EXECUTIVE SUMMARY

The emerging CCS industry is the single-most challenging and exciting aspect of today's global energy sector. CCS TLM welcomes this opportunity to respond to UK Department of Energy and Climate Change (DECC) Electricity Market Review consultation.

CCS TLM is a new entity incorporated in the UK whose sole focus is to support the development of CCS projects through the provision of real experience and capability. The management team of CCS TLM are amongst the most experienced and successful developers of CCS projects anywhere, having previously been responsible for a number of landmark projects globally.

The founders of CCS TLM have a rich history of project development of de-carbonised fuel for power generation and industry with carbon capture and storage (CCS). Since 2005, they were members of BP's Hydrogen Power business committed to developing projects in all the key geographies of the world where fossil-fuelled power generation is a necessity and cleaner, more sustainable energy forms are an increasing requirement, e.g. Peterhead (Scotland), California (USA), Kwinana (Australia) and Abu Dhabi (UAE) for BP and then Hydrogen Energy International Limited.

CCS TLM offers advisory services based on real project experiences and, we believe, is the only Consultancy that can credibly do this. Advisory services include; technical & engineering, commercial structuring & finance, value chain analysis & integration, storage site selection and development, EOR. Currently CCS TLM is collaborating with GdF Suez, the Australian Government and the Global CCS Institute (GCCSI) among others.

Experience has shown that a capability and experience gap exists between utilities, heavy industry and the oil & gas companies that make up the CCS value chain and that without the aid of a "hybrid developer" to bridge this gap, project failures cancellations will continue to occur. The role of CCS TLM is therefore to act as facilitator and project integrator between the parties ensuring more projects succeed through proper understanding of the technical and commercial aspects.

CCS TLM recognises and applauds the leadership that the UK Government has taken by announcing their intention to implement a programme of four commercial-scale CCS projects, demonstrating the full chain of CO2 capture, transport and storage and is encouraged that in 2010 the Government reiterated this intention in the Coalition Agreement. As a new entity incorporated in the UK, we look forward to working with the Department in the future.

This submission contains our response to the Electricity Market Review and is predicated by our wish to see an early framework for the deployment of CCS beyond the Demonstration projects in time to meet the targets for CCS which are part of the UK and international targets on climate change. In general CCS TLM welcomes and supports the reforms to the UK electricity market as outlined within this consultation.

RESPONSE

DECC Consultation on Electricity Market Reform

March 2011

INTRODUCTION

In this submission, CCS TLM seeks to share some key findings and knowledge from our experience as CCS project developers; and as an outcome CCS TLM hopes that the DECC will consider CCS TLM's position on the Government's complete proposals for EMR which will provide a context for the answers to the consultation questions. Our high-level views are thus:

Feed in Tariffs (FiTs) for low-carbon power: Low carbon-power is a higher value-added product than power generated with associated emissions and should command a premium price. In the longer term, almost all power will be expected to be generated as low-carbon in accordance with the recommendations of the Government's Climate Change Committee and the power market can be expected to be a low-carbon level playing field. In the meantime there will need to be supportive instruments to stimulate low-carbon technologies until they reach maturity. CCS TLM supports the DECC proposal to introduce FiTs and regards this as a primary mechanism by which to stimulate low carbon investment, including CCS. The FiT needs to be designed carefully to maintain a premium to cover the extra costs of CCS versus unabated generation. We are very concerned that the CfD FiT exposes CCS fossil fuelled operators to long term fuel market risk and could be un-bankable.

Capacity Payments: Increasing penetration of inflexible as well as intermittent sources of low-carbon power in the generation mix will put an increasing emphasis on the need for flexible, low-carbon investment; a role that has traditionally been provided by fossil fuel generators operating at modest load factors. New plant with CCS would be unable to recover the capital investment through the wholesale market or the additional FITs so that the business model for investors needs to be supplemented by a mechanism that rewards flexibility. Capacity payments, providing they are strictly related to flexibility, are a potential means of balancing the investment model and ensuring continuity of supply for consumers. Further consideration should be given to the relative economics of different generation mixes in the whole system.

While supporting carefully administered capacity payments for CCS plant, CCS TLM are mindful of the potential negative impacts of capacity payments. CCS TLM are mindful of the impact that capacity payments to UK generators pre-NETA had on the UK electricity market fundamentals. In 2001-02 the market price of electricity fell dramatically as the market was over-supplied with generation plant. This caused several IPPs (Independent power Producers) to enter into administration and larger power utilities to face financial difficulties, e.g. British Energy.

Carbon Floor Price: As a mechanism to stimulate investment in low carbon technology the EU ETS has, unfortunately, not been successful and there is no guarantee that, in the future, it will fulfil that function. Market uncertainty has led to discounting of expected future allowance prices in business plans. A mechanism that brings certainty to the carbon price is

therefore welcome in order to create efficiency in business planning leading to benefits in consumer pricing. However, it must be understood that this measure will only indirectly stimulate low-carbon investment, by inhibiting high-carbon investment reflected in the wholesale electricity price. CCS TLM would also like to express the opinion that any substantial variation from the EU ETS market would likely be unsustainable and would re-introduce uncertainty into the business model. As a consequence, CCS TLM therefore regards the Carbon Floor Price mechanism as a welcome addition to the main low-carbon incentives in the EMR package of Feed-in Tariffs and Capacity Mechanism.

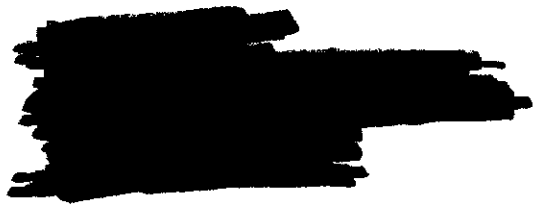
Emissions Performance Standards: An EPS of either 600 or 450 g/kWh provides a signal to investors that CCS will be needed on coal–fired plant but not on gas. Grandfathering gives reassurance against future policy change. But, new plant coming onto the system (coal or gas) will need to be retrofitted with CCS in its lifetime if emissions targets are to be met. Investors will need to be sufficiently rewarded by the FiT and Capacity Mechanisms, otherwise we will get locked into non abated gas and partially abated coal.

The EMR package as a whole will be good for mature technologies operating on a business-as-usual basis. CCS is neither mature nor is it business-as-usual. Support additional to the EMR package will be needed:

1. for the four Demonstration projects
2. for Infrastructure costs for follow on projects

CCS TLM recommends that a special supplementary mechanism is applied to cover these costs with revenue raised from the CCS Levy or alternatively from the Carbon Floor Price.

For any enquiries related to this response, please contact:



SUBMISSION

CCS TLM's comments and views to the specific questions posed in the text of the consultation are as follows:

Current Market Arrangements

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?

   Yes. CCS TLM agrees that the current market mechanisms will not support the investment required in low-carbon technologies needed to meet environmental targets. Market adjustment is required.

   The changes must bring an adequate pricing premium to reward the higher added-value represented by low-carbon power, should promote the addition of flexible low-carbon power and support business planning for low-carbon power by setting a floor price for carbon emissions.

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

   We agree with the Government's conclusion:

   "The current market will not deliver on the Government's objectives for decarbonisation, security of supply or affordability for consumers."

Options for Decarbonisation

Feed-in-Tariffs (FiT)

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

   CCS TLM generally agrees with the Government's assessment although we are concerned that unintended consequences may have been overlooked especially with respect to CfD.

   Fossil fuels are unique as they are most susceptible to commodity fuel price swings. Rising wholesale prices under current proposals could reduce income to fossil fuel plant and prejudice investment against CCS. One aspect that applies both to the CfD and the fixed FiT is that generators will normally expect fuel price variation to be reflected in the wholesale price of electricity. If a generator builds a CCS plant supported by a CfD or fixed FiT then, despite the certainty created in the low-carbon power price, the business model is likely not to be bankable due to over-exposure to a rising fuel price risk. There are considerable risks of locking into a 20 year fixed-price contract for electricity supply given likely fuel price volatility. The same argument does not apply to other low-carbon sources so the package of measures taken together will favour inflexible nuclear and intermittent renewables over fossil-fuelled power with CCS. One solution to this would be to index-link the CfD strike-price to a fuel price index

appropriate to the fuel being used (e.g. coal, gas, biomass). If it were not deemed feasible to link the FiT to fuel price then CCS TLM recommends that a premium FiT is applied to this technology only and that a CfD FiT is only used for nuclear and renewables.

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

   We agree with this providing that there is a linkage to fuel price for fossil fuel and CCS as above, otherwise we would prefer the Premium FiT.

   More information is needed in terms of the details and practicalities of the proposals. The complexities of how the mechanism will work need to be elaborated upon further. We would propose a series of stakeholder workshops to share modelling structures, consult on the above challenges, etc.

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?

   This will certainly make the business model for low-carbon generation more efficient and more bankable. Risk of fuel price volatility is specific to CCS and the CfD model referred to in 3 above.

   CCS TLM have some reservations over the level of Government involvement in the market under CfD FiT. In the current proposals for CfD FiT, the central agency:

   - Will take pricing risk,
   - Will need to support a liquid market, and
   - Will require government selection of generation mix and setting of technology-specific tariffs.

6. What are the efficient operational decisions that the price signal incentivises? How important are these for the market to function properly? How would they be affected by the proposed policy?

   CCS TLM believe it essential that generators continue to be exposed to wholesale market pricing. This incentivises prudent investment decisions and rapid reaction to market demand changes.

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?

   We agree that stability of price, and therefore confidence in revenue generation, will contribute to lower cost of capital.

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 the existing investor base?

   See question 3 above. There is a considerable difference between fossil-fuelled generation with high exposure to the variable cost of fuel and the other forms of generation where cost of capital predominates.

   The mechanism should be clear and practical for all market actors – for new market entrants, existing generators and investors. Fixed or Premium FiT systems lend themselves to simplicity

and clarity. Primarily, investor decisions are likely to depend on the levels set in the FiT, degree of exposure to fuel price risk and project bankability; independent of the mechanism implemented.

9. 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?

   To achieve Government's goals, setting FiT levels will require government selection of generation mix and setting of technology-specific tariffs. This process must be seen to be objective and transparent to ensure confidence in the sustainability of process and FiT levels.

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?

    Liquidity in the wholesale market is essential. There is a danger of loss of liquidity by government intervention or as the market becomes more dominated by low-carbon sources. Wholesale markets will continue to be led by fossil-fuelled generators for the foreseeable future but in the event this is not the case then fossil generation with Premium FiT would again be exposed.

    Market liquidity is of critical importance to allow the market to function properly. This is of particular relevance to CfD FiT. The review of market liquidity being currently conducted by Ofgem is particularly relevant.

11. Should the FiT be paid on availability or output?

    FiTs should be paid on output, and availability should be covered by capacity payments.

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?

    If there is sufficient incentive to build low-carbon generation using CCS then there is no need for the imposition of an EPS.

    This EMR package is intended to be valid over at least 20 years. Whilst it is accepted that during that time there may need to be some adjustments there seems little point in the introduction of an element of policy that clearly has a much shorter lifetime. Introducing an EPS at these levels is inconsistent with the 2030 indicative national target of 100g/kWh

    Grandfathering of the EPS means that coal plant may be locked in at the 600 or 450 g/kWh level and that gas plant will be locked in with no CCS unless the appropriate financial incentives are in place to ensure retrofit.

    A grandfathered EPS implies that unabated gas can continue for the next 20 years. This will disincentivise CCS (and nuclear and renewables) and is inconsistent with the requirement for gas-fired power plant to be CCR. Current regulations are that new plant should demonstrate CCS and be retrofitted later when CCS is shown to be technically and economically viable. There needs to be alignment between EPS and incentives otherwise it will remain a disincentive to investment. To be equivalent to current policy there would need to be a pre-determined, transparent sliding scale for EPS on new plant.

EPS was considered for inclusion in the EU Industrial Emissions Directive and was rejected. There is a danger that introduction of EPS in the UK is out of phase with the rest of the EU.

An EPS will mean that no new coal plant can be built without a proportion of CCS (as currently required by Government). There are currently only plans to support 4 CCS demonstrations in the UK, out of which one is likely to be gas. This means that, for the foreseeable future, there will be a maximum of three new coal power plants built in the UK as there will be insufficient incentive to build any more. We will need to build more plant than this to replace ageing coal capacity, at least for later retrofit in order to maintain the total capacity and mix of generation.

There is a need to establish a qualifying standard for low-carbon generation which shall serve as the hurdle for entitlement to the low-carbon support mechanism.

13. 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?

We do not consider either option is particularly helpful for the reasons described above. Existing legislation requires all new coal fired power plant to be built with 300MW of CCS. What is more important is to establish a road-map for CCS in the UK consistent with the broad policy objectives, then to discuss how the whole package of measures can bring it about. OCCS is currently working on the road-map which is the starting point for the process.

CCS demonstration projects should receive full derogation reflecting their status as technology pathfinders.

14. 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?

We generally welcome the clarity that grandfathering at point of consent will provide, however we are concerned that it may lock in high emissions as noted above.

15. 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?

The incentives (FiT/capacity payment/carbon price) should be set at a level high enough to incentivise retrofit of CCS on both coal and gas fired plant.

There is uncertainty over what constitutes a significant upgrade and what plant upgrades will apply. It is unlikely that there will be any major plant upgrades other that SCR which we agree should not be counted. Re-planting on the same site would (and should) be regarded as new build as should any plant improvement for regulatory compliance.

16. Do you agree with the proposed review of the EPS, incorporated into the progress reports required under the Energy Act 2010?

We do agree that the Government should be required to report on progress in the development of CCS but we would not agree with any presumption that progress would be exclusively dependent on an increasingly lower EPS.

17. How should biomass be treated for the purposes of meeting the EPS? What additional considerations should the Government take into account?

CO_2 emissions from biomass should be zero-rated for emissions. Negative emissions will be possible for biomass with CCS and should be appropriately incentivised.

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

Yes for short-term energy shortfalls.

Options for Market Efficiency and Security of Supply

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

A capacity mechanism will be particularly important in the context of CCS. Fossil-fuelled power stations will continue to be expected to load-follow and operate at modest load factors and will also have the additional CCS cost burden to carry. Load-following plant should be adequately recompensed in the new market for its availability. For transparency, there should be some measure of how capacity payments are distributed between demand variation and intermittency of other forms of generation.

Capacity payments will help to meet the high capital cost of CCS projects. The infrastructure elements of transport and storage for CCS will need to be backed by secure contracts for capacity.

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

Yes, for the reasons mentioned above (Q.19).

21. What do you think the impacts of introducing a targeted capacity mechanism will be on prices in the wholesale electricity market?

Average wholesale market prices will be lower with a targeted capacity mechanism because there will no longer be a high premium for power at the margin of supply. If the capacity mechanism does not deliver it risks not incentivising sufficient secure and flexible capacity provision.

22. Do you agree with Government's preference for the design of a capacity mechanism:
    - a central body holding the responsibility;

      We agree with this

    - volume based, not price based;

      We agree that it should be volume based to guarantee the capacity margin.

    - a targeted mechanism, rather than market-wide.

      It is necessary to consider separately three types of capacity shortfall which need different solutions:

i) The capacity shortage that could occur at the early evening peak of demand (commonly known as the "super-peak" period"). Typically, shortages at this time would be for just a few hours, for a few GW maximum, but have significant balancing price implications on all participants.

Solutions would be more interconnection, more pumped storage, demand side reduction, open cycle gas turbines. Coal-fired generation would not be suitable for this due to the length of time it takes for coal units to warm up to generating conditions.

ii) The capacity shortage that could occur due to the difference in demand between day and night in winter lasting, each day for about eight hours and measured around 20 GW

Currently this capacity is provided by older less efficient coal power plant and gas CCGTs that are "two shifted", with consequentially modest load factors (30- 35%), which is acceptable commercially because the capital investments in the majority of these plant have been written off.

It is technically feasible for coal with CCS to provide flexible, low carbon capacity but there would need to be capacity payments to compensate for the resulting modest load factors.

iii) The capacity shortage that could occur at periods of low wind across the whole generation system, sometimes lasting several days and up to 25 GW if wind targets are met.

It is technically feasible for coal with CCS to provide flexible, low carbon capacity to back up gaps in wind generation but there would need to be capacity payments to compensate for the low load factors.

It should also be noted that effects (ii) and (iii) can occur concurrently. Further consideration should be given to the relative economics of different mixes in the whole system.

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?

CCS TLM have no specific views on this issue.

24. Which of the two models of targeted capacity mechanism would you prefer to see implemented:
    - Last-resort dispatch; or
    - Economic dispatch.

CCS TLM have no specific views on this question.

25. Do you think there should be a locational element to capacity pricing?

Yes, there could be a locational element to capacity pricing because intermittent wind generation is locationally biased and will need local correction for most efficient transmission. CCS plants will generally be built near the coast for ease of transportation of CO_2 and import of fuel. There will also be a relationship with the Government's regional development agenda where there will be clusters of power and industrial plants with CCS.

Analysis of Packages

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?

We believe that the feed-in tariff and targeted capacity payments are the main instruments of the package supported by carbon price support to provide an investment environment which de-risks the carbon price. We believe that EPS is not likely to offer an incentive and care will be needed to avoid it becoming a disincentive.

CCS TLM are concerned of evolving a complex system of reform and support mechanisms overlayed on an existing complex that has itself developed through multiple generations of evolution. This represents a significant challenge to new entrants and lack of clarity for consumers.

To prevent disincentivising new market entrants the package of options should be simple, clear and transparent for all participants (developers, generators, investors, consumers, advocates, etc.). Consideration should be given to the removal of some current market control mechanisms and how new mechanisms will be integrated with those currently in place.

27. What are your views on the alternative package that Government has described?

The Government has examined four options for different packages all of which include an EPS. No analysis has been provided on whether the objectives could have been achieved without an EPS.

28. Will the proposed package of options have wider impacts on the electricity system that have not been identified in this document, for example on electricity networks?

Great care must be given to the transition from current to future structure to prevent paralysis and/or impairment of investment decisions in the critical near-term implementation period. During this implementation period described in the consultation document, generators are faced with implementation of the IED, decommissioning of nuclear capacity, addition of significant wind capacity, start-up of demonstration CCS projects and demand growth due to economic recovery.

29. How do you see the different elements of the preferred package interacting? Are these interactions different for other packages?

One major issue for fossil-fuelled generators with CCS that receive availability payment is that their investment incentive to become low-carbon based on a FiT will require them to be generating as much as possible. The first CCS plants will be seeking to generate base-load but in the lifetime of these policy measures CCS plants will have to be running in at least mid-merit. There is not sufficient detail on proposals for capacity mechanism. We think there is a good deal more to be done to tailor the mechanism to reward flexibility.

CCS TLM considers a system of low-carbon incentives, in the form of an index-linked CfD FiT or a Premium FiT, as best able to deliver the greatest level of new investment. Certainty of carbon pricing in the long-term is a critical additional element in a combination of measures to incentivise investment in the implementation of low-carbon technologies.

Implementation Issues

30. What do you think are the main implementation risks for the Government's preferred package? Are these risks different for the other packages being considered?

    The most significant risk is that the reform package militates against fossil fuels, especially coal fired generation, with consequent impact on supply security.

    Indecision in the critical near-term technology development and FOAK implementation phases caused by near-term legislative uncertainty will delay investment and impair industry's ability to meet Government goals.

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?

    If there are auctions there will be winners and losers. It means project developers have to factor the risk of losing into their decisions on project development. Furthermore, the risk will be an unknown. There is also significant cost involved in participating in an auction. All this will be inhibitory to project developers and especially for new entrants.

    Auctions are complicated and difficult to manage and may not be appropriate for all technologies, such as CCS.

    CCS TLM do not believe that auctions promote market entry by new participants. The auction process requires significant up-front investment, skilled analysts and developers; skills likely to be in short supply among aspirant entrants.

    CCS project developers are unlikely to be in a position for auctions to be effective until 2017 at the earliest. Auctions may be appropriate further along the CCS lifecycle.

    At the moment, it is difficult to have sufficient certainty about CCS costs making participation in auctions difficult. Negotiation between Government and generators is preferred but is likely to raise concerns as to transparency and access for new entrants unless dealt with in a sensitive and transparent manner.

    Low-carbon technologies differ widely in capex, opex, ease/speed of implementation, infrastructure requirements, etc. Implementing a single auction process for competing technologies is likely to deliver unsatisfactory results for both bidders and market designers.

    - Can auctions or tenders deliver competitive market prices that appropriately reflect the risks and uncertainties of new or emerging technologies?
    - Should auctions, tenders or the administrative approach to setting levels be technology neutral or technology specific?
    - How should the different costs of each technology be reflected? Should there be a single contract for difference on the electricity price for all low-carbon and a series of technology different premiums on top?

      There seems to be no alternative but to make the levels technology specific otherwise one technology would tend to dominate. CCS TLM suggests that, not only should there

be different sized FiTs for different technologies but also different types of FiT in accordance with Q.3 above.

In the longer term, when the whole market is low-carbon, there may be a level playing field and a return to an open wholesale market in low-carbon power.

- Are there other models government should consider?

  CCS TLM have developed a business model specifically aimed at ensuring the execution of DECC's four CCS demonstration plant. It would be inappropriate to discuss this concept within this submission, but CCS TLM look forward to meeting with DECC representatives to discuss and present our proposals in the not too distant future.

- Should prices be set for individual projects or for technologies

  For CCS projects, since costs are likely to be very location specific, if the locational element is not covered in availability then prices should be set by project.

- Do you think there is sufficient competition amongst potential developers / sites to run effective auctions?

  In the early days of CCS there will not be sufficient competition and certainly not if location is included.

- Could an auction contribute to preventing the feed-in tariff policy from incentivising an unsustainable level of deployment of any one particular technology? Are there other ways to mitigate against this risk?

  More likely that it will favour one particular technology.

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

    CCS TLM would suggest that more clarity be developed on the role and responsibilities of the proposed central agency. There are concerns as to how the tariff will be determined and liquidity ensured.

33. Do you have view on how market distortion and any other unintended consequences of a FiT or a targeted capacity mechanism can be minimised?

    See response to Question 3.

    Regulatory uncertainty will significantly impair current CCS project development activities. The transition mechanism must be clearly defined, widely and clearly communicated, current arrangements must be grandfathered and the period of uncertainty minimised.

    We would propose a series of stakeholder workshops to review modelling structures, consult on the above implementation challenges, etc. This will promote market acceptance, reduce uncertainty and help identify unintended consequences.

34. Do you agree with the Government's assessment of the risks of delays to planned investments while the preferred package is implemented?

CCS TLM are concerned about serious risks of delay to the CCS demonstration programme given that work is under way now to put business cases together for the NER 300 and UK projects 2-4. There needs to be assurance that these projects get grandfathered in some way. Also, the projects may involve partial CCS initially with retrofit later. Developers will need to know in advance what the business case will be for the retrofit before embarking on the demonstration. There is a risk that the UK may lose out on NER 300 funding if demonstration project funding is not clarified sufficiently quickly.

The EMR package will be good for mature technologies operating on a business-as-usual basis. CCS is neither mature nor is it business-as-usual. Demonstration projects incur considerable first-of-a-kind costs which the EMR cannot be expected to cover. These FOAK costs break down into two parts; that is early-stage or emerging technology costs and infrastructure costs. There is good reason to split out these costs and provide separate support mechanisms. There is no rule that says that emerging technology costs will be driven out of the system after four demonstration projects. Also, the demonstration programme will not have provided a comprehensive geographic spread of infrastructure so that subsequent projects will face further infrastructure hurdles.

CCS TLM supports the CCS levy as the most appropriate means for funding CCS demonstration projects FOAK costs. CCS levy funding could be raised with immediate effect. At the time the CCS Levy was introduced the Government estimated that the Levy needed to raise £11bn to cover the costs of the current demonstration programme over the lifetime of the projects. So far, up to £1bn has been committed from general taxation towards the first project. It is likely to be very controversial if on-going amounts of this magnitude are sourced from general taxation. The CCS Levy is a way to raise money for the FOAK costs of CCS similar to mechanisms used for renewable energy.

In the event that the CCS Levy is not brought into operation then CCS TLM recommends the use of funds from the combination of EUA auction and the CCL Carbon Price Support mechanism which will provide a very stable and predictable revenue stream. As this money comes directly from fossil-fuelled generation it could be viewed as the fossil power business getting its house in order.

Evolution from demo projects to widespread CCS deployment needs to be a continuous process. FiTs and capacity payments will not necessarily lead to efficient infrastructure deployment and a structured approach is required to meet this challenge.

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?

CCS TLM have no specific comment.

36. We propose that accreditation under the RO would remain open until 31 March 2017. The Government's ambition to introduce the new feed-in tariff for low-carbon in 2013/14 (subject to Parliamentary time). Which of these options do you favour:
    - All new renewable electricity capacity accrediting before 1 April 2017 accredits under the RO;

- All new renewable electricity capacity accrediting after the introduction of the low-carbon support mechanism but before 1 April 2017 should have a choice between accrediting under the RO or the new mechanism.

CCS TLM have no specific views.

37. Some technologies are not currently grandfathered under the RO. If the Government chooses not to grandfather some or all of these technologies, should we:
    - Carry out scheduled banding reviews (either separately or as part of the tariff setting for the new scheme)? How frequently should these be carried out?
    - Carry out an "early review" if evidence is provided of significant change in costs or other criteria as in legislation?
    - Should we move them out of the "vintaged" RO and into the new scheme, removing the potential need for scheduled banding reviews under the RO?

    CCS TLM have no specific views.

38. Which option for calculating the Obligation post 2017 do you favour?
    - Continue using both target and headroom
    - Use Calculation B (Headroom) only from 2017
    - Fix the price of a ROC for existing and new generation

    CCS TLM have no specific views.