

Committee on Climate Change – Call for Evidence,
7 Holbein Place,
London
SW1W 8NR

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Dear Sirs

Review of the Fourth Carbon Budget – Call for Evidence

National Grid welcomes the opportunity to contribute to the call for evidence regarding the Review of the Fourth Carbon Budget. National Grid plays a vital role at the centre of the energy industry connecting millions of people safely, reliably and efficiently to the energy they use. National Grid owns and operates the high voltage electricity transmission system in England and Wales and as National Electricity Transmission System Operator (SO) operates the Scottish high voltage transmission system. National Grid also owns and operates the gas transmission system throughout Great Britain and through the low pressure gas distribution business, distributes gas in the heart of England to approximately eleven million offices, schools and homes. In addition, National Grid owns and operates significant electricity and gas assets in the US, operating in the states of New England and New York.

In the UK, National Grid's primary duties under the Electricity and Gas Acts are to develop and maintain efficient networks and also to facilitate competition in the generation and supply of electricity and the supply of gas. Activities include the residual balancing in close to real time of the electricity and gas markets. Through its subsidiaries, National Grid also owns and maintains around 18 million domestic and commercial meters, a Liquefied Natural Gas (LNG) importation terminal at the Isle of Grain, and has shared ownership and operation of the electricity interconnectors between England and France (IFA) and England and the Netherlands (BritNed). In addition, the wholly owned subsidiary, National Grid Carbon Limited, has advanced the transportation and storage elements of the Carbon Capture and Storage (CCS) supply chain.

Question 1 Does the scientific evidence justifying the climate objective remain the same as in 2010? In particular, is there new evidence on climate change impacts?

Whilst National Grid is not best placed to comment on whether there have been developments since 2010 in climate science or the impact of climate, National Grid continues to believe that climate change is one of the biggest challenges facing society today. We believe that we must lead the way in tackling it and supporting society in reducing the amount of greenhouse gas it releases into the environment.

National Grid is committed to reducing corporate Green House Gas emissions by 45% by 2020 and 80% by 2050. We have put in place carbon budgets for each of the lines of business, we value carbon in our economic decision making and we are testing our resilience to climate change impacts.

Question 2 Have the emissions pathways consistent with achieving this objective changed? In particular, is there new evidence on climate sensitivity to emissions?

National Grid is not best placed to comment on whether there is new evidence on climate sensitivity to emissions.

Question 3 Does the climate objective remain in play given international developments? Has the likelihood of getting global agreement changed significantly since the budget was set, and if so why?

National Grid is not best placed to assess whether the climate objective to limit central estimates of temperature rise to as little above 2°C as possible and to keep the risk of a 4°C rise to very low levels (e.g. less than 1%) is still appropriate given international developments. This is a policy decision for government guided by the latest scientific evidence. However, for the objective to be achieved, global accord on climate change action via international agreements is essential, leading to increasing policy harmonisation across Europe and greater progress globally. Whilst National Grid is not best placed to assess whether the likelihood of achieving global agreement has changed since the budget was set, we note that there have been a number of relevant developments in the global energy scene, including recent announcements by the US and China to reduce carbon emissions, the impact of shale gas both directly in the US and indirectly globally regarding coal prices, the impact of recession on energy demand and the impact of the Fukushima disaster on new nuclear plans and demand for other fuel types.

Question 4 How have the prospects for a new EU package for 2030 changed since the Committee's advice and the setting of the budget? What implications do the latest expectations have for the fourth carbon budget?

National Grid welcomed the opportunity to respond to the European Commission's consultation on the 2030 Framework for climate and energy policies. Much of Europe's energy infrastructure is aging and needs to be replaced. At the same time, as we move towards a low carbon economy, new energy sources are emerging presenting further challenges and opportunities for infrastructure development alongside security of supply and affordability. On this latter point, energy prices have recently been identified as a major priority issue by the EU Heads of State in their recent EU Council meeting in May. We are clearly now in a significant time of change and challenge for the industry as we seek to balance the need for continued energy security with affordability and sustainability.

In our role as energy transmission and system operator, National Grid sits at the heart of these challenges and we have worked with stakeholders to build a set of scenarios covering the range of plausible outcomes of gas and electricity supply and demand out to 2035 in our [UK Future Energy Scenarios](#), the latest edition of which was published on 18th July 2013.

We consider that the setting up of long-term greenhouse gas emission reduction targets at a European level is of clear benefit as it facilitates a long-term policy framework to combat climate change across Europe. We believe however that any 2030 targets should remain neutral in terms of energy sources; meeting a greenhouse gas target can be achieved by adopting a range of renewable and low carbon technologies.

National Grid also believes that the role of energy infrastructure should be recognised in the establishment of a 2030 energy and climate change framework. Throughout Europe, the need for interconnections and integration of new energy sources into the main network is very much a key issue and in the UK alone, we plan to invest billions of pounds in new infrastructure over the next decade.

A clear and stable long-term regulatory framework ensuring a smooth transition from the 2020 to the 2030 framework is crucial.

A binding 2030 carbon emission reduction target would provide significant advantages:

- It would set up a long-term European and UK policy framework for carbon emissions reduction throughout Europe;
- It would provide European energy companies with a long-term predictability and certainty on energy investments;
- More generally it would encourage the use of cleaner, more sustainable energy technologies.

If the European Commission were minded to introduce a 2030 target for energy sources, a more complementary approach to a carbon emissions reduction target might be a target for new investments in "low carbon" energy rather than renewable energy specifically, which among other things could serve to encourage development of Carbon Capture and Storage generation. It would

also enable Member States to retain greater flexibility over their choice of energy mix to meet any carbon emissions reduction target.

Question 5 What flexibilities are appropriate to reflect possible future changes in EU and international circumstances?

The setting up of long-term greenhouse gas emission reduction targets is of clear benefit as it facilitates a long-term policy framework to combat climate change. It is important that any potential flexibility within the carbon budgets does not undermine long term predictability and certainty on energy investments, which is essential if the UK is to achieve the necessary levels of investment in new energy projects. Finding a strategy with truly optimised costs requires detailed modelling of the whole European energy system. The lowest cost will probably require trading in carbon or renewable allowances between Member States but we recognise that setting up a transparent and effective trading mechanism is likely to prove difficult, as recent experiences with the EU Emissions Trading Scheme demonstrates.

Question 6 Is there any new evidence to suggest that the type of scenarios upon which the budget was based are no longer feasible or cost effective?

National Grid updates its [UK Future Energy Scenarios](#) on an annual basis. Our stakeholders' views are integral to the development of our scenarios. There is considerable uncertainty when considering the future of energy and our scenario-based approach enables us to visualise and plan for the future. It is this uncertainty that has led us to adopt an axiom-based approach, whereby we explicitly state the underlying assumptions, or axioms that underpin our scenarios. These have enabled us to qualify the range of uncertainty in many areas, such as government policy, economic outlook, energy efficiency, fuel prices, new technologies, energy use behaviours, global gas markets and shale gas to name but a few. Our scenarios have evolved to reflect the changing levels of uncertainty. Our Gone Green scenario is explicitly designed to meet the environmental targets, including the 15% of all energy from renewable sources by 2020, greenhouse gas emissions meeting the carbon budgets out to 2027, and an 80% reduction in greenhouse gas emissions by 2050.

Over the years the levels of generation capacity for wind, biomass and solar have changed considerably in our Gone Green scenario, as have our assumptions regarding the levels of take up of electric vehicles and heat pumps. These levels have been driven by the views of our stakeholders at the time. We therefore feel it would be appropriate to review the scenarios given that they are now several years old.

Question 7 In particular, does the possibility of shale gas in the UK change the economics of the fourth carbon budget

There are considerable uncertainties regarding the development of shale gas within the UK, including, but not limited to, levels of shale gas reserves, government policies and initiatives, test drill results, environmental and planning consents, production economics and supply chain logistics. National Grid recognises that the development of shale gas reserves within the UK could provide a material contribution to the UK gas supply mix in the future, both in terms of diversity and security of supply. In our latest set of [UK Future Energy Scenarios](#), we present a range of potential outcomes for shale gas within the UK, with our high case shale sensitivity showing shale contributing between 15%-20% of the UK gas demand by 2035.

Question 8 Should the budget be tightened to reflect headroom due to significantly lower emissions projections (e.g. due to slower than expected economic growth) since 2010?

Where definitional and or calculation methodology changes have been made to the baselines, these should be reflected in the budget: they may not be material at this point, but the discipline is important to ensure stakeholders are clear that there will be this level of rigour applied, in case it is material in the future. Where headroom is retained within the budget, it is important that analysis is undertaken to indicate in which sectors this headroom could be utilised (i.e. those where there is greater uncertainty or choice). Without that structural "apportionment" there is a risk that all sectors assume they have a greater "share" of any available headroom to play with, resulting in an aggregate outturn over budget.

Question 9 Is there any new evidence to suggest that (incremental) impacts of the fourth carbon budget on competitiveness, the fiscal balance, fuel poverty and security of supply have become unmanageable?

National Grid is not best placed to answer this question.

Question 10 Is there any new evidence on differences in circumstances between England, Wales, Scotland and Northern Ireland that suggest the need to change the budget?

National Grid is not best placed to answer this question.

Yours faithfully

[By e-mail]

Richard Smith

Head of Energy Strategy & Policy