Bill that some commentators other than the ECC Committee have called for.)
- Government underwriting of the CfD counterparty or contracts, so, related, there is still a requirement for all suppliers to post collateral, although a call for evidence has been issued on the effects of this on businesses
- Details of the strike price for more than a five year period, of a draft CfD terms, although some 'Heads of Terms' for the CfD contract have been provided
- Details of the Treasury's levy cap in the years leading up to 2020, or more details on flexibility in the headroom or longitudinal capping
- A FiT for energy efficiency; although a consultation on demand reduction is on-going and so amendments may be introduced, but are not promised
- The use of the Committee on Climate Change as a statutory consultee
- Replacement of National Grid as Delivery Body by a new independent body although a consultation on potential synergies and conflicts of interest is on-going
- A reliability standard, although a consultation is promised.

Finally, DECC also needs to update some of the Bill's IAs, and has its consultation on routes to market and PPAs on-going, to help decide whether the powers included in the Bill on that will be needed and used.

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<sup>168</sup> [Government Response to the House of Commons Energy and Climate Change Select Committee Report into the draft Energy Bill](#) November 2012 Cm 8504 pp.4-5

## Appendix 1 – Abbreviations

BSC	Balancing and Settlement Code
CCC	Committee on Climate Change
CCGT	Combined Cycle Gas Turbine
CCS	carbon capture and storage
CfD	contracts for difference
DECC	Department of Energy and Climate Change
DSR	demand side response
ECC	Energy and Climate Change (Select Committee)
EDF	Électricité de France
EMR	electricity market reform
EPS	emissions performance standard
FID	final investment decision (and FID-enabling)
FiT	feed-in-tariff
gCO <sub>2</sub> /kWh	grams of carbon dioxide [emitted] per kilowatt-hour
GW	Gigawatts
HSE	Health and Safety Inspectorate
IA	Impact Assessment
MW	Megawatts
MWh	Megawatt-hours
NI	Northern Ireland
NII	Nuclear Installations Inspectorate
ONR	Office for Nuclear Regulation
PPA	power purchase agreement
RO	Renewables Obligation
ROC	Renewables Obligation Certificates
SEM	Single Electricity Market (Ireland)
SG	Scottish Government
SPS	Strategy and Policy Statement



## Appendix 2 – The Bill’s major Impact Assessment documents

### *The impact assessment on CfDs*

The Government estimates that CfDs will result in net benefits to society of £3.1 - £9.1 billion (discounted) over the period 2012 to 2030. The IA reaches this range by comparing CfD with two basecases, both of which meet the UK’s commitments on renewable energy and carbon emission reductions, but without CfD. In both comparisons scenarios carbon emissions are lower than with CfD and these are valued, but there are substantial capital cost savings which make up the majority of the overall net benefit figures of CfD.

The IA defines basecases A and B. In both cases all policy instruments are available to meet the different priorities of the energy system apart from CfD. In basecase A, carbon prices increase to achieve the same increase in nuclear capacity as under EMR and the Renewables Obligation (RO) is used to meet the 2020 renewable target and 2030 decarbonisation ambition.<sup>169</sup> In basecase B, carbon prices increase to meet the same nuclear capacity and a similar CCS profile as under EMR, and again the RO is used to meet the other objectives.<sup>170</sup> In both cases the carbon price is higher than under EMR, especially from the 2040s onwards. Basecase B has the highest carbon price in the late 2020s and 2030s –this is the level thought to be required in order to give sufficient incentives to invest in CCS.

Under DECC modelling the generation mix varies somewhat in the different scenarios. The EMR scenario is the only one with substantial amounts of unabated coal in 2020, it also has less unabated gas, more CCS and slightly less renewable generation. There is some CCS in basecase B, but less than under EMR. With virtually no CCS under basecase A the additional generation comes from more renewable power. The scenarios are drawn up so the proportion of nuclear power under each alternative is broadly similar.

The table below summarises the IA’s estimates of the cost differences between the basecases and EMR. In the 2012-2030 period EMR provides net benefits to society of just over £9 billion compared to basecase A. This estimate is dominated by the capital cost savings. In the same period net benefits of EMR compared to basecase B are just over £3 billion. While capital costs are an important element of this they are less dominant and savings on generation costs and imports through the interconnector are also important. Unlike other IAs the period is extended to after 2030.<sup>171</sup> Net benefits are expected to increase over the longer time periods.

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<sup>169</sup> To £100 per tonne (2012 prices) by 2019, held at this level to 2030 before increasing again to around £300 per tonne by 2049

<sup>170</sup> As in basecase A apart from a period from the mid 2020s to 2040 when they are increased to £180 per tonne.

<sup>171</sup> The extension of the time period included in the IA here potentially takes it to beyond the lifetime of CfDs. According to the IA ‘While Government envisages eventual exit from CfDs, the focus of this IA is not on projecting the precise point of exit, but on assessing the EMR package relative to other policy options for meeting Government’s long-term decarbonisation and security of supply goals.’

**Estimated change in net welfare from CfDs**

Net present value, £ billion 2012 prices

	CfD compared to Basecase A			CfD compared to Basecase B		
	2012-2030	2012-2040	2012-2050	2012-2030	2012-2040	2012-2050
Carbon	-1.0	0.3	-0.8	-0.3	-2.6	-5.1
Generation costs	0.0	-1.5	0.3	0.6	2.4	7.0
Capital costs	9.7	16.0	18.0	1.9	4.5	4.2
Unserviced energy	-0.2	0.2	-0.1	-0.1	0.5	0.1
Interconnector	0.7	1.1	1.8	1.2	2.0	2.7
<b>Total</b>	<b>9.3</b>	<b>16.0</b>	<b>19.0</b>	<b>3.2</b>	<b>6.8</b>	<b>9.1</b>
<i>inc. admin costs</i>	9.1	-	-	3.1	-	-

Carbon -Difference in total emissions multiplied by the appraisal value for that year

Unserviced energy -a valuation of the benefit avoiding power outages

Interconnector -Value of net imports through the interconnector

Source: *Electricity Market Reform Impact Assessment, DECC (November 2012)*

The IA disaggregates the capital cost savings from CfD into two elements: i) Financing costs – these are expected to be lower than under the alternatives where higher carbon prices and the RO are used, and ii) technology mix - CfDs are said to be better at targeting a cost effective mix of generation.

*Financing costs*

According to the IA the CfDs provide greater certainty to potential investors about their future revenue and hence reduce market risk. This should, other things being equal, cut financing costs as they can borrow at lower rates for what is a less risky investment. Equivalently the ‘hurdle rate’ for the investment – the rate of return needed to invest in the project- is reduced thus making more projects economic. The estimated reduction in the hurdle rate is 1.2 percentage points for round 3 offshore wind, 0.8 points for nuclear and 0.5 points for onshore wind. The present value of this cut in the financing costs of low carbon generation is estimated at £1.7 billion (2012-2030) compared to both basecases.

*Technology mix*

The main difference in generation mix between the scenarios is that basecase A has virtually no CCS. In this scenario it is assumed that to meet the 2030 decarbonisation ambition more (expensive) offshore wind is needed. This increases the capital costs under this scenario and hence the much higher capital saving of EMR compared to this case in the table above. As the basecase B mix is similar to EMR B most of the capital saving is from financing costs rather than technology mix. CfDs are said to be able to better target specific technologies, such as nuclear and CCS without direct impacts on alternative technologies. The other elements of the costs differences are driven by differences in generation mix (generation costs) and the higher levels of decarbonisation in both basecases.

*Distributional analysis and bill impacts*

The IA predicts that CfDs will result in a substantial increase in ‘consumer surplus’ –a measure of consumer welfare- and a (smaller) reduction in ‘producer surplus’ –a measure of changes in the profitability of the generation sector- both of which are largely due to lower wholesale prices compared to the alternative scenarios. Using CfDs rather than the carbon price substantially reduces the environmental tax revenues the Government receives. The IA combines these impacts for CfDs and the capacity market (which is expected to have a net cost of £1.7 billion up to 2030) so the overall net benefit figures are lower than those given above. In addition the Capacity Market is expected to cut consumer surplus and increase producer surplus, so the impact of CfDs alone on these two are greater than the combined totals below.

**Distributional analysis of CfD with Capacity market, 2012-2030**

Net present value, £ billion 2012 prices

		CfD and Capacity Market compared to Basecase A	CfD and Capacity Market compared to Basecase B
Consumer surplus	Wholesale price	33.0	59.0
	Low carbon payments	-3.6	-12.0
	Capacity payments	-5.5	-5.5
	Unserviced energy	0.2	0.2
	<b>Total change</b>	<b>24.0</b>	<b>42.0</b>
Producer surplus	Wholesale price	-32.0	-58.0
	Low carbon payments	3.6	12.0
	Capacity payments	5.5	5.5
	Producer costs	20.0	21.0
	<b>Total change</b>	<b>-3.6</b>	<b>-20.0</b>
Environmental tax revenue	-12.0	-20.0	
Change in non-costed social costs of carbon	-0.9	-0.3	
<b>Total change in net welfare</b>	<b>7.8</b>	<b>1.7</b>	

Source: Electricity Market Reform Impact Assessment, DECC (November 2012)

There are three main ways in which CfDs affect consumer prices compared to the basecases; CfD payments; lower RO support costs and changes to wholesale prices. CfD payments increase bills, but the introduction of CfDs reduces the scale of the RO and hence RO support costs fall. The IA assumes lower wholesale prices in a decarbonised electricity system because of lower short run marginal costs of much of this generation. However as the system is decarbonised in part though higher prices in basecases A and B these costs are passed on to consumers, making CfDs relatively less expensive.

The IA modelling results for the impact of EMR (CfD plus the Capacity Market) on domestic consumer bills compared to basecases A and B are summarised in the table below.

**Estimated impact of EMR on domestic electricity bills**

2012 prices

	Bill under basecases (£)	Change as a result of EMR	
		£	%
2011-2015	580	-	-
2016-2020	640	-£30	-5%
2021-2025	659-660	-£49 to -£50	-7% to 8%
2026-2030	709-795	-£18 to -£104	-3% to -13%
2016-2030	669-698	-£32 to -£61	-5% to -9%

Source: Electricity Market Reform Impact Assessment, DECC (November 2012)

In all cases the combined impact of CfDs and the Capacity Market is to reduce consumer bills compared to reaching the same policy goals with existing instruments. The range of reductions increases over time in part due to the greater uncertainty in future years, but also the cost to consumers of the Capacity Market<sup>172</sup>. Overall the Government estimates that EMR measures will cut domestic electricity bills by 5-9% over the period to 2030 compared to the two basecases, non domestic bills by 5-10% and bills for energy intensive users by 6-11%. There is considerable uncertainty about many of the assumptions behind these estimates, particularly around wholesale prices so far into the future.

<sup>172</sup> Estimated at £14 a year for domestic consumers and not expected until the 2020s.

The IA also looks at the impact on different groups of domestic consumers. Lower income groups will see a greater impact from reduced bills as a proportion of their total expenditure because spending on electricity makes up a greater share of their total spending. Lower customer bills are expected to lead to a reduction in fuel poverty compared to the basecases; 200-250,000 fewer in 2025 compared to basecase A and 320-440,000 fewer compared to basecase B.

### *Sensitivities*

The IA will be updated early in the New Year to include a full estimate of the impact of decarbonising to 200g CO<sub>2</sub>/kWh and 50g CO<sub>2</sub>/kWh in 2030. This is to reflect the decision to take a power to set a decarbonisation range. Preliminary analysis included in the current IA suggests the EMR (CfD and the Capacity Market) could result in a cut in welfare of £3.6 billion with a 200g CO<sub>2</sub>/kWh ambition or an increase in welfare of £1.2 billion with a 50g CO<sub>2</sub>/kWh ambition.<sup>173</sup>

The IA includes an annex that compares the costs and benefits of CfDs to two additional basecases. In basecase C there is no decarbonisation ambition and the RO and carbon pricing follow existing commitments. In basecase D the RO alone is used to meet the 2030 decarbonisation ambition. Under basecase C the emission intensity of generation in 2030 is around double the level in all other scenarios, there is no CCS, no new nuclear until after 2030 and generation becomes increasingly dependent on gas. In this scenario the proportion of renewable generation is only slightly less than under EMR because the 2020 renewables target is met and growth of renewables slows from 2020 under EMR. In the period to 2030 EMR results in a £6.7 billion loss compared to basecase C because of the large savings in capital costs in this alternative scenario. Domestic energy bills are 2% higher under EMR than basecase C up to 2030. The net cost/benefit position changes if the horizon is extended –no significant net cost or benefit for 2012-2040 and a £13 billion net benefit of EMR for 2012-2050. The IA explains that ‘...EMR is a policy with upfront costs and long-term benefits’. The largest element of this is the value of carbon savings under EMR. The results still imply lower bills under basecase C for the whole period.

Under basecase D there is less nuclear generation, virtually no CCS and much more renewable generation than under EMR because decarbonisation is met through the RO. This effectively replaces new nuclear with much more expensive types of renewable capacity.<sup>174</sup> These higher costs mean EMR is estimated to have net benefits to society of £29 billion compared to this basecase up to 2030 and this gap grows over time. Domestic energy bills for the period 2012-2030 would be around 5% lower under EMR and again the gap grows over time.

### ***The impact assessment on the Capacity Market***

The central estimate of the impact of the Capacity Market proposals is that they will result in an overall cost to society of around £1.7 billion. Again this is the discounted cost and covers the period to 2030. The IA points out that this proposal results in a cost largely because of what can be seen as unrealistic assumptions about how the market might react in the ‘business as usual’ case. An alternative set of assumptions substantially reduces the net cost.

As the Capacity Market will provide an incentive for additional capacity the costs are largely associated with providing this –capital, fuel and carbon costs. The benefits are the reduced levels of ‘forced outages’ or disconnections when capacity is insufficient to meet demand.

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<sup>173</sup> Electricity Market Reform Impact Assessment, DECC (November 2012). para 79

<sup>174</sup> The additional renewable generation under this scenario has a higher marginal cost as cheaper options are exhausted.

These are valued at a central figure of £10,000/MWh, £10 per kWh or around £7 per hour of average domestic consumption.<sup>175</sup>

These costs and benefits are compared to a business as usual case where other Electricity Market Reforms are implemented, but not the Capacity Market. The main variant (DECC base case) assumes that prices in the market fully reflect the marginal cost of electricity, demand and prices are as projected and that investors can predict demand and prices with certainty five years into the future. In effect the market is assumed to work perfectly. The IA notes:<sup>176</sup>

These two assumptions mean that modelling is likely to understate the benefits of a Capacity Market as it assumes an unrealistic energy-only market where prices can reflect scarcity and where investors have perfect certainty of demand when choosing whether to build a new plant.

The Capacity Market is aimed at reducing the problems associated with a 'market failure' so comparing it with a situation where there is no market failure is unrealistic.

The alternative variant (DECC stress test) assumes higher overall levels of demand and higher peak demand, prices do not rise to meet marginal costs and there are delays to introducing new low-carbon capacity.

The IA's modelling assumes that the objective of the Capacity Market is to have a capacity margin of 10%.<sup>177</sup> Under the DECC base case this margin does not fall below 10% until the 2020s. It falls to just below 10% in the stress test in 2016. If the first Capacity Market auctions were held in 2014 it would bring on new capacity for the first time in winter 2018/19. This means that most of the costs would not be felt until the second half of the 20 year period covered by the IA.

When compared to the base case the Capacity Market results in energy system costs of £1.8 billion, administrative costs to business of £0.2 billion and benefits from reduced outages of £0.3 billion. A net cost to society of £1.7 billion. When compared to the stress test the gross costs are higher because more capacity is needed; energy system costs are £2.5 billion. There are also more outages in this case so the benefits gained under the Capacity Market of avoiding these are also greater at £2.3 billion. The net result is still a cost of around £0.5 billion. The IA looks at different valuations for avoiding outages from £5,000/MWh to £30,000/MWh. This gives a range of costs compared to the base case of £1.1 to £1.9 billion and £5.0 billion net benefit to £1.6 billion net costs compared to the stress test.<sup>178</sup>

In all cases the Capacity Market results in a transfer from consumers to producers. Consumers pay for capacity payments through their bills and this is only partially offset by lower wholesale prices. The transfer is also expected to go to producers for capacity that would have been present without a capacity payment. The annual value of the producer surplus from the Capacity Market (a measure of change in their profitability) is estimated to increase to more than £900 million in the late 2020s.

The IA notes that there is 'significant uncertainty' connected with estimating the impact on bills and its estimates should be treated with caution. The main difficulty is estimating the

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<sup>175</sup> *Electricity Market Reform –Capacity Market Impact Assessment*, DECC (November 2012)

<sup>176</sup> *ibid.* Para 5.9

<sup>177</sup> De-rated capacity margin which takes account of the ility of each type of plant

<sup>178</sup> The main net loss in welfare estimate increases to £2.3 billion if it is assumed that the power sector decarbonises to 200gCO<sub>2</sub>/kWh by 2030. This estimate will be updated and a figure given for a 50gCO<sub>2</sub>/kWh when the IA is updated in the New Year.

impact of tighter capacity margins on prices in the counterfactual case. When compared to the base case it is estimated that the Capacity Market would increase bills by 0.7% for the period 2021-25 (when it first has an impact) rising to 2.1% in 2026-30. The impact compared to the stress test scenario is for a 0.5% fall in 2016-20, a 0.6% increase in 2021-26 and a 1.2% increase in 2026-30. The estimated percentage increases are larger for non-domestic consumers. The IA suggests that stable capacity payments could reduce the costs of financing new capacity and even reduce bills. If the Capacity Market does increase bills the additional cost could be seen as payment for insurance against power cuts, albeit one that consumers have no choice to opt in or out of.

### ***The impact assessment on Final Investment Decisions***

The central estimate of the net benefit of this proposal is £2 billion discounted over the period to 2030. The IA compares a scenario where an effective Final Investment Decision (FID) 'product' is available to one where it is not available or not effective. No distinction is made between the different range of options or products available to Government to enable early investment decisions to take place. These are expected to vary project-by-project.

The main counterfactual example this 'effective policy' scenario is primarily compared against is one where projects are delayed until EMR is implemented because developers are risk averse. This delays the first new nuclear build, puts back subsequent nuclear and other low-carbon capacity and means two early offshore wind projects do not go ahead. In this example there is more gas generation (with CCS towards the end of this period), slightly more power from coal, less nuclear, less offshore wind. Carbon costs are higher because of higher emissions, capital costs are lower but this is more than outweighed by the higher generation (fuel) costs. Delaying the low-carbon generation is assumed to increase costs in later years. This happens because more expensive low-carbon technologies need to be adopted in order to meet carbon reduction targets in time; '...early low-carbon plant is replaced by more expensive low-carbon plant in later years'. In effect the modelling assumes that without FID cheaper nuclear capacity is substituted for more expensive gas with CCS and/or wind.

The net cost of this example (net benefit of FID) is put at £2 billion. Thus the FID is said to help deliver a more 'socially optimal' generation mix in a more cost-effective way. FID is compared to seven different scenarios. The results are robust to changes in energy demand and fossil fuel prices, but highly sensitive to assumptions about nuclear deployment. The smallest net benefit of FID (£0.2 billion) is where the alternative scenario assumes that only the first new nuclear plant is delayed and all others are built at the same time as they would be under FID. Scenarios where the nuclear programme is put back by three and five years increase the net benefit of FID to £9 billion and £15 billion respectively.

### ***Other impact assessments***

#### *Renewables Obligation Transition*

The IA for Renewables Obligation Transition does not make an estimate of the net financial impact of this policy. The potential financial consequences of this policy centre around the impact on financing costs of uncertainty about the value of Renewables Obligation Certificates (ROCs) when large amounts of generation exit the Renewables Obligation from 2027. Fixing the value of ROCS would reduce this uncertainty and has the potential to reduce the risk of investment and hence financing costs. The importance of financing costs are illustrated in the section above on CfD. These cost reductions could be 'significant' but have not been quantified '...because of lack of sound information.'<sup>179</sup> They will be explored in subsequent IAs.

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<sup>179</sup> *Renewables Obligation Transition Impact Assessment*, DECC (November 2012). Para 14

*Emissions Performance Standards*

The Emissions Performance Standards IA concludes that the only cost associated with the policy is establishing the EPS value for each plant. This is put at less than £1 million in total. This policy does not change the generation mix compared to the baseline as emissions from new fossil fuel generation, combined with their estimated load factors, do not breach the emissions limit. New CCGT gas would be well within the 450g CO<sub>2</sub>/kWh. New OCGT would fall within the annual limit implied by this standard because it is a 'peaking plant' which is not meant to be operated at baseload capacity. New coal power would need CCS, but this is already Government policy.<sup>180</sup>

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<sup>180</sup> *Emissions Performance Standard Impact Assessments*, DECC (2011)