



Campaign to Protect
Rural England

Electricity Market Reform

**A response by CPRE to the Department for Energy and Climate Change consultation
March 2011**

1. The Campaign to Protect Rural England (CPRE) welcomes the opportunity to respond to this consultation. We are the country's leading third party participant in the planning system, and our county branches and district groups are closely involved in planning at the local level. We have a long history of engagement with planning for energy infrastructure, and wider energy policy. CPRE supports the UK's 15% renewable energy target and the 80% greenhouse gas reduction target. We believe that promoting energy efficiency and reducing energy demand are the first measures that should be adopted to achieve these targets, and we are keen to ensure that reform of the electricity market (EMR) delivers a framework which incentivises this. We are aware, however, that energy efficiency and reduction will not, on their own, achieve climate targets. We are therefore concerned to ensure that the EMR produces a market which delivers appropriate infrastructure at least cost to the environment.

Overarching comments

2. CPRE supports the Government's analysis of the current market insofar as we believe that it will not deliver decarbonisation of the power sector at the pace recommended by the Committee on Climate Change or in the most environmentally sustainable manner. Reform is clearly required. In pursuing this reform, we urge the Government to:

- Set in place a durable, long term framework for sustainable energy. Delivering affordable, sustainable energy supplies which are acceptable to the public will require certainty in the structure of the market. However, EMR is about more than efficient markets – it will determine the quantity, mix and broad location of a great deal of the infrastructure required to achieve the 80% decarbonisation target. CPRE therefore believes it is as much about the wider environmental sustainability of the outcomes that it delivers as about greenhouse gas emissions alone.
- Place demand-side measures – including short term demand response to assist with short term balancing, long term managed energy reduction to reduce total energy consumption, and distributed generation (D3) – at the heart of the EMR. At present, proposals for EMR are heavily biased in favour of supply-side measures: as the Government's own *2050 Pathways* analysis shows, not dramatically reducing consumption both at peak times and overall will mean much more infrastructure will be required to decarbonise, increasing pressure on the extent, beauty and tranquillity of the natural environment.
- Establish a strong Emissions Performance Standard (EPS) which caps emissions for new fossil fuel plant at the level of modern gas plant, and which reduces progressively in the 2020s. This will provide certainty to developers and help to prevent a rush for unabated gas which risks locking UK electricity production into a high carbon pathway.
- Align the subsidy regime for renewables and other low carbon technologies with the environmental protection and sustainable development goals enshrined in the planning system and other policy frameworks (such as the forthcoming Natural Environment

White Paper). Assuming one of the Government's preferred subsidy mechanisms – premium or CfD FITs – is chosen, subsidy levels for these technologies should reflect their likely risk to landscapes and wildlife.

- Explicitly seek to deliver a coherent integrated offshore grid which will reduce the amount of infrastructure required to connect offshore renewables and interconnectors to the onshore grid. As with energy efficiency and demand reduction, this is a 'no regrets' option which will reduce environmental impacts from, increase public acceptability of, and reduce the cost of decarbonisation.

Detailed comments

3. Responses to the questions set out in the EMR consultation document are detailed below. We have limited our response to those questions related to CPRE's area of interest and expertise.

Current Market Arrangements

Q1. Do you agree with the Government's assessment of the ability of the current market to support the investment in low-carbon generation needed to meet environmental targets?

4. Yes. CPRE supports the Government's view that the current market will not deliver the Government's goals for decarbonisation. However, we disagree with the assumption which underlies this question. The purpose of EMR should be to deliver a market which secures investments in technologies and techniques which deliver a low-carbon electricity sector, regardless of whether these technologies or techniques relate to generation, energy reduction, or demand shifting.

Feed-in Tariffs

Q3. Do you agree with the Government's assessment of the pros and cons of each of the models of feed-in tariff (FIT)?

Q4. Do you agree with the Government's preferred policy of introducing a contract for difference based feed-in tariff (FIT with CfD)?

Q5. What do you see as the advantages and disadvantages of transferring different risks from the generator or the supplier to the Government? In particular, what are the implications of removing the (long-term) electricity price risk from generators under the CfD model?

5. CPRE agrees with many of the pros and cons identified for each of the models of FIT, and supports the broad rationale behind selecting this form of subsidy mechanism. More broadly, we do not favour a low-carbon obligation as its complexity is likely to disincentivise small generators (including small scale renewables) and be more expensive than a FIT model. In contrast, the Regulated Asset Base (RAB) model presents a potential benefit: in addition to reducing the capital cost for low carbon technology and requiring the Government to specify much more clearly its preferred energy mix – an activity which would aid in strategic planning for required infrastructure – it also would enable the incorporation of wider environmental factors (such as protection of the countryside) into decisions on which technology mix to aim for and the overall level of need for new power plants. However, this must be balanced against the concern that a RAB model essentially nationalises a significant part of the energy system, and that experience of the CEGB's attention to environmental concerns shows that a single buyer model is not a panacea.

6. As regards FITs directly, both premium FITs and contracts for difference pose risks insofar as they may incentivise oversupply of energy infrastructure which might increase pressure to site energy generation infrastructure in inappropriate locations. To a certain extent, this risk could be mitigated by incorporating sustainability criteria into the subsidy levels for different technologies – an option which could be used to bring some of the

advantages of the RAB model, such as the ability to incorporate wider sustainability criteria into funding for low carbon infrastructure and to deliver greater certainty about the total amount of infrastructure required, into this form of subsidy.

7. CPRE's preferred means of incorporating sustainability into the subsidy regime would be to set FIT levels according to broad locational criteria. In such a regime, low carbon technology proposed in areas that are likely to pose higher risk to natural beauty and the wider environment would receive lower subsidy than low carbon options which are proposed in areas that pose lower risks to the environment. An example of such a FIT structure can be seen in the German Renewable Energy Sources Act (Erneuerbare Energien Gesetz – EEG) for solar power. Briefly, this makes the FIT reward higher for roof-mounted solar which produces energy that is consumed on the premises, slightly lower for roof-mounted solar which isn't consumed on the premises, lower still for stand-alone panels sited on brownfield land, and lowest for stand-alone panels sited within 110 metres from a motorway or railway. Such a model could align market incentives with the sustainable development aims embedded in the planning system. Although planning would need to remain the primary tool for spatial policy, aligning the two systems could significantly reduce the costs of deployment of renewables by reducing planning related risks.

Q10. How important do you think greater liquidity in the wholesale market is to the effective operation of the FIT with CfD model? What reference price or index should be used?

8. Another risk which the EMR's assessment ignores is so-called 'off-take' risk – that is, the risk that small market players without power purchasing agreements with large, vertically integrated suppliers may not be able to access the market or to acquire financing because of the risk that they may not be able to access the market. This concern applies equally to generators as to demand management technologies, which have not to date achieved significant market access despite their favourable cost and lack of environmental impact. This is partly an ideological issue, in that demand management has not been seen as being as firm or reliable as new generation¹, and partly a failure of the market to price in the multiple benefits which arise from demand response, demand reduction and distributed generation (D3). According to analysis by National Grid seen by CPRE, there is at least 9.5GW of demand response which could be accessed at low cost if smart metering and a suitable market framework is available by 2020. This is a very substantial resource which, if exploited, could reduce the need for a substantial amount of flexible unabated gas plant.

9. A more liquid market would help to address the problem of off-take risk, but active support (eg. through access to FITs) for newer D3 technologies should be incorporated into the EMR to put them on a level footing with newer generation technologies. Evidence from the United States suggests that targeted support for efficiency measures saves seven times more carbon per dollar compared with raising the carbon price. A similar analysis of the UK market indicates that support for efficiency measures could be nine times less expensive.² For well established technologies, EMR should ensure that the carbon, energy and system-services benefits are priced into the market so that D3 technologies can compete fairly.

¹ Evidence from the United States shows that D3 delivers very significant cost savings and reduces the need for intrusive energy infrastructure (for details, see *The Role of Forward Capacity Markets in Increasing Demand-Side and Other Low-Carbon Resources: Experience and Prospects*, available from <http://www.roadmap2050.eu/attachments/files/PolicyBriefMay2010RM2050%5B4%5D.pdf>)

² This is because electricity demand has historically been relatively inelastic and market barriers prevent private sector investment in energy efficiency measures. See http://www.raponline.org/docs/RAP_Gottstein_EvaluatingEMR_CostPerTonneQuestion_2011_02_18.pdf for more detail. For further analysis of cost savings from demand response, see <http://www.illexenergy.com/pages/Documents/Other/DemandResponseFacilitatingIntergationofRenewables.pdf>

Emissions Performance Standards

Q12. Do you agree with the Government's assessment of the impact of an emission performance standard on the decarbonisation of the electricity sector and on security of supply risk?

Q13. Which option do you consider most appropriate for the level of the EPS? What considerations should the Government take into account in designing derogations for projects forming part of the UK or EU demonstration programme?

Q14. Do you agree that the EPS should be aimed at new plant, and 'grandfathered' at the point of consent? How should the Government determine the economic life of a power station for the purposes of grandfathering?

Q15. Do you agree that the EPS should be extended to cover existing plant in the event they undergo significant life extensions or upgrades? How could the Government implement such an approach in practice?

10. CPRE believes that coal without CCS is incompatible with the carbon budgets set out by the Committee on Climate Change (CCC) and therefore that a strong EPS is required as a regulatory backstop to ensure that there is no investment in unabated coal. There is a role for some gas fired generation for security of supply reasons, but only if it is clear that gas-fired plant (unless it is run very rarely to cope with peak load) will need to apply CCS or shut in time to meet our carbon budgets.

11. We therefore support an EPS which is initially set at the level of a modern gas plant, with a regularly reducing trajectory to ensure that emissions from fossil power stations are constrained to the emissions limit set by the CCC. It is important that an EPS is set in such a way that it provides certainty that the UK is serious about achieving its carbon budgets – doing so through legislation will reduce policy risk by providing an instrument that is more dependable than a simple policy commitment. A strong, effective EPS will enable the market to deliver emissions reductions more dependably than a market which is dependent on price signals alone.

12. Within the framework of an EPS, we believe that a certain amount of flexibility – by setting the EPS as an annual limit, for example – is justified. But we are concerned that grandfathering without making plant subject to reducing EPS requirements, or by excepting existing plant which undergoes life extensions or upgrades risks giving the impression to investors that carbon budgets could be revised upwards if the market fails to deliver sufficient low carbon generation and demand reduction.

Q18. Do you agree the principle of exceptions to the EPS in the event of long-term or short-term energy shortfalls?

13. Implying that a long-term emergency might be declared which would enable otherwise unnecessarily polluting plants to operate presents a significant risk to the achievement of the UK's carbon targets, and to limiting the impacts of climate change on the English countryside. Such a provision creates moral hazard for energy companies and politicians alike by implying that failure to fit sufficient CCS equipment, incentivise energy reduction and demand shifting, and construct suitable low-carbon plant will be acceptable as the energy 'emergency' which could arise from this situation would justify breaching EPS limits. We therefore do not support the emergency exception proposals until further details are provided about the exact circumstances, both short and long term, in which they might be invoked.

Options for Market Efficiency and Security of Supply

Q20. Do you agree with the Government's preferred policy of introducing a capacity mechanism in addition to the improvements to the current market?

Q23. What do you think the impact of introducing a capacity mechanism would be on

incentives to invest in demand-side response, storage, interconnection and energy efficiency? Will the preferred package of options allow these technologies to play more of a role?

14. CPRE supports the introduction of a capacity mechanism on the condition that it is used to increase substantially the use of D3 to manage electricity system imbalances, rather than being used as a means to simply incentivise greater investment in generation infrastructure or deliver undue rents to existing generators.

15. Current proposals miss out a crucial option for balancing supply and demand: reducing or shifting demand. Historically high levels of back up plant, market structure, and other non-market barriers as outlined above currently suppress the use of D3. We are pleased that the consultation document notes the value of demand response, demand reduction and load shifting as a balancing mechanism (D3). However, it is not clear that these techniques were a part of the modelling which informed the options presented for the capacity mechanism. Any capacity mechanism will need to give equal treatment to demand-side options compared with generation options.

16. In addition, we believe that the capacity mechanism will need to deliver two distinct outcomes: flexibility to assist with short term balancing issues and the availability of sufficient plant to meet peak load over a longer period. At present, the Government's proposals for a capacity mechanism appear to focus on the former. The EMR process must deliver a market mechanism which incentivises long term demand reduction. Simply relying on the Green Deal to deliver energy efficiency and reduction misses out on the opportunity of aligning energy company incentives. The market reforms as proposed under the EMR will mean energy companies are both incentivised to sell more energy, as at present, and to install energy saving measures via the Green Deal which reduce energy demand. The structure of the market proposed in the EMR sets these aims in direct conflict. Furthermore, simply relying on the Green Deal risks missing out sectors of the economy which would not fall under Green Deal provisions. Government should consider a much wider revision of the energy market which would progressively increase the cost of energy as consumption increases – potentially drawing on the two-tier subsidy model for biomass heat described in the Renewable Heat Incentive. Such a revision would provide market incentives to reduce energy consumption, which would reduce the overall cost of decarbonisation.

No regrets options for decarbonisation

17. It is clear that investment in energy infrastructure will need to rise substantially between now and 2030, and cost is clearly a significant driver of policy in this area. Notwithstanding the desire of Government to harness markets to drive efficiency, CPRE believes that Government has a role in strongly encouraging 'no regrets' investment early.

18. Two areas which merit this early encouragement are energy efficiency and demand reduction measures, as outlined above, and a strategically planned, coordinated offshore electricity transmission grid. There is ample evidence from DECC's own 2050 pathways analysis, economic modelling by Pöyry³, WWF⁴, the European Climate Foundation⁵, among others, that interconnection will be a relatively cheap, effective way to incorporate high levels

³ *ibid*,

<http://www.illexenergy.com/pages/Documents/Other/DemandResponseFacilitatingIntegrationofRenewables.pdf>

⁴ See *The Energy Report: 100% Renewable Energy by 2050* and the ensuing UK recommendations (available from http://assets.wwf.org.uk/downloads/2011_02_02_the_energy_report_full.pdf and http://assets.wwf.org.uk/downloads/uk_recommendations_on_the_energy_report_030211_bstyr.pdf)

⁵ See *Roadmap 2050* (available from <http://www.roadmap2050.eu>) and in particular the briefing on power networks (available from <http://www.roadmap2050.eu/attachments/files/PowerNetworks.pdf>)

of (especially offshore) renewables if markets are designed well. Indeed, it seems likely that a significant degree of interconnection will be required regardless of eventual technology choice for low carbon generation.

19. There are very substantial risks to the piecemeal delivery of such infrastructure, insofar as an uncoordinated approach is very likely to be: dramatically more damaging to the beauty and tranquillity of the countryside and the wider natural environment; face substantial (costly) opposition through the planning process; require a larger amount of infrastructure overall; and be less flexible than an integrated solution. In view of these risks, and of the likely requirement of a significant degree of interconnection, CPRE believes that Government should adopt a much more prescriptive approach to the design and purpose of the offshore grid while encouraging market competition on efficient delivery of this infrastructure. Doing so would accelerate transition to a low-carbon power sector while limiting negative impacts on the natural environment.

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