

## RESPONSE TO PROPOSALS FOR ELECTRICITY MARKET REFORM

### Executive summary

1. CE Electric UK (CE) is the electricity distribution business for the northeast of England, Yorkshire and northern Lincolnshire, operating through its subsidiaries, Northern Electric Distribution Limited (NEDL) and Yorkshire Electricity Distribution plc (YEDL). It welcomes the opportunity to respond to this important consultation.
2. Although CE does not have investment in electricity generation assets, it considers that it has a relevant contribution to make to this consultation on two grounds. CE has a clear interest as a significant participant in the electricity industry in helping to ensure that the electricity market provides adequate incentives for generation capacity, but since it has no investment in generation it can bring a knowledgeable but impartial perspective to solving this problem. Second, distribution companies have a particular role in developing the smart grid. As a result, how the market reforms affect demand response, and hence their impact on the distribution network, is of importance to us. CE is embarking on the country's largest smart grid project in partnership with British Gas, the Customer-Led Network Revolution (C-LNR) project, which will explore the scope for demand response in the context of wider use of low-carbon technologies.
3. We set out below our response to the consultation questions individually, but it may be helpful to summarise our views and proposals on this complex issue first as a whole. The problem the country faces is in two parts. First, there is a need to encourage investment in sufficient low carbon generation to replace existing capacity that is retiring and meet new demand whilst at the same time reducing substantially the carbon intensity of the generation fleet. Second, because solving the first part of the problem will result in new low carbon generation that is less flexible than the existing fleet, there is a need to encourage investment in flexible generating plant and response from customers to ensure that generation and supply remain in balance.
4. CE is in agreement with the general principles and the direction of the Government's thinking. Specifically, we support the proposal for a carbon support price and a feed in tariff (FIT) with a contract for differences (CfD) although, in implementation, there are some key challenges to overcome. Government needs to be bold in its

reforms and not hold back from reappraising and replacing the collection of incentives and mechanisms that exist today. If more mechanisms are simply layered on top, the reforms will have failed since the complexity will burden businesses and obscure the appropriate economic signals. Furthermore, longer-term implications and unintended consequences need to be addressed. The Government needs to stress test the proposals against sustained low gas prices so that any counterparty to a CfD considers the costs acceptable. Also, the Government needs to address the impact on high energy use industries in order to avoid an exodus of this sector from the UK to less restrictive jurisdictions as a consequence of a “low-carbon premium”.

5. Matching supply and demand is an important principle running through the proposals, and the Government should engage more fully with all parts of the electricity industry to ensure that both generation-side and demand-side flexibility are cost-effectively utilised. For generation, we advocate some form of availability payment for both base load and mid-merit plant in order to deal with daily and seasonal variations in electricity demand. For customer response, we are exploring the scope for this in CE’s Low Carbon Network Fund project, but policy and regulatory support is also needed to provide the framework (an example being the development of effective time of use tariffs).
6. We discuss and provide recommendations for the Government under the two headings identified in paragraph 3 above.

#### Encouraging investment in new low carbon generation capacity

7. CE agrees that greater certainty is needed to encourage new carbon generation capacity. This will need to involve greater certainty on the long term carbon price and protection against variation in the electricity price.

#### Carbon price support

8. Experience with the EU Emissions Trading Scheme (ETS) has shown that the carbon price that results from a “cap and trade” scheme can vary because of economic conditions, the weather and the closeness to the end of a phase of the scheme. Uncertainty about price can lead to delay in investment and an increase in the cost of capital. We have argued against extending “cap and trade” to smaller companies in our response to simplification of the Carbon Reduction Commitment energy efficiency scheme. The same

arguments apply to larger companies subject to carbon price variability from the ETS. Smoothing of the carbon price would help achieve this, but to be bankable some key features need to be determined:

- Reduce the number of instruments supporting the carbon price. Using the Climate Change Levy to support the carbon price in electricity rather than inventing a new instrument is sensible, but businesses would still face the Carbon Reduction Commitment with its different rules. A premium feed in tariff (FIT), if this were adopted, amounts to a further carbon tax. Simplification would reduce the regulatory burden on business and concentrate resources on improving energy efficiency to the benefit of society more generally.
- Bring in carbon price support only when it is needed to support new low carbon generation, i.e. from 2018. Starting in 2013 only provides a windfall to existing low carbon generation and an additional cost to customers.
- Ensure a durable mechanism. A carbon support tax whose level can in principle be changed annually in the Budget provides no comfort to investors. Confidence needs to be built by defining, and standing by, a long term trajectory for the price, preferably with cross-party support.
- Deal with the problem of “carbon leakage”. Internationally competitive high carbon intensive industry needs support to avoid the activity, and resulting carbon emissions, simply being driven to less restrictive economies.

#### Feed in Tariffs (FIT)

9. Carbon price support may help remove volatility of the carbon price, but will not stabilise the electricity price, which depends for much of the time on the wholesale gas price. The gas price is likely to be particularly difficult to predict over coming years because of the interaction of the developing LNG market, shale gas and increasing demand in developing countries. We therefore agree there is a need for stabilising the price for electricity from non-fossil generation. Contracts for differences are likely to be the best way to achieve this. However, the Government may not be the best choice of counter-party since its view at any one time may be affected by considerations of wider economic and fiscal policy. This could undermine the certainty required by investors.

10. There is an important caveat. Stabilising carbon and electricity prices may not in itself provide adequate security to

low-carbon investors. If electricity prices fall below the support price due to lower gas prices than predicted, the counterparty to the contract for differences could well sustain lengthy and costly losses. This may well cause problems. If the Government were to be the counterparty, it might well try to recover its losses through specific taxation. If another player were to be the counterparty, there is the risk of default or, because of the perceived risk, the difficulty of negotiating such contracts in the first instance.

11. There is a further problem that arises from the introduction of CfDs, if there is not some adjustment to take account of the varying demands for electricity throughout the day and year. In effect, the low carbon generation would be made “must run”. This however could well cause significant problems at summer night time when electricity demand falls to around 25 GW, since the target for renewables electricity alone for 2020 is already well in excess of this figure. The alternative is to provide some financial support to low-carbon generation for being available to run rather than being paid only when running. This requires the contracts for differences to include some mechanism for making availability or capacity payments. It is recognised that there is not complete agreement amongst industry participants about how such a mechanism should work. We support the CBI recommendation that a specific “task and finish” group be established with membership from across the electricity industry and its major customers to deliver a solution.

#### Ensuring generation and supply remain in balance

12. Assuming the financial incentives put in place are sufficient to attract new non-fossil plant, the other challenge is to encourage enough flexible plant and customer response to manage the increasingly complex balance between more inflexible generating plant and customer demand. Note that this is not simply an issue of peaking plant, as the consultation paper seems to suggest, but of providing flexibility to manage the supply/demand balance throughout the day and throughout the year. In fact, the balancing market only needs adjustment in relation to its pricing mechanism in order to make this more cost-reflective. National Grid do not see a problem with obtaining sufficient balancing services and generators currently have plans in place for construction of open cycle gas turbine plant. What is needed is the incentive for generators to sign contracts to match as far as possible daily and seasonal variability, i.e. mid-merit contracts. Nuclear plant will technically be able to provide some flexibility. But because of the incentives needed to encourage

nuclear and other low-carbon generation to operate, it could prove expensive to put in place arrangements that require such plant to switch off in the absence of some form of availability payments. Mid-merit plant will also therefore need contracts that have appropriate availability criteria, not just contracts for MWh. These proposals therefore should be developed alongside the base load proposals.

13. Customer response can also play an important role in this market, through the operation of a smart grid. It is a mistake for the consultation document to imply that customer response is only applicable in the peaking/ancillary services market, which would in any case need to be tightly controlled to avoid electricity users deliberately creating a local imbalance on a constrained network in order to be paid to switch off. The introduction of greater energy efficiency along with new low-carbon equipment such as electric vehicles, heat pumps, together with other domestic/ industrial load provides greater scope for a cost-effective customer response. As the price differential between on-peak and off-peak power increases as a result of the introduction of more capital intensive, low running cost non-fossil generation, the benefit will also increase. This response will be enabled by smart meters and time of use (TOU) tariffs.
14. CE's smart grids project, Customer-Led Network Revolution (C-LNR), will explore the scope for such a response. In parallel with this work, regulatory and institutional changes need to be explored. In particular, the framework for establishing TOU tariffs for domestic customers needs to be established. In CE's view, TOU tariffs should be:
  - ③ Voluntary. It is particularly necessary to take account of interests of the fuel poor.
  - ③ Standard time blocks. To ease understanding and simplify supplier switching, there should be standardised time periods for "red, amber, green" time blocks for TOU tariffs. This would enhance rather than restrict competition, through simplifying the offering to customers and improving the scope for interoperability of meters and other smart equipment.
  - ③ Prices should follow costs. Standard blocks would allow mid-merit costs (CfDs etc.) to be allocated to mid-merit units, and peak costs (ancillary services contracts etc.) to be allocated to peak units. Anecdotal evidence suggests that in the low voltage business market, where distribution charges are already on a TOU basis, some suppliers are not using a TOU basis in passing

these costs on, thus negating the incentive element of the distribution charge.

15. Customer response could also have a role to play in the balancing market, e.g. smart appliances with frequency response. But it is important to establish the cost-effectiveness of different sorts of interventions. C-LNR and other smart grid projects will be essential to explore what is feasible and cost effective.

## Consultation questions and answers

### 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?

We agree that changes are needed to the current electricity market arrangements to provide adequate incentives for low carbon and other generation.

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

Yes.

### Options for Decarbonisation

#### Feed-in Tariffs

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

In general, we support the Government's approach. More work is, however, needed to assess the interaction between the proposals and the daily and monthly variation in electricity demand and price. Specifically, we consider that some form of availability payment is needed, but that the details should be worked out in consultation with all parts of the electricity industry and major customers.

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

Subject to the points made in 3 above, we agree. Otherwise, the counterparty to the CfD could face substantial unforeseen costs if the price of gas is lower than forecast. At the worst, this could see the counterparty defaulting or not being prepared to sign a CfD in the first place.

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?

The current electricity market structure is unsuitable to support the construction of high capital cost, low running cost inflexible plant. It is important to get the balance of risks into a position where, on the one hand, investors are prepared to finance plant and, on the other, the interests of customers in maintaining security of supply and delivering a low carbon future are met.

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?

Price signals are relevant to decisions to construct plant and when and if to run it. A volatile MWh-only price signal will not encourage new non-fossil capacity to be built or operated. The market signals need to be appropriate to the nature of plant to be constructed and run.

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?

Little of the underlying reasoning for the Government's conclusions in this area is made clear and so it is difficult to answer this question. Unless the issues raised in answers 3 to 6 above are addressed, it is difficult to see any capacity being built.

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 the answer to question 7.

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?

This is a question that generators have a greater interest in and are more qualified to answer.

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?

This is a question that generators have a greater interest in and are more qualified to answer.

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

For the reasons given in answer to questions 3 to 6 above, we consider there should be an availability element to FIT. The details need to be worked out with the electricity industry and customers.

## Emissions Performance Standards

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?

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?

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?

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?

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



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

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

Emissions performance standards are essentially an issue for generators, who are more qualified to answer.

#### 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?

Assuming the financial incentives put in place are sufficient to attract new non-fossil plant, the challenge is to encourage enough flexible plant and customer response to manage the increasingly complex balance between more inflexible generating plant and customer demand. This is not simply an issue of peaking plant, as the consultation paper seems to suggest, but of providing flexibility to manage the supply/demand balance throughout the day and throughout the year. In fact, the balancing market only needs adjustment in relation to its pricing mechanism in order to make this more cost-reflective. National Grid do not see a problem with obtaining sufficient balancing services and there are plans in place by generators for construction of open cycle gas turbine plant. What is needed is the incentive for generators to sign contracts to match as far as possible daily and seasonal variability, i.e. mid-merit contracts. Nuclear plant will technically be able to provide some flexibility. But because of the incentives needed to encourage nuclear and other low carbon generation to operate, it could prove expensive to put in place arrangements that require such plant to switch off in the absence of some form of availability payments. Mid-merit plant will also therefore need contracts that have appropriate availability criteria, not just contracts for MWh. These proposals therefore should be developed alongside the base load proposals.

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

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

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.

See the answer to question 19.

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?

Customer response can also play an important role in the market, through the operation of a smart grid. Customer response is not only applicable in the peaking/ancillary services market, which would in any case need to be tightly controlled to avoid electricity users deliberately creating a local imbalance in

order to be paid to switch off. The introduction of greater energy efficiency along with new low-carbon equipment such as electric vehicles, heat pumps, together with other domestic /industrial load provides greater scope for a cost-effective customer response. As the price differential between on peak and off peak power increases as a result of the introduction of more capital intensive, low running cost non-fossil generation, the benefit will also increase. This response will be enabled by smart meters and time of use (TOU) tariffs.

24. Which of the two models of targeted capacity mechanism would you prefer to see implemented:

- Last-resort dispatch; or
- Economic dispatch.

See the answer to question 19.

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

Locational signals need to be imposed consistently. Locational pricing for capacity creates the best incentive if network charges are locational as well.

#### 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 agree in general with the combination of carbon support price, FIT with CfD and support for flexible plant, subject to the points made above, in particular the need for availability payments and ensuring scope for customer response. The details are crucial and need to be further worked up to ensure that the package is coherent and workable, and will deliver the required outcome.

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

We do not believe that sufficient detail has yet been established to choose definitively between the two packages.

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?

The important aspect of these proposals for electricity distributors is to ensure that the proposals assist in and do not hinder the development of smart grids which are needed to enable cost-effective customer response. We have made proposals above in relation to regulatory intervention to assist standardising time periods for time of use tariffs and interoperability which are needed to facilitate this.

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

The interactions are important, but cannot be fully understood from the level of detail currently provided. This is why an expert team needs to develop the detail.

## 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 implementation risks are significant. Previous changes to the electricity market (privatisation, introduction of retail competition, NETA) have involved intensive involvement of all parts of the electricity industry. This needs to start as soon as possible. One danger is that there is already intensive effort going into the smart meter roll-out and the development of smart grids. There is a risk to be managed of under-resourcing for one or more of these projects.

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?

- 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?
- Are there other models government should consider?
- Should prices be set for individual projects or for technologies
- Do you think there is sufficient competition amongst potential developers / sites to run effective auctions?
- 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?

The purpose of a feed in tariff is to provide greater certainty on price. An auction, while preferable in theory, reintroduces uncertainty. An administrated price that is satisfactory to the financial community should be sufficient.

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

Major changes will be needed to the agreements underpinning the electricity market structure, but no major changes seem needed to the regulatory institutions.

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?

So long as the principles of clarity, simplicity and non-discrimination between technologies are maintained, market distortions and other unintended consequences are likely to be minimised. The Government should concentrate on removing the market distortions that hinder appropriate investment and avoid picking winners.

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

The Government should ensure adequate time for the details to be established by the industry, while minimising delays due to necessary legislative processes.

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?

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.

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?

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

The transition of the Renewables Obligation has no direct impact on CE and so we have no comments on these questions.