



Ofgem Project Discovery

ClientEarth consultation response

Project Discovery should evaluate demand side policy responses

1. ClientEarth is a non-profit environmental law, science and policy organisation incorporated as a limited liability company and registered as a charity in England and Wales. The charitable objects of the organisation include promoting and encouraging the enhancement, restoration, conservation and protection of the environment, including the protection of human health, for the public benefit.
2. The Project Discovery consultation states:

“High levels of investment are likely to be needed to secure energy supplies and meet carbon targets –up to £200 billion may be required over the next 10-15 years. This would more than double the recent rate of investment...”

...Existing regulatory and market arrangements will be seriously tested. We are currently conducting an assessment of these arrangements given the challenges that we have identified, and are considering what policy responses may be required.”ⁱ
3. Project Discovery should not focus exclusively on developing policy responses in relation to the supply side of the UK’s energy markets. In addition to evaluating the sources of supply for nuclear, gas, coal and renewables, Project Discovery should also evaluate the effectiveness of existing regulatory and market arrangements from a demand-side perspective, including energy efficiency, sometimes referred to as the “fifth fuel”.ⁱⁱ

4. The Project Discovery consultation states:

“Energy markets are inherently uncertain. At both a global and regional level, they are a provision of interacting factors affecting wholesale and retail energy markets that are constantly in flux. We do not believe it is possible to predict with any certainty the likely future development of the market particularly over the long term. Nevertheless, it is important to understand the range of possible outcomes and in particular the risks to secure and sustainable energy supplies.”ⁱⁱⁱ

5. As the Project Discovery consultation acknowledges, many of the matters that govern security of energy supply are matters that are beyond the direct control or influence of the UK government (i.e. the carbon price created by the EU ETS, the Russia-Ukraine gas crisis, and the construction of the Nabucco pipeline). In contrast, demand-side policy responses, such as energy efficiency, can be directly controlled by the UK government.
6. Both the gas and electricity efficiency assumptions referred to in Appendix 2 of the Project Discovery consultation could be significantly improved.^{iv}
7. The most important energy efficiency measure that Project Discovery should consider is decoupling. Decoupling breaks the link between how much energy an energy company sells and the revenue it collects to cover fixed costs. Fundamentally, decoupling eliminates an energy company’s incentive to encourage consumers to increase energy use in order to increase profits as well as its disincentive to promote energy efficiency.^v E.on has commented on the demand-side dilemma of the energy market as follows:

“Investment and innovation Demand side dilemmas.....How to make money from selling less energy How to make customers want to consume less”^{vi}

8. Decoupling provides an effective policy response to these questions and should be a key component of any effective strategy to decarbonise the UK’s energy markets.

Findings by the Committee on Climate Change (the CCC) support reform of the demand side of the energy market

9. The CCC commented on existing electricity market arrangements in its 1st report presented to Parliament pursuant to section 36(1) of the Climate Change Act 2008 (the 1st CCC Report):

“The power system that we have committed to create will be characterised by increasing amounts of intermittent and inflexible generation operating with very low short run marginal costs...Under current arrangements, the electricity price in this system would be increasingly peaky (i.e. low for much of the time and very high for a small number of time periods)...this price volatility would compound uncertainty associated with the volatile EU ETS price.

*These two sources of policy uncertainty exacerbate a potential problem caused by a **mismatch between private and social risk under current arrangements:***

- *A private investor risk in a low-carbon technology (e.g. nuclear) is subject to fossil fuel price risk, carbon price risk, electricity price risk, and technology cost risk...*
- *For a society committed to power sector decarbonisation, the only relevant risks are those associated with the costs of the low-carbon technology (i.e. risks associated with capital and fuel costs and operational characteristics of that technology).*

*Given this mismatch there is a danger that private investors will tend towards investing in gas-fired power generation rather than the low-carbon generation which is required, and that this will jeopardise meeting carbon budgets and/or increase the costs of doing so. **We note that no other country has relied on a fully liberalised electricity market of the type that we have in the UK to deliver investments in low-carbon generation...***

...Options for market intervention

The options which we believe could potentially improve on the current market arrangements in delivering low-cost, low-carbon generation investment include...:

- *Measures to strengthen the carbon price signal (e.g. underpinning the carbon price at the EU or UK level, extending the Climate Change Levy exemption to all new low-carbon sources)*
- *Measures to provide confidence over the price received by low-carbon generation (e.g. feed-in tariffs for low-carbon generation, tendering for low-carbon capacity)*
- *Measures to ensure investment in low-carbon capacity (e.g. a low carbon-obligation, possibly as part of a wider capacity obligation, or an emissions performance standard).*

These options have not previously been assessed in the UK. The [CCC] recommends that they should now be seriously considered given the new context, in which the UK has committed to cut emissions by 80% in 2050, and where decarbonisation of the power sector in the period to 2030 is vital in achieving this goal.^{vii}

[emphasis added]

10. Although the CCC has recognised “a mismatch between private and social risk under current arrangements” the CCC has not proposed measures to reform the existing UK energy market that focus directly on energy efficiency, such as decoupling.

11. The 1st CCC Report does recognise that a new policy for energy efficiency to replace the Carbon Emissions Reduction Target (CERT) is required:

“Neighbourhood approach

In considering the neighbourhood approach, the Committee has noted three important findings from social research evidence base put together by Defra, DECC and the Energy Saving Trust:

- **Community based approaches.** *Defra survey evidence suggests that a majority of people are keen to act on climate change (either because they are concerned about this directly, or want to save money, avoid waste, etc.) subject to caveats that this should not significantly disrupt current lifestyle (e.g through restricting mobility). People are concerned, however, that their individual impact will be limited. Community based action is therefore desirable so that people can see how their action together with that of others will make a difference. Beyond a critical mass, people will join community based action simply to conform to social norms even though they may not necessarily want to act on climate change.*
- **Government leadership.** *The majority of respondents in Defra survey say that they are looking for the Government to provide a lead on tackling climate change, and that they would be prepared to act if the Government were to act first. The current situation is one where people do not generally perceive energy efficiency improvement in homes to be a top government priority, and so do not make it their own priority. A stronger signal from Government through actively leading and participating in taking forward implementation of measures to improve energy efficiency would therefore raise confidence that measures to improve energy efficiency will be successfully implemented.*

- **Role for energy companies.** *Evidence from the Energy Saving Trust questions how trusting the population is of energy companies, suggesting that only 10% of those surveyed consider suppliers trustworthy and impartial when providing advice on how to save energy. Energy companies may not therefore be well placed to lead on what in many respects is a fundamental social transformation (e.g. to mobilise communities, change attitudes and behaviours) required to achieve widespread implementation of buildings fabric measures, and may better placed to focus on delivery within a government led framework.*

A neighbourhood approach led by government aimed at transforming social attitudes, could therefore better meet the second criterion for effective policy than the current situation where the lead is with energy companies.”^{viii}

12. Although we agree with the CCC that there are many problems with the existing CERT system, we think that the proposed replacement energy efficiency strategy such as “the neighbourhood approach” described in the 1st CCC Report will not, on its own, be enough. Rather than be excluded from a process that the CCC acknowledges requires a fundamental social transformation, energy companies should become an integral part of a positive regulatory solution. The demand side of the energy market needs to be reformed to align the financial incentives of energy companies with their customers.
13. The CCC has stated that meeting an 80% emission reduction target would be challenging but feasible based on range of options, including energy efficiency in buildings and industry (e.g. loft and cavity wall insulation, use of more efficient appliances, turning appliances off and using less air conditioning).^{ix}
14. Effective financial and legal incentives are needed to encourage energy efficiency for the 26.7 million domestic electricity accounts held by individual households in the UK. This should include minimum legal standards for homes, products and appliances. An integrated strategy is needed that involves central Government and local authorities.

15. However, for a variety of reasons that the 1st CCC Report acknowledges, including apathy, distrust of energy companies and reluctance to invest in new technology especially if investments are relatively expensive and do not pay for themselves almost immediately, individual householders are unlikely to take effective energy efficiency action on their own.^x Large and sophisticated vertically-integrated energy companies should be much more prepared to make long-term investments which offer reasonable rates of return over a number of years.^{xi} It has been commented:

“[The] only institutions that have the infrastructure, capital and customer base to empower lots of people to become energy efficient are the utilities, so they are the ones who need to be incentivized to make big investments in efficiency that can be accessed by every customer.”^{xii}

16. The UK government should ensure that the “neighbourhood approach” is supplemented by the creation of regulatory and financial incentives that reward the vertically-integrated energy companies that generate and then supply electricity to UK households and industry for energy efficiency rather than the total volume of electricity sold.

Decoupling is being successfully implemented in the United States

17. Decoupling in California has neutralised the “demand side dilemma” or perverse incentive that energy companies have to sell more energy.

“The key in California was smart policy that aligned all the incentives. We adopted aggressive standards for buildings and appliances. We funded programs to help commercialize more efficient technologies. And we decoupled utility earnings from sales... [Decoupling is] one of the most important opportunities out there – and yet it’s still one of the least understood secrets of California’s success. We want to change that. And investors should want to change it as well.”^{xiii}

18. Decoupling is not just confined to California but is becoming an increasingly important and prevalent regulatory tool across the United States. Eight states in the United States have adopted electricity decoupling regulations and 18 have adopted gas decoupling regulations. In addition, a further 11 states have electric decoupling regulation pending and a further 18 states have gas decoupling regulation pending.^{xiv}

19. Decoupling is an important component of a range of regulatory tools that need to be applied at different stages of the electricity market to effectively fight climate change:

- i. Energy efficiency regulations that reduce the demand for electricity and thus prevent CO₂ emissions;
- ii. Planning regulations that ensure that only efficient low carbon energy infrastructure is built; and
- iii. Emissions regulations, including cap and trade systems such as the EU ETS, that are designed to create an incentive to identify low cost solutions to reduce and avoid CO₂ emissions.

20. The California and UK models for regulating electricity markets have different starting points but could eventually become quite similar.

21. The California regulatory model of electricity market involves:

- Decoupling^{xv} → interim EPS^{xvi} → Cap and trade

22. Possible UK regulatory model of electricity market:

- Cap and trade (EU ETS) → DECC's proposed framework for the development of clean coal → market reforms emerging as a result of Project Discovery.

Decoupling has advantages over other approaches to improving energy efficiency

23. The UK's highly liberalised energy market currently requires private sector energy companies to forecast energy demand. Private sector forecasting inevitably encourages gaming and gambling.

We note the 1st CCC Report states:

"It is very difficult for investors to make an investment case on the expectation of a high EUA price in ten years' time. There is anecdotal evidence that the current price is often used in investment decisions as a best estimate of the future price."^{xvii}

24. A decoupling-based regulatory regime provides that regulators, not energy companies, forecast demand and allow energy companies to charge a price that would recoup their fixed return on the basis of that forecast. If demand turns out to be lower than expected, the regulator lets prices rise so that the energy company can make the mandated profit; if it is higher, the regulator cuts prices to return the excess to customers.
25. Decoupling regulates the amount of electricity that energy companies can supply by creating a pricing regime that is designed to encourage energy efficiency. It is a sophisticated, transparent and principled way of internalising social risk and managing uncertainty.
26. Decoupling aligns an energy supply company's profitability with energy efficiency, building into the energy market an incentive for the company to implement energy efficiency measures. In contrast, measuring efficiency or energy demand reductions through verification processes such as "white certificates" creates an additional artificial administrative or "cost-compliance" burden for an energy company. The "white certificate" approach is also potentially open to subjective interpretation and possible manipulation during the audit verification process.

Decoupling is an important component of an array of regulatory tools to improve energy efficiency.

27. Decoupling has the potential to be a powerful regulatory tool. It is not however the complete answer to energy efficiency. For example, measures to alleviate social issues such as fuel poverty should be principally geared towards improving the energy efficiency of fuel-impooverished households.
28. Decoupling could, for example, also balance a consumer policy that financially penalised consumers for using more electricity, such as rising block tariffs.^{xviii} A perceived disadvantage of rising block tariffs is that it has been seen as a way for supply companies to profit at the expense of consumers. If energy supply companies' profits were decoupled, this concern may be addressed. Under a transformed regulatory regime that involved both rising block tariffs and decoupling, both consumers and electricity companies would have financial incentives to use less electricity.^{xix}

20 November 2009

ⁱProject Discovery consultation overview.

ⁱⁱhttp://select.nytimes.com/2007/08/22/opinion/22friedman.html?_r=1&hp=&adxnnl=1&adxnnlx=1187798919-u55zkEoNbz047vcxvSdsXA

ⁱⁱⁱProject Discovery consultation paragraph 2.4

^{iv}See Gas energy efficiency assumptions on page 79 and electricity efficiency assumptions on page 89 of Project Discovery consultation.

^vhttp://www.raonline.org/showpdf.asp?PDF_URL=%22docs/RAP_Schwartz_IssuesletterSept09_2009_08_25.pdf%22

^{vi}“Today and tomorrow matter because of the day after tomorrow” Simon Skillings 23 March 2005

<http://www.ofgem.gov.uk/About%20us/PwringEnergyDeb/Documents1/11849-energydebateamarch.pdf>

^{vii}Pages 135 to 148 of the 1st CCC Report.

^{viii}Pages 162 and 163 of the 1st CCC Report.

^{ix}Letter to Lord Turner, Chair of Climate Change Committee to Mr Ed Miliband Secretary of State for Department for Energy and Climate Change.

^xResearch by the SDC suggests that consumers aren’t prepared to invest in measures that don’t give an immediate economic return (SDC Supplier Obligation Project Household energy from 2011Final Report).

^{xi}Climate Change Capital study for DEFRA on the Supplier Obligation post-2011: potential commercial models to deliver demand reductions. Page 20 states:

“CCC believes energy suppliers are likely to be the most effective conduit for developing a culture of demand reduction among the general public. This is because they:

- *are the source of electricity and gas;*
- *have access to capital;*
- *have an interest in maintaining profitable businesses;*
- *have access to millions of customers to deploy capital to;*
- *can obtain information about customers’ energy profiles;*
- *are well-known brand names, and*
- *obligating them follows the EU’s ‘producer responsibility’ model.”*

^{xii}See endnote 2 above.

^{xiii} Peter A. Darbee Chairman, CEO and President PG&E Corporation United Nations/Ceres Investor Summit 14 February 2008.

^{xiv} http://www.raonline.org/docs/NRDC_Decoupling%20Maps%20US_2009_08.pdf

^{xv} In 1982 California adopted an Electric Revenue Adjustment Mechanism and became the first US state to decouple utility revenue from sales and removed disincentives for energy efficiency and conservation. Oregon, Maryland, Idaho, New York and Minnesota have also all adopted forms of decoupling.

^{xvi} 27 September 2006 Governor Arnold Schwarzenegger signed into law the Greenhouse Gas Emissions Performance Standard Act (Senate Bill 1368).

^{xvii} Box 4.12 on page 139 of the 1st CCC Report.

^{xviii} SDC Supplier Obligation Project Household Energy from 2011 Final Report describes rising block tariff as follows:

“A different approach for charging for electricity: At the moment, most electricity tariffs offer one price for the first 100 units of electricity used and then a lower price for any units over that amount. The rising block tariff would flip this around. Householders would be offered a tariff where the cost of the units increases as more is used. Low electricity use would result in lower costs, whereas high electricity use would result in higher costs.”

^{xix} Climate Change Capital study for DEFRA on the Supplier Obligation post-2011: potential commercial models to deliver demand reductions. Page 21 states:

“For energy companies a key issue will be overcoming customer distrust of the notion that they would want to sell less energy and save customers’ money. There will be a requirement for strong leadership; a commitment to deploy resources and effort to deliver demand reduction; and a belief that with the right business models profits can be made from selling less energy.”