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Electricity Market Reform Consultation  
Department of Energy and Climate Change  
3 Whitehall Place  
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10 March 2011

Dear Sirs

**Electricity Market Reform**

I write in response to your consultation published in December and welcome the opportunity to comment at a time when a number of reviews of the energy sector are taking place.

Electricity North West Limited is the electricity distribution network operator based in the North West of England, with no supply or generation interests. Our comments are therefore from the perspective of an energy network provider regulated by Ofgem. We submitted a response dated 24 September 2010 to DECC's Call for Evidence on the Ofgem review and our comments on this consultation support our earlier submission. We have not explicitly answered the questions in the consultation but raise a number of issues which may affect the networks' ability to facilitate and contribute to the achievement of the decarbonisation of the UK economy.

The objective for the Electricity Market Reform seems to be predominately focused on ensuring that low carbon electricity generation assets are delivered in a timely and efficient manner. Whilst we support this aim, we are particularly concerned with the implications for electricity networks of decarbonising the UK and note that many of these issues are not addressed in the document. These issues also require serious attention from Government in order to prevent them becoming a significant barrier to what the Electricity Market reform is aiming to achieve.

Historically the role of networks (operating as natural monopolies) was to connect the generation to supplier's customers and to enable competition to occur in generation and supply of electricity. The future role of networks will need to change to facilitate the decarbonisation of energy usage. This role is critically important and goes beyond the physical connection of new generation fleet to ensuring that sufficient capacity is available throughout the network to allow energy usage to switch from high carbon gas, petrol and diesel for heating and transport toward low carbon electricity.

To facilitate this role there are a number of additional actions, clearly within the locus of control of the Secretary of State and DECC, that must be undertaken alongside the key changes proposed in the Electricity Market Reform consultation, to simultaneously reform the regulated environment for electricity networks, specifically:

- Providing more explicit Social and Environmental Guidance to Ofgem
- Creating the right conditions for investment
- Maintaining Regulatory independence
- Facilitating cross-industry dialogue
- Ensuring joined-up thinking across policy areas
- Influencing the development of European Codes and Standards

The compelling requirements that lead us to conclude that each of these actions is essential for the success of the decarbonisation of the energy sector are described in more detail below.

### **Providing more explicit Social and Environmental Guidance to Ofgem**

To be successful in achieving our decarbonisation goals, the 2050 Pathways Analysis proves that the low carbon policy objectives must penetrate all sectors including transport, space heating and process heating. Our domestic load growth projections based upon the expected impacts of electric vehicle charging and the growth of heat pump usage suggest that the level of network reinforcement investment will need to increase dramatically in the next five to ten years. Initial estimates suggest a minimum doubling of domestic electricity demand, even if the new loads are optimally scheduled.

On a localised level, a single fast electric vehicle charger or small number of domestic heat pumps in a street will often cause significant issues for the local low voltage grids. This is likely to cause voltage limits to be breached and significant investment will be required in distribution transformers due to peak load having doubled. This issue is clearly illustrated when one appreciates that the expected additional demand increase due to electric vehicle charging almost matches the present total day-time demand.

We currently estimate that using current network management standards and policies these load increases would require a minimum of £1bn of investment before 2030 in our network area alone, with a quarter of this funding required in our next price control period. Using traditional techniques, load related expenditure within RIIO-ED1 would be expected to rise by over 200%.

To mitigate the twin risks of high reinforcement costs and delays in the delivery of additional network capacity, significant technology innovation and investment will be required in load management and demand side response; there is greatest opportunity for this at the higher voltages. In some instances, networks will be the key enabler of localised generation. It is therefore important that network development must at least match generation development. As currently written, the Electricity Market Reform assumes that these issues will be addressed by network companies in an efficient and timely manner. This will not be the case without changes to the current regulatory framework. DECC must provide regulators with clear guidance on the need for networks to support wider policy objectives or risk delays in both local generating capacity and low carbon reduction technologies. DECC must also ensure that Ofgem provide sufficient incentives to deliver the innovation required to tackle these issues and recognise that innovation represents a significant departure from typical infrastructure investor risk profiles which will require compensation.

Linked to this issue is the current approach to incentivisation of network management. Networks are currently incentivised to increase utilisation rather than increase capacity. When regulators were responsible for capturing short term efficiencies on behalf of customers, these objectives were appropriate but we now operate in an environment which requires a longer-term, more

expansive view of efficiency. The current approach will result in the availability of network capacity becoming a "bottle-neck" that delays the move to the low carbon economy, and in particular can create issues for future generation investments. If the future role of networks is to facilitate the transition to low carbon generation, the incentive mechanisms adopted by Ofgem must change to support this changed role. To achieve this, Ofgem must be given clear guidance on the objectives and roles for future networks, to ensure that the mindset of Ofgem changes away from a narrow focus on cost efficiency to the efficient enablement of a low carbon economy. Regulators should be free to determine the appropriate tools to deliver the policy but the overall objectives must be consistent with Government policy. Ofgem are somewhat restricted in adopting this wider perspective by their statutory duties. DECC can support and enable Ofgem to make this change by drafting more explicit Social and Environmental Guidance for Ofgem that reflects the key implementation requirements of government policy.

### **Creating the right conditions for investment**

One of the most pressing issues for the Government must be the availability of financial resources to support the required investment in generation and infrastructure. Ofgem suggested that this amount will exceed £200bn and although a sizeable portion could be raised through the debt markets, equity will continue to play a vital role. The amount of finance which could be provided by typical infrastructure investors is uncertain and highly sensitive to changes in risk profiles. With competition for these scarce resources from other UK and international investments DECC must ensure that the appropriate long-term commitments to investors are retained or enhanced. For regulated networks this can only be achieved by ensuring that Ofgem provide long-term competitive returns packages whilst minimising the level of uncertainty associated with investments. The long-running and consistent opposition of investors and network businesses alike to Ofgem's proposals for financeability under their RIIO model demonstrate that in the regulated sector this has not yet been achieved. Infrastructure investors' views of the attractiveness of the UK as an arena for investment, whether in infrastructure in competitive markets or regulated markets is influenced by the explicit market signals and implied attitude to investors demonstrated by the regulatory approach. Ofgem's failure to convince investors that its RIIO proposals are financeable will not only deter investors from supporting new regulated infrastructure, but also influence views of the wider regime for investment in infrastructure in competitive markets, ie electricity generation assets. Government can ensure that investors are protected from policy fluctuations (through grandfathering arrangements) and the regulators should be explicitly guided to ensure returns recognise the scarce nature of infrastructure equity.

### **Maintaining Regulatory Independence**

To date, the success of networks has been achieved through independent incentive-driven regulation. DECC must ensure that regulators continue to operate as independent bodies as this is the most efficient mechanism to secure network infrastructure finance and maintains investor confidence in the sector.

### **Facilitating cross-industry dialogue**

The Electricity Market Reform consultation aims to design a framework for the delivery of a desired outcome – the decarbonisation of electricity generation at the lowest cost. If the market conditions are right, the most efficient route to decarbonisation will emerge in time to achieve key carbon reduction targets. Whilst we support this output-based approach, it is important to recognise that network companies need to anticipate the solutions that will be adopted if they are to optimally plan future networks. The ultimate market-driven choice of technologies will have implications for local and national grids as the location and intermittence of generation will change the scale and timings of the future peak load and the extent to which localised generation can be used to balance localised demand. These issues will have implications for future network planning. DECC's 2050 Pathway Analysis is very useful in this regard. To support the networks in understanding the emerging technology choices as early as possible a strategic dialogue across

our fragmented energy industry is essential. DECC can facilitate this dialogue by ensuring fora such as the newly re-constituted Energy Networks Strategy Group (ENSG) and the proposed Smart Grids Group have appropriate access to those monitoring and co-ordinating the emerging generation strategy.

### **Ensuring joined-up thinking across policy areas**

In a number of areas, the Electricity market reform document fails to recognise the importance of developing policies across generation, supply and networks in parallel in order to avoid unintended consequences when different mechanisms interact. Previous attempts to positively distort market signals to encourage low carbon investment may have failed due to the incompatibility of the three areas. Ensuring that regulators and Government have cohesive and complementary objectives and policy is essential to the success of market reform. For example the consultation discusses the use of demand side management as a way to "reduce the growth" of generation. This "negawatt" approach also has the potential for network companies to use as a mechanism to influence demand profiles in order to defer reinforcement investment. Whilst the avoided generated unit or avoided reinforcement project is the most efficient short term solution, DECC must recognise that this may simply reflect a deferred investment need rather than a long term solution.

Although there are emerging network techniques to create more usable capacity, these will not be enough without an effective and efficient demand side response to enable usage to be scheduled to suit both customer needs and the needs of the energy industries. For energy companies this means much more engagement with customers than in the past, but crucially in different ways. True smart behaviour will only be unlocked by customers valuing and owning smart appliances, including heating and transport. We believe there is a very urgent need to ensure active engagement across this supply chain of energy and appliances and we see a crucial rôle for government in helping achieve this. Government must take a lead to ensure that electricity customers have available smart appliances (including space heating and vehicles) that will enable an effective demand side response from customers as part of a new integrated smart energy delivery system. This is probably best achieved through setting standards for appliances and may require DECC to work with other Government departments such as BIS, DfT and HSE.

Ofgem has required network companies to ensure that pricing signals reflect the long term economic costs of connection. In order for these price signals to be effective, they must be visible and reflected in customer bills. We suggest that this could be improved by requiring suppliers to identify the distribution charge in bills. Further work will be required to ensure that price signals are sufficiently strong to elicit the desired responses and that stronger price signals designed to stimulate the desired behaviour by generators do not "over-ride" the incentives designed to manage network capacity issues. Whilst these signals will often be complementary (where network constraints and generator constraints coincide) there will be instances where network constraints are very geographically specific or occur at different times to peak generation requirements. To be successful, network companies will need to be in a position to make payments that are sufficiently strong to drive desired behaviour (including, if necessary, over-riding other market signals). This may require changes to market rules in order to remove restrictions on DNO activities and well as requiring Ofgem to assess the efficiency of costs very differently.

### **Influencing the development of European Codes and Standards**

We (along with the Distribution Code Review Panel of Great Britain) are still trying to understand fully the development and governance of the new code and its place in the Third Package. Whilst there are many surprises in the draft pilot code so far, there are two prominent concerns. The first is that the process is dealing first with the requirements for the connection of generation. We are very surprised that this is being tackled in advance of agreeing the relevant security and performance standards for the total system. In Great Britain, these high level performance requirements are contained in documents that are themselves licence requirements (eg Security

and Quality of Supply Statement; Engineering Recommendation P2/6). The GB Grid and Distribution Codes are then drafted to implement these higher level requirements. The current ENTSO-E drafting process potentially confuses these two aspects.

Our second concern is the apparent lack of conformance to the requirements of the ERGEG Pilot Framework Guidelines. We believe the pilot code is drafted at a much too detailed and intrusive level. The existing GB Codes already provide for the complete operation of a competitive wholesale market. There may be some minor adjustments necessary to make it work in a fully transparent way across Europe, but we do not believe that the level of prescription in the pilot code is necessary to achieve this

Another aspect of the drafting of the ENTSO-E code which raises concerns is its potential application to the Distribution Code. We believe that this must not occur. Distributors are bound to comply with the Grid Code. However Distributors will have their own system management requirements which are defined in the Distribution Code. We expect that these requirements will change considerably with the growth of smart grids. Including the whole of the Distribution Code within the scope of the draft ENTSO-E code will stultify the development of smart grid interface requirements.

In summary, we believe that there is a compelling case for these five key actions that will complement the proposed actions in the Electricity Market Reform and ensure that achievement of the objectives of the Electricity Market Reform are not impeded by constraints from the electricity networks. I hope our comments will be duly considered. My colleagues and I would be delighted to discuss these issues in more detail with your team.

Yours sincerely,

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