

## Decarbonising power by 2030



**GREENPEACE**



Association for the  
Conservation of  
Energy



### Summary

The Energy Bill will shape the energy sources used to power Britain for the next forty years. Over £100 billion investment is now needed over the next decade as a fifth of our older power plants face closure and neglected infrastructure is upgraded. What they are replaced with will have long-standing consequences for the future competitiveness of the economy, energy prices and consumer bills.

These decisions will also have a major impact on our carbon emissions, at a time when recent reports from the International Energy Agency<sup>i</sup>, the World Bank<sup>ii</sup>, UNEP<sup>iii</sup> and PwC<sup>iv</sup> have warned that the world needs a significant and urgent shift in investment patterns towards energy efficiency and renewable energy technologies if we are to keep global warming below the 2°C limit that all countries have agreed is a safe threshold.

**There is now an overwhelming consensus that the best way to position the UK as a modern, efficient economy attracting investment and creating jobs, while cutting carbon emissions and controlling energy bills, is to use the Energy Bill to decarbonise our electricity supply by 2030<sup>v</sup>.**

Delivering decarbonisation is about more than stating an ambition; the changes we propose to the Bill are a package to give a better platform for achieving it cost-effectively. The Bill needs to reduce our demand for power and tighten controls on carbon emitting plant. It needs to allow more innovative and community low carbon power generators into the market but stop poorly-sourced and carbon intensive biomass. It also needs to ensure transparency on how Government money for low-carbon power is being spent to ensure best value for consumers.

To achieve this, the Energy Bill must be strengthened so that it:

1. Includes a [decarbonisation target](#) as recommended by the Committee on Climate Change.
2. Supports [energy efficiency](#)
3. [Tackles the dirtiest power stations](#) with more rigorous emissions limits for new plant
4. Uses energy saving, storage and system flexibility to [match demand with supply](#) not just new power plants.
5. Ensures that only [low-carbon biomass electricity](#) is supported, at a scale that is within sustainable limits
6. Removes barriers to [independent and community generators](#) competing with the big six generators
7. Maintains the Coalition commitment to [not subsidise nuclear power](#) and increase transparency of Contracts for Difference.

### A dash for gas?

Rising gas prices have been, and will continue to be, the largest cause of energy bill increases. They added £290 to an average household bill between 2004 and 2010,<sup>vi</sup> while Ofgem has warned that bills could rise by 60% from 2009 to 2016 with heavy gas reliance in a "dash for energy" scenario.<sup>vii</sup> This compares to an expected increase of £110 for all low-carbon and energy saving measures.<sup>viii</sup>

This doesn't change significantly if Britain goes for shale – the International Energy Agency has said even with shale in Europe, there will be 40% increase in gas price from 2010,<sup>i</sup> while Deutsche Bank and Pöyry have said shale will have a marginal impact on gas prices.<sup>ii</sup> Largely as a result of the rising price of gas, the Committee on Climate Change found that a virtually carbon free power sector by 2030 would cost consumers £23 billion less than relying

predominantly on gas during the 2020s,<sup>ix</sup> and said “Early decarbonisation of the power sector should be plan A – and the dash for gas Plan Z.”<sup>x</sup>

Meanwhile, the costs of renewable technologies such as onshore wind and solar PV are falling rapidly and the £3.3 trillion global market in low carbon goods and services continues to grow.<sup>xi</sup> The UK is already a world-leader in offshore wind<sup>xii</sup>, and emerging wave and tidal technologies<sup>xiii</sup>, with huge potential for export growth. The CBI warns we could lose this position if our own energy policy is wrongly focused<sup>xiv</sup>.

## **Key amendments needed to deliver decarbonisation**

Factsheets on each of these can be found by following the links

### **1. A decarbonisation target**

The Government has delayed the decision to include a target for a virtually carbon-free power sector by 2030 in the Energy Bill until after the next election, despite clear advice from its independent advisors to set a target of 50g of carbon per kilowatt hour by 2030. The Committee on Climate Change has consistently recommended this as part of its statutory duty to identify the least cost route towards meeting our carbon reduction targets under the Climate Change Act. The Commons ECC Committee has also recommended a target of this level.<sup>xv</sup>

Mixed signals from politicians and policy uncertainty have increased the cost of financing new infrastructure and damaged investor confidence that the UK is a safe, profitable place to invest in energy. Neil Bentley, Deputy-Director General of the CBI, warns, “The Energy Bill must deliver the pace of decarbonisation required to achieve [the Carbon Budgets]. The link to the existing Climate Change Act targets should be enshrined in the Energy Bill”.<sup>xvi</sup>

A sector-specific target for 2030 would give investors a clear signal about the direction of energy policy after 2020 and encourage greater investment in UK-based supply chains. The announcement that there will be funding available (under the Levy Control Framework) to meet the 2020 renewable energy target is welcome, but is not the long-term direction that supply chain investors require to create new factories and new jobs in clean energy technologies.

If we are to reap the benefits of new factories, new jobs, and clean energy, we need to show that Britain is open for business with signals that are loud, long and legal.

### **2. Electricity saving at the heart of the Bill.**

Energy saving is the quickest and cheapest way to cut consumer bills and carbon emissions. Yet energy saving seems an afterthought in Electricity Market Reform when it should be at its heart.

After much criticism the Government is consulting on measures to reduce demand for electricity and may bring amendments to the Bill. However, there is little clarity as yet to the Government’s ambition. Germany has planned to cut its energy demand by half, and its electricity demand by a quarter by 2050, as it both decarbonises and phases out nuclear power<sup>xvii</sup>. The UK Government’s own analysis shows that demand for electricity could be cut 40% by 2030, but that current policies will achieve only 14%.<sup>xviii</sup>

The Bill must include powers for electricity demand reduction incentives that can be implemented quickly. Further measures outside the Energy Bill are also needed – including tough energy efficiency regulations and standards for buildings and products, and significant public funding for energy efficiency programmes, including the recycling of carbon revenues into energy saving programmes.

### **3. Tackle the dirtiest power stations**

The Bill aims to limit greenhouse gas emissions from new power stations through an ‘Emissions Performance Standard’ (EPS). However the limit is too high to affect new gas plant, which will also be allowed to continue

operating without improvement until 2045. The EPS ignores existing power stations, and the life-cycle emissions of biomass. The Energy and Climate Change Select Committee described the proposed EPS as “at best pointless.”<sup>xix</sup> They need significant strengthening.

#### **4. Match supply to demand**

In order to ensure the UK can provide the power it needs, the Bill makes provision for a Capacity Market, which pays generated capacity simply for being there in case it is needed. However there are other ways in which this can be achieved that are potentially cheaper and lower carbon.

The use of interconnection routes with other countries, development of power storage options, and temporarily reducing or shifting demand for power (known as demand-side response)<sup>xx</sup> which could reduce investment needed in back up power by 35%.<sup>xxi</sup> If some further generation capacity is needed, a Government-owned strategic reserve of rarely-used old plant may prove cheaper. As it stands, the Capacity Market risks creating large incentives for unnecessary new fossil fuel plants, windfalls for existing plant and holding back innovative, potentially cheaper, alternatives.

#### **5. Ensure biomass electricity is low carbon and within sustainable limits**

Biomass electricity from wastes and certain sustainably managed feedstocks can deliver significant and genuine greenhouse gas emission reductions, particularly through use in heat or combined heat and power generation. However, there are limits to the availability of sustainable biomass supply. The Energy Bill should ensure the most-efficient use of biomass and take steps to allow the Secretary of State to ensure generation levels reflect sustainable limits.

#### **6. Allow new entrants to the market and support independent and community generation**

The Contracts for Difference model proposed in the Bill is highly complex with numerous barriers making it difficult for small, independent or community generators to enter the electricity market. With wide acceptance that there is a lack of competition in the electricity market, this is a mistake.

If Contracts for Difference cannot work for smaller companies without armies of bureaucrats and contract lawyers, they should be given an alternative system to allow entry to the market. Financing smaller projects – up to 100MW – would be better managed through the Feed in Tariff system or green power auction.

#### **7. Ensure transparency in the support for nuclear power.**

UK energy policy must be determined in a transparent, evidence-based process that maximises investor and public confidence. The Bill not only risks giving nuclear a large subsidy in violation of the Coalition Agreement, but seeing it set behind closed doors. Renewable investors will be deterred if it appears they are not competing openly with nuclear power.

The Bill must ensure evidence for proposed prices and terms and conditions are in the public domain for all forms of low carbon generation. There also needs to be transparency on other costs such as public liability for insurance and waste disposal, and an expert panel publicly reviewing all costings.

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- <sup>ii</sup> Potsdam Institute for the World Bank, [Turn down the Heat](#), 2012,
- <sup>iii</sup> UNEP, 2012 <http://www.unep.org/pdf/2012gapreport.pdf>
- <sup>iv</sup> PwC, [Low Carbon Economy Index](#), 2012
- <sup>v</sup> Friends of the Earth, [For and Against a Decarbonisation Target](#), November 2012
- <sup>vi</sup> Committee on Climate Change, [Household energy bills – impacts of meeting carbon budgets](#), 2011
- <sup>vii</sup> Ofgem, [Project Discovery Energy Scenarios](#), 2009,
- <sup>viii</sup> Committee on Climate Change, [Household energy bills – impacts of meeting carbon budgets](#), 2011
- <sup>ix</sup> Committee on Climate Change, [Fourth Progress Report, Chapter 2](#), 2012
- <sup>x</sup> Committee on Climate Change, [Response to the Gas Strategy](#) December 2012
- <sup>xi</sup> Green Alliance, [Green Economy: A UK Success Story](#), 2012
- <sup>xii</sup> Crown Estate, [UK Offshore Wind Report](#), 2012
- <sup>xiii</sup> DECC, [Wave and Tidal in the UK](#) 2012
- <sup>xiv</sup> CBI, [The Colour of Growth](#), 2012
- <sup>xv</sup> Energy and Climate Change Committee, [‘Draft Energy Bill: Pre-Legislative Scrutiny’](#), July 2012
- <sup>xvi</sup> Neil Bentley, CBI Deputy Director General, October 2012  
[http://www.cbi.org.uk/media/1797512/the\\_future\\_of\\_uk\\_energy\\_policy\\_-\\_neil\\_bentley\\_speech\\_oct\\_2012.pdf](http://www.cbi.org.uk/media/1797512/the_future_of_uk_energy_policy_-_neil_bentley_speech_oct_2012.pdf)
- <sup>xvii</sup> German Federal Ministry for the Environment, [The Energy Concept](#), 2011
- <sup>xviii</sup> DECC, [Capturing the full potential of electricity efficiency](#), 2012
- <sup>xix</sup> <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmenergy/275/27503.html>
- <sup>xx</sup> Demand side response is the ability of demand to be turned down when there is a supply shortfall or, more usually, when power prices are high. Examples include appliances like fridges or washing machines being temporarily switched off, people voluntarily deciding to use less power when the incentives are right.
- <sup>xxi</sup> EU Roadmap Project, [Power Perspectives 2030](#), 2012