

The Rt. Hon. Edward Davey MP
Secretary of State
Department of Energy and Climate Change
3 Whitehall Place
London
SW1A 2AW

25 February 2013

Dear Ed

I am writing to you on behalf of the Committee on Climate Change about the Energy Bill currently being considered by Parliament.

The long-term contracts for low-carbon power generation introduced under the Bill are an important step that will help to bring forward required investments at least cost to consumers. The levy control framework agreement associated with the Bill is commensurate with the cost identified in our analysis, providing confidence over the near-term market. There has also been significant progress in resolving many of the issues previously raised, for example as relating to the contract counterparty.

We note that the Government has acknowledged the benefit of a 2030 carbon-intensity target in your recent proposed amendment to the Energy Bill. However, the delay in setting this until 2016 at the earliest means that a high degree of uncertainty about sector development beyond 2020 remains. This will adversely impact on supply chain investment decisions and project development, therefore undermining implementation of the Bill and raising costs for consumers.

- Scenarios recently published by the Government in its gas generation strategy suggest the possibility of a significant fall-off in investment in low-carbon power generation after 2020 (Attachment).

- This could be particularly damaging for investment now in the offshore wind supply chain. Such investment is required to provide confidence that costs will be reduced (and jobs realised), but this - in turn - requires investors to be confident that a market will exist beyond 2020.
- It could also delay development of projects to come onto the system post-2020, when there is no agreed funding and no clear preferred direction; such development would have to start in the very near future, given long project lead times.

Therefore, there remain significant advantages to setting a carbon intensity target committing to early power sector decarbonisation in secondary legislation *now*. Early decarbonisation is economically sensible compared to the alternative of a dash for gas through the 2020s (Attachment).

We urge that you seriously consider a further amendment to set the carbon intensity target in 2014. This would address widely-raised investor concerns and provide more confidence that there will be good value for money from the levy control framework funding.

Yours sincerely,



Lord Deben

Chair, Committee on Climate Change

cc Prime Minister

Chancellor of the Exchequer

Minister of State at the Cabinet Office

Attachment: the need to resolve uncertainties about the direction of travel for power system development

In the Gas Generation Strategy (December 2012), and more recently the Impact Assessment on CfD design accompanying the Energy Bill (published in January 2013), the Government have put forward scenarios that reach carbon-intensity of 50g, 100g and 200g CO₂/kWh in 2030.

All three scenarios share a broadly similar generation mix in 2020, with approximately 35% of generation from renewables, just under 20% from nuclear, 2% from CCS, 20% unabated gas and 10% unabated coal¹. This reflects that the Government has set out a clear vision for the near-term to 2020:

- To meet the EU renewable energy target, by 2020 at least 30% of UK electricity generation must be from renewable sources (compared with around 10% in 2012).
- The UK CCS Commercialisation Competition will provide £1 billion of capital funding to support the demonstration of CCS, supporting up to four demonstration plants (between 300 - 570 MW each).
- The carbon price floor will provide additional support when it is introduced in April this year, rising linearly to around £32 / tCO₂ in 2020 (2011 prices).
- The budget for support for low-carbon generation in 2020 via the Levy Control Framework has been set at £7.6 billion (2011/2012 prices).

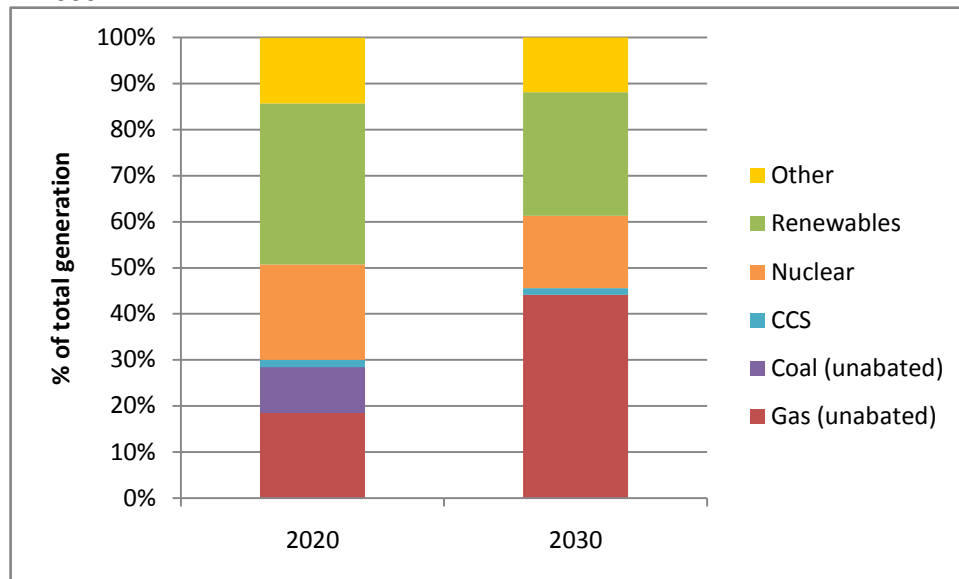
However, the outlook beyond 2020 is very unclear. In particular, the 200g scenario put forward by the Government in the Gas Generation Strategy, and more recently in the CfD Impact Assessment, reflects very limited investment in low-carbon generation beyond 2020:

- In this scenario, the share of unabated gas generation expands to approximately 45% of the mix, at the expense of nuclear and renewable generation (which decline to around 15% and 30% respectively by 2030) (Figure 1).
- On the basis of the Government's projections for demand and retirements², we estimate that in contrast to a 50g and 100g scenario, a scenario that reaches 200g CO₂/kWh in 2030 would require little or no further investment in low-carbon generation beyond 2020 (Figure 2). Instead, investment would be focused on unabated gas.

¹ 15% of generation is from 'other' sources, including imports, autogeneration and storage. Source: Charts 9, 10 and 11 in DECC (February 2013) *Impact Assessment: Electricity Market Reform – ensuring electricity security of supply and promoting investment in low-carbon generation*. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/73257/contracts_f_or_difference_ia.pdf.

² UEP (October 2012) *Updated Energy and Emissions Projections*.

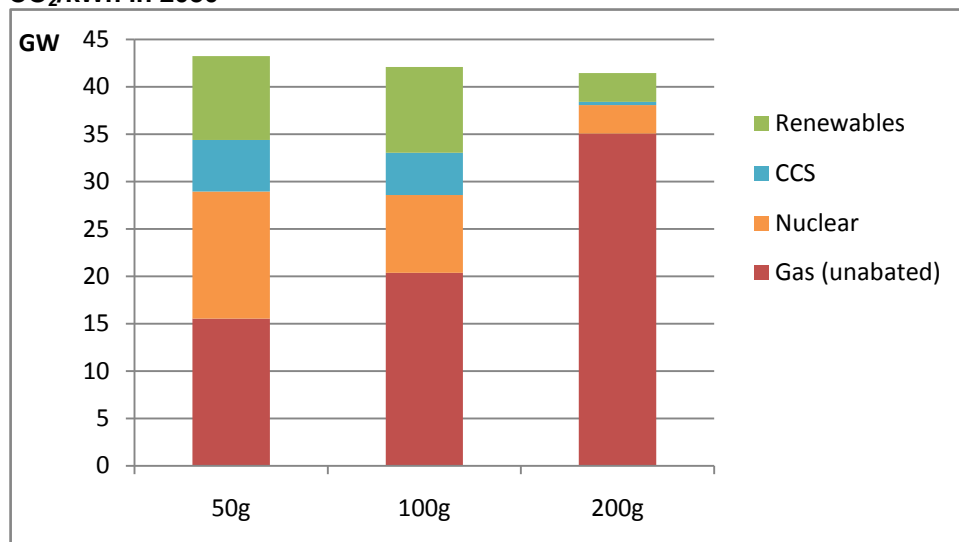
Figure 1. Share of generation in 2020 and 2030 – a scenario that reaches 200g CO₂/kWh in 2030



Source: DECC (February 2013) *CfD Impact Assessment*, Chart 11.

Notes: Shown as a percentage of total generation. 'Other' category includes autogeneration, storage and interconnection.

Figure 2. New build capacity in the 2020s: scenarios that reach 50g, 100g and 200g CO₂/kWh in 2030



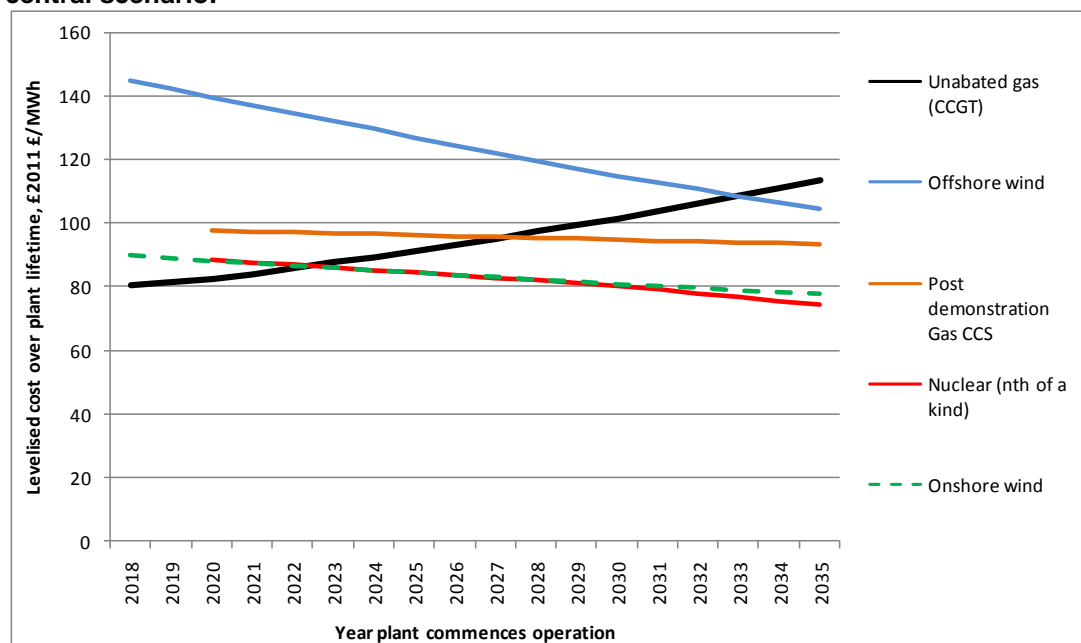
Source: CCC calculations, based on DECC *CfD Impact Assessment* (February 2013) and *Updated Energy and Emissions Projections* (October 2012).

Notes: Capacity is measured on a 'nameplate' basis (i.e. not adjusted for availability). Estimates of total installed capacity & new build based on the share of generation in CfD Impact Assessment applied to total generation in Updated Energy Projections (UEP), excluding autogeneration, storage and interconnection. Assumes gas runs at an average annual load factor in the corresponding scenario in the Gas Generation Strategy; renewables and nuclear running at full availability. New-build capacity calculated based on scheduled retirements in UEP.

Clarity over the direction of travel beyond 2020 is required now to support offshore wind supply chain investment and project development more generally:

- Significant investment is required to develop the offshore wind supply chain in the UK, which would enable the local manufacture and assembly of key components. This is essential in order to drive innovation and cost reduction as identified by the Offshore Wind Task Force.
- Supply chain manufacturers will not make investments if they believe that there will be no market for offshore wind after 2020.
- As offshore wind is unlikely to be cost competitive with fossil generation facing a carbon price before the mid-to late 2020s, investors require certainty that there will be ongoing support in the 2020s (Figure 3).
- Long lead times for low-carbon investment projects (e.g. 7+ years) mean that project development is required in the near future for investments to become operational in the early 2020s. However, it is unlikely that investors will incur significant project development costs across the range of low-carbon technologies given current uncertainties.

Figure 3. Levelised cost of generation 2018-2035, unabated gas and low-carbon, central scenario.



Source: CCC calculations, based on Mott MacDonald (2011) and Parsons Brinckerhoff (2011).

Notes: £2011. Assumes plant runs at full availability. Central cost ranges only (capex, opex and gas price), although there is considerable uncertainty, e.g. over offshore wind costs for which the full range for 2030 is £90-140/MWh. Gas CCGT and residual emissions from Gas CCS face a carbon price in line with the Government's carbon values, including the carbon price floor, rising to around £70/tCO₂ in 2030.

In our previous letter to you in September 2012³, we set out the case that significant investment in low-carbon power generation in the 2020s is necessary and cost effective on the path to meeting the 2050 target.

- Without significant low-carbon investment, power sector emissions would account for almost all of the allowed emissions under the 2050 target (i.e. 150 MtCO₂ of the 160 MtCO₂e available).
- Power sector decarbonisation and electrification is key to cutting emissions in surface transport, heat in buildings, and possibly heat in industry; together emissions from these sectors account for just over half of UK greenhouse gas emissions.
- Early investment in low-carbon technologies is required to achieve longer-term objectives given build-rate constraints (e.g. it would not be feasible to add low-carbon capacity required in 2050 entirely in the period from 2030), and the need to develop less-mature technologies for subsequent deployment.
- There is the opportunity for early investment given significant capital stock turnover in the next two decades (i.e. around 50-60 GW of new baseload capacity is required between now and 2030, much of which will still be on the system in 2050).

In our December 2012 report: *Energy Prices and Bills*⁴, we showed that electricity price impacts of committing to a low-carbon path beyond 2020 are very limited, with comparable prices to the alternative dash for gas through the 2020s, and relatively low prices thereafter:

- Investment in onshore wind and nuclear generation through the 2020s is likely to have only a limited impact on prices (our analysis suggests costs for these technologies averaging £85/MWh in the 2020s, compared to around £80/MWh for unabated gas generation in 2020 when including the carbon price underpin at £32/tCO₂). (Figure 3).
- The scale of the cost premium likely to be required for offshore wind can be expected to decline. As a result, on a central expectation, continued deployment of offshore wind through the 2020s at the same rate as in the 2010s would only add a further £13 to annual bills for the typical dual fuel household in 2030; impacts due to further investment in CCS would also be limited given falling costs.
- Support for renewable generation added before 2010 at relatively high cost would expire in the 2020s, helping to reduce bills.
- Beyond 2030, we would expect prices to fall in a scenario where there is investment in low-carbon technologies through the 2020s, this due to ongoing learning and innovation. In contrast, we would expect increasing prices where the focus through the 2020s is on investment in unabated gas-fired generation, based on deployment of low-carbon technologies at high cost and the increasing carbon price applied to gas-fired generation.

Hence, a clear commitment to continue investing in low-carbon technologies through the 2020s (e.g. to reduce carbon-intensity to around 50g CO₂/kWh in 2030 subject to cost reductions being achieved) would support supply chain investment and project development

³ Letter from CCC to Ed Davey, 13th September 2012, available at:

<http://hmccc.s3.amazonaws.com/EMR%20letter%20-%20September%2012.pdf>

⁴ Available at:

http://hmccc.s3.amazonaws.com/ENERGYbill12/1672_CCC_Energy-Bills_bookmarked.pdf

consistent with the cost-effective path to achieving longer term objectives. It would have very limited impact on electricity prices in the 2020s relative to alternative approaches, and relatively low prices thereafter.