



Greenpeace submission on Electricity Market Reform Consultation

March 2011

We will make overview comments and then answer some of the specific questions in the consultation¹.

Objectives

We note that there appears to be a lack of coordinating mind in UK energy policy. There appears to be more than the usual (and unhelpful) inter-departmental squabbling on this matter, indeed there seems to be total lack of an overarching plan. The overall shape of the electricity sector as part of an energy strategy, requires (at least) multi-agency/departmental consensus, if not agreement. There is a need for other parts of the Government machine to be pulling in the same direction but there is no guarantee that they will. Put simply in the case of EMR, Ofgem (liquidity review, market arrangement, onshore grid upgrades, supergrid), DCLG (planning of new infrastructure), BIS (effective business models, support for new entrants), Treasury (support for levys, Green Investment Bank, opportunities for growth and other policy approval), MoD (infrastructure and wind consenting) as well as DECC need to line up behind actual delivery of sustainable future power system.

Interdepartmental difficulties may be one of the issues that underlie the lack of clear objectives for EMR. Greenpeace believes that Government objectives should be to:

1. Play a leading role in the development of a sustainable and renewably-powered EU – set the direction of policy travel even if the final detail remains unclear at this stage
2. Provide support, markets and leadership for UK green energy development, as outlined by the Prime Minister on 6 January². Opportunities for industrial advantage in rebalancing UK economy needs to be part of the objectives of EMR.
3. Decarbonise the UK electricity grid
4. Commit to an ambitious target for renewable power in 2030
5. Reduce electricity demand for existing uses

Further, we believe that the best framework for this would be set by Government agreeing to the Climate Change Committee's 4th budget recommendations.

Industry and finance

We agree with the Prime Minister when he recently said:

¹ <http://www.decc.gov.uk/en/content/cms/consultations/emr/emr.aspx>

² <http://www.number10.gov.uk/news/speeches-and-transcripts/2011/01/prime-ministers-speech-on-economic-growth-58486>

"We're about actively getting behind business. What does that mean? It means being clear about which are the high-growth industries and working strategically to strengthen them.....The global green energy market – everything from wind turbines to home insulation to solar panels – is going to be worth trillions of pounds in the years to come. I'm determined that the UK should have a big piece of that pie... supporting wave and tidal technology."³

The lesson from many globally-strong renewable energy companies is that a supportive home market is essential to stimulate early stage growth and foster world-beating industries⁴. It is therefore concerning that EMR does appear to be operating in antagonism to a strong renewable industry post-2020. In particular the underlying analysis for the consultation by Redpoint shows renewable energy growth slows sharply post-2020, growing approx 21% in the decade 2010-2020, but only 6% in the decade 2020-2030 (see box p.39 of consultation document). This is seemingly an input assumption by DECC. If enacted, either this would mean that the vast investment by Government and industry into offshore wind installation capacity remains little used post-2020 (with huge stranded assets), or that the Prime Minister's statements with his hopes for wave and tidal are little more than pipe dreams. Probably both.

Related to this need for industrial development is the huge financing challenge for the construction of low carbon generation. We agree with Government that this requires new entrants with new money into the energy space. However without the reforms of the market trading arrangement these aspirations are extremely unlikely to become a reality. At present, it is widely acknowledged that there is little liquidity in the wholesale arrangements meaning that no new entrants have any certainty about market access – under these circumstances no investment will take place. The domination of the market at generation and retail ends by the 'big 6' - which have largely the same business model - means there is very little genuine innovation or choice. We would hope that a subsidiary objective for EMR, aside from those of bringing new entrants and new investment, would be bringing innovation to the power system. In particular on the retail side, opportunities for doing so have been laid out by the 'D3 expert group' submission, and we have attached that submission for reference.

Implicit Vision underpinning EMR consultation

There appears to be an implicit view underlying a future power system in UK characterized by:

- emphasis on supply-side rather than demand-side solutions
- adherence to market solutions beyond when they can be reconciled with public policy objectives
- limitations on renewable energy of about 1/3 total supply with a mixture of nuclear and CCS supplying the rest
- that aside from support needed to fulfill the 2020 renewable energy target, all technologies should be on a 'level playing field'

These are all contestable assumptions. In particular policy and institutional innovation is required in creating opportunities for low cost demand side reductions in energy use (see submission by 'D3 expert group'). Further, it is evident from a series of studies e.g. roadmap 2050 by McKinsey, Imperial college and KEMA⁵, that a fully renewable energy system is deliverable at reasonable cost, avoiding long-term liabilities of both nuclear waste and carbon dioxide storage. At this point in time many of the renewable sources of power are developing technologies with the potential for considerable cost reduction, with no long-term liabilities and risks, making them intrinsically more sustainable.

³ Ref 2 ibid

⁴ See for example Prospects for creating jobs in offshore wind in UK, ippr, 2009.

<http://www.ippr.org.uk/publicationsandreports/publication.asp?id=658>

⁵ <http://www.roadmap2050.eu/>

Reform of the electricity sector needs to be based on key principles which lead to sustainable and environmentally safe energy production. The ambition for the UK power system should start by emphasizing reduced demand. On the supply side the focus should be bringing on renewables and decentralized energy linked across Europe by a supergrid, excluding new nuclear and new coal. This view is supported by roadmap 2050 assessment referred to above.

In relation to the proposed policy measures in the EMR package (CfD, CPS, EPS, capacity mechanism) we comment on their impact in each of the technical areas as follows:

Demand side and decentralized

We refer to the 'D3 expert group' submission attached, which outlines the policy and innovation requirements, as well as institutional reforms needed for changes to the electricity and energy market. Owing to short notice, Greenpeace has not yet signed up to the full submission, but we concur with the overall direction of travel, and most if not all of the recommendations would be supported by Greenpeace. On a number of the Consultation questions we would, of course, have other points to add. The key points are that incorporation of effective demand side initiatives (often cheaper than supply side) would require new institutional arrangements and modifications to both CfD policy and capacity mechanism to accommodate the flexibility and demand destruction that D3 could provide.

Renewables

Greenpeace believes a more ambitious approach to renewable energy is required, including

- a further more ambitious target for renewable energy for 2030
- concerted approach to offshore wind, addressing the barriers to development including
- priority access and simplified connection arrangements for all offshore renewables
- All biomaterials in waste to be used in either anaerobic digestion or gasification given likely UK continued dependence on gas (and by extension a halt to further inefficient waste incineration plant)

Greenpeace believes that a fixed FiT is better for developing renewable energy generation than CfD. Concerns about CfD amongst wind developers (for example) highlighted to Greenpeace include liquidity risk (can they benefit when the spot price is highly illiquid? – different from the access to the market risk referred to above), offtake risk in the absence of an obligation, and risks around the base price as wind penetration rises. Provided a volume obligation for renewables is built into the system we believe that a fixed FiT provides a far better approach. **It is wrong to suppose that the same policy instrument would be effective for all different form of generation** given their different levels of development. Although CfD may work for nuclear, that is no good reason to try to shoehorn the diverse technologies in the renewable sector into the same policy, presumably in pursuit of simplicity. It may be simple, but ineffective.

We do agree that long-term contracts for renewable energy are important to accommodate uncertainty in future arrangements in markets and infrastructure. It is unlikely that further market changes will be unnecessary given the development of North Sea grid and integration with EU market. Given the issues around cost uncertainty we would caution against auctioning for such contracts at this stage.

We support the use of a **targeted** capacity mechanism, to be applied flexibly to include interconnection, demand-side response and electricity storage over a variety of timescales to maximize renewable penetration.

We have indicated above that we feel the Redpoint analysis entirely inappropriately limits renewable energy growth in the post-2020 period and worryingly implies a lack of belief or ambition for renewable energy.

Nuclear

Greenpeace is opposed to the continued use of nuclear plants and the construction of any new nuclear power station either in UK or overseas.

We have already raised with Treasury in our CPS response that as currently constituted it provides a subsidy for existing nuclear power stations, up to £3.43billion under scenario 3 in their CPS consultation⁶. Notably we have made these calculations, based on figures supplied by Redpoint, freely available to anyone who asks yet they have not been challenged. Indeed our discussions with Treasury suggest it is well aware that existing nuclear stations will experience a significant windfall.

We are also concerned about the subsidy to nuclear essentially contained in the Contract for Difference approach. As outlined above, we see no 'in principle' reason why a diverse set of technologies in the renewable sector should be pushed into the same policy box as one that appears to be best suited to nuclear, most especially given it has already had 60 years or so to demonstrate its independence and economic viability.

Even in its own terms, we believe that CfD may inevitably lead to subsidy to nuclear. Greenpeace has commissioned Prof Steve Thomas from University of Greenwich to look at the effective subsidy provided by CfD on nuclear power. This analysis has been attached to our submission. In particular we note here the conclusion that:

“some construction and reliability risks that should normally sit with the builder and operator would need to be transferred to the consumer or taxpayer in order to make new plant financeable”

This raises the question of State Aid. We note that the EMR consultation stated on p121:

“Legal and regulatory factors

24. The options proposed will be taken forward in accordance with the Government's obligations under EU law, including the terms of any necessary state aid approvals.”

No explanation is given as to how exactly the Government will take forward its proposals for EU state aid approval (if such is forthcoming). It does not say how it will then demonstrate its measures do comply with EU State Aid Law. Greenpeace assumes that the Commission is the sole arbiter on this issue and that any mechanism that allows for a subsidy is plainly unlawful. In this context we highlight the issue that CfD could subsidise new nuclear power plants and that State Aid must therefore be considered with specific reference to nuclear reactor proposals.

The analysis demonstrates that of three aspirations:

- building new nuclear power stations
- market-led energy policy
- no subsidy to nuclear

Only 2 of these 3 can simultaneously be true

The consultation on Electricity Market Reform is complex.⁷ It also comes with long and complex papers on impact assessment and analysis of policy options⁸

⁶ See Nucleonics Week, Volume 52 / Number 7 / February 17, 2011

⁷ Businesses express concern over electricity market reform
http://www.lowcarboneconomy.com/community_content/_low_carbon_blog/13400/businesses_express_concerns_over_electricity_market_reform

⁸ <http://www.decc.gov.uk/assets/decc/Consultations/emr/1042-ia-electricity-market-reform.pdf>
<http://www.decc.gov.uk/assets/decc/Consultations/emr/1043-emr-analysis-policy-options.pdf>

Not only is the EMR consultation complex, but comes within a mix of other complex but potentially interrelated consultations such as that on the six energy National Policy Statements (which closed in January) and others which relate specifically to potential major electricity providers such as nuclear power (the two consultations on Funded Decommissioning Programmes and Waste Transfer Price for waste and spent fuel management and disposal costs ended on 8th March, two days before the EMR consultation deadline).

As Greenpeace has noted in responses to other consultations, the scale and breadth of electricity related consultations at this point makes it impossible for the informed consultee properly and fully to respond.

Each of the other consultations, and the matters they consider, could have an impact on the EMR objectives and could have a direct or indirect impact on the result to be achieved.

Coal

We continue to believe that a strong EPS is a necessary part of the decarbonisation package. As well as incentivizing investment in sustainable low-carbon generation it is important to prevent investment in high-carbon. We should not make the same strategic failure as UK governments did in 1990s by failing to back the coal-to-gas switch with a policy mechanism to prevent a reversal of that switch when prices shifted back. Shifts in prices prompted a renewed interest in coal in the late 2000s. A similar price move could once again make unabated coal economically attractive, even with a carbon price, unless a regulatory mechanism is put in place to prevent this and the associated carbon lock-in.

A strong plant-based emissions performance standard, without grandfathering and with a gradually decreasing level of permitted carbon intensity would be the best way of achieving this. As one of the stated policies of Government is to generate a CCS industry in UK, such a policy would be able to drive investment decisions away from **unabated** fossil fuel plants and signal a long-term sales volume opportunity signal to the CCS supply chain.

By “strong EPS”, we mean a plant-based EPS set at 300gCO₂/KWh from now on for all new coal and gas plants, reducing to 100gCO₂/KWh from 2025 onwards for all existing plants on the system, not the “strong EPS” modelled in the underlying analysis for the Redpoint report (275gCO₂/KWh for all existing plant from 2018), which we consider to be unrealistic. The Redpoint report models a version of the EPS which tougher than any that the environmental NGOs have advocated, and it is then dismissed in policy formulation because it is so ambitious that it could have adverse consequences. Without further modeling on a far more realistic basis this aspect of Redpoint report should be ignored.

Summary

Our position on EMR consultation is that:

- Policy objectives, including specific 2030 targets for renewable energy and grid decarbonisation, need greater specification
- There needs to be greater central coordination of departments and agencies – especially as some of the policy mechanisms may require new bodies to be set up
- The opportunities on demand-side are insufficiently explored and so look likely to not be exploited either through capacity mechanism or contracts
- On the policy measures specifically:
 - It is inappropriate to use a single mechanism for all supply-side technologies; what works best may vary
 - For renewable energy, fixed FiTs are better than CfD, although long-term contracts are important

- We have outlined state aid issues on nuclear (see above)
- We support a targeted capacity mechanism for system provided a wider set of options including interconnection are included
- We oppose a carbon floor price unless mechanisms to control energy bill rises are in place, greater efficacy of carbon savings are evident and there is no windfall profits for existing nuclear power stations
- An EPS needs to be stronger than either of the consultation proposals, and the underlying Redpoint analysis dealing with EPS is flawed.

We hope this conveys our view adequately. Some specific question responses are given below.

1. 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?

We agree that substantial new investment from companies who are currently not major players in UK power market will need to be found to deliver decarbonisation objectives.

2. Do you agree with the Government's assessment of the future risks to the UK's security of electricity supplies?

the report prepared by Poyry Energy Consultants for WWF and Greenpeace ("Implications of the UK meeting its 2020 Renewable Energy target" – July 2008)⁹ made clear that if the UK government met its energy efficiency and renewable energy targets for 2020, new baseload electricity generation capacity will not be needed until the period beyond 2020, by which time other low carbon technologies (such as wave, tidal and floating offshore wind) will be close to commercialisation. Since then further gas plant has been consented and we have gone through a recession cutting power use, strengthening the conclusions that existing targets should deliver security of supply if properly delivered.

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

See above under 'Renewables' re weaknesses of FiTs with CfD, and why we believe fixed FiT is better if coupled with market access provisions.

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

We do not believe it makes sense to use the same policy too for all technologies. At present the FiT with CfD (and indeed the entire EMR package) seems to be most suited to new nuclear plants

5. 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?

It is appropriate to transfer risks to Government in the case of developing technologies like many renewables. It is not in the case of a mature technology like nuclear. We have outlined above how the CfD model for nuclear raises issues of state aid (see above).

⁹ See WWF / Greenpeace "Closing the Energy Gap" Report (http://www.wwf.org.uk/filelibrary/pdf/energy_gap_summary.pdf) and "Implications of the UK meeting its 2020 Renewable Energy Target", Pöyry energy consultants, July 2008, http://www.illexenergy.com/pages/Documents/Reports/Renewables/July08_2020RenewablesTarget.pdf

7. Do you agree with the Government's assessment of the impact of the different models of FITs on the cost of capital for low-carbon generators?

There are potentially damaging impacts of CfD/FiTs for renewables. Also see above re nuclear and state aid.

8. What impact do you think the different models of FITs will have on the availability of finance for low-carbon electricity generation investments from both new investors and existing the investor base? What impact do you think the different models of FITs will have on different types of generators (e.g. vertically integrated utilities, existing independent gas, wind or biomass generators and new entrant generators)? How would the different models impact on contract negotiations/relationships with electricity suppliers?

See above under 'renewables' and 'industry and finance'

10. 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?

It is essential as one part of a shift that would allow new entrants in renewables to come into the market place and bring new money.

12. 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?

No – see above under coal for failure of underlying analysis.

13. Which option do you consider most appropriate for the level of the EPS?

Although the 450g/kWh is better than 600g/kWh neither is adequate to stimulate either CCS supply chain or guard against high carbon lock-in, and so the option outlined under 'coal' above is preferred i.e. 300g/kWh and tapering down to 100g/kWh in mid-2020s.

14. Do you agree that the EPS should be aimed at new plant, and 'grandfathered' at the point of consent?

Full grandfathering should no longer be the norm in the context of the risks of high carbon lock-in. Decisions taken relatively soon on new gas could mean that the targets as set out by the Climate Change Committee on the emissions levels in 2030 become essentially unattainable because of 'existing' plant with grandfathered rights on emissions.

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

Only in the event of a plant operating at very low load factor specifically kept online for peaking purposes. In this event there would need to be a limit on running hours.

19. Do you agree with our assessment of the pros and cons of introducing a capacity mechanism?

Yes but a targeted capacity mechanism needs to better integrate interconnection, storage and demand side elements rather than purely focus on generation capacity

22. Do you agree with Government's preference for the design of a capacity mechanism:

- **a central body holding the responsibility;**
- **volume based, not price based; and**
- **a targeted mechanism, rather than market-wide.**

Broadly yes, although price-based options would work better for some options like storage where the economic viability can only be derived from arbitrage between periods of high and low prices. The drive for simplicity should not exclude beneficial options.

23. 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?

Currently focus has been on supply plant. As outlined above (Roadmap 2050 work) interconnection in long term will be cheaper than back-up plant

26. Do you agree with the Government's preferred package of options (carbon price support, feed-in tariff (CfD or premium), emission performance standard, peak capacity tender)? Why?

For the reasons outlined above we would modify the FiT for renewables to a fixed one with contracts, abandon the CPS without substantial alteration, strengthen the EPS. We also believe there are state aid issues – see under 'nuclear' above.

31. Do you have views on the role that auctions or tenders can play in setting the price for a feed-in tariff, compared to administratively determined support levels?

We do not support auctioning given the poor record in delivery. We recognize that this creates the risk of rent-seeking, but feel most of the risk will in practice be on the side of failure to deploy given the urgency of creating new sustainable low carbon generation.

32. What changes do you think would be necessary to the institutional arrangements in the electricity sector to support these market reforms?

An appendix to the submission by the D3 expert group (attached) explores the issues on institutional reform effectively.

35. Do you agree with the principles underpinning the transition of the Renewables Obligation into the new arrangements? Are there other strategies which you think could be used to avoid delays to planned investments?

We agree with running schemes in parallel to reduce risk of the investment hiatus