

27 August 2014

Ms Maxine Frerk  
Ofgem  
9 Millbank  
London  
SW1P 3GE

Dear Maxine,

I am writing on behalf of the DNOs in response to Ofgem's Draft Determination on RIIO-ED1 published on 30 July 2014, and to raise a number of concerns with both the level of savings that have been expected as a consequence of innovation, Smart Grids and Smart Metering, and the process by which Ofgem has derived them.

### **The role of the Low Carbon Network Fund in identifying savings**

We note Ofgem's challenge that the Low Carbon Network Fund projects have offered the potential for £2bn of savings over the RIIO-ED1 period, and Ofgem contrasts these with the DNOs' requests for Total Expenditure (Totex) and the savings embedded therein.

Firstly, the £2bn of benefits is derived from individual projects, each judged by your Expert Panel or assessed by the companies to be breaking boundaries, and each with a finite chance of commercial and technical success. Whilst each DNO is committed to delivering its LCNF projects, any benefit estimate must take into account a risk weighting.

Secondly, a number of DNO groups impacted by onshore renewable generation have made firm commitments in their RIIO-ED1 business plans to roll out faster, lower cost connection alternatives to generation customers using novel contracts and technology as a result of their LCNF activities. These commitments and their value are not recognised by Ofgem in the current assessment since they do not form part of Totex and instead the savings accrue mainly to the generators, but they form a not insignificant part of these £2bn savings.

### **Load-related reinforcement on our 11kV and LV networks**

One of the key concerns leading to the establishment of the Smart Grid Forum was the challenge being faced by DNOs by the uptake of Low Carbon Technologies (LCTs) on their low voltage (LV) networks.

The DNOs have responded to this challenge. The companies' plans for reinforcement at the LV and 11kV level in response to LCT uptake, has been

robustly benchmarked through Business Plan Data Template sheet CV103 and allowances adjusted where necessary. Many of the companies have committed ahead of time to use innovative solutions to avoid reinforcement wherever possible and explicitly applied cuts to their modelled LV reinforcement estimates.

With this in mind, we are strongly of the opinion that there is no reasonable further stretch that could be applied to LV or HV reinforcement expenditure based on today's information.

### **Expectations of savings from EHV reinforcement**

We agree that the Transform model and other similar models used by the DNOs to automate the study of various uptake scenarios have contributed valuable hard data into the discussion.

However, we are concerned that a significant number of adjustments need to be made to headline figures for network reinforcement in Business Plan Data Template sheet CV101 before it can be compared with the outputs of the Transform model. We are pleased to see that the first of these adjustments, to remove diversions expenditure, has been reflected in Ofgem's calculations but urgently seek clarification of your calculation method to ensure that 132kV reinforcement expenditure, 33kV expenditure where this was not modelled by Transform, expenditure related to fault level and harmonics, advanced voltage control savings, and finally enabling activities such as unbundling local loops have also been removed before any benchmarking of savings is carried out. We note further that the DNOs individually had to carry out significant calibration of the Transform model to reflect their network structure, their historic experience of the need for reinforcement on the LV and 11kV networks, and their forecasts of LCT uptake. A number of the DNOs have discussed both of these matters previously with Ofgem<sup>1</sup>.

- We respectfully request to see the way in which Ofgem has derived the 25% expectation of savings and, separately, the way that Ofgem has calculated from this percentage figure, the absolute levels of savings based on reinforcement expenditure in CV101.

### **The distinction between Smart Grid and business-as-usual**

We understand Ofgem's desire to distinguish embedded benefits that should legitimately be regarded as 'best practice' or 'business as usual' from those which have only recently been technically and commercially proven. However, the question-and-answer process between Ofgem and the individual DNOs has not been fit-for-purpose.

Several examples exist of technologies for which the short-hand used in the question and answer process has led to misinterpretation: the term 'partial discharge' failed to

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<sup>1</sup> See for example UK Power Networks' 'Annex 9: Smart Grid strategy', March 2014, pages 93 to 106

differentiate between handheld spot measurements as a safety measure before entering a substation; periodic inspection measurements; and ongoing online health monitoring of switchgear and cable sections as proposed by UK Power Networks and SP Energy Networks. Similarly, the term 'oil re-generation' failed to differentiate between the business-as-usual technique of draining oil and suitably disposing of it, before re-filling with new oil; and the technique developed by Electricity North West which extends the life of transformers by on site regeneration of both the oil and the transformer insulation. These are only two of several examples which the DNOs will be raising with Ofgem.

### **Smart Meter and Smart Grids**

We are concerned that benefits from Smart Meters may have been double-counted with benefits from Smart Grids. Any top-down approach such as the use of Transform needs to take into account that a number of the Smart Grid techniques recommended by Transform are only achievable with Smart Meters, and therefore the savings are already counted within the 25% stretch derived from Transform. The DNOs in their bottom-up proposals were clear that techniques such as Time-of-Use tariffs enabled by Smart Meters were part and parcel of, not additional to, commitments to implement Demand Side Response.

Separately we seek assurance that Ofgem has worked from the most recent Analysis of Network Benefits from Smart Meter Message Flows released in July 2013 by the Energy Networks Association, which recognises important changes since the original assessment carried out in March 2012. The July 2013 document was informed through independent analysis undertaken by EA Technology, DNV KEMA and Barringa. The analysis took account of certain aspects of smart metering functionality not carried forward into the SMETS2 specification, lower expectations regarding rates of growth in low carbon technologies such as electric vehicles and heat pumps (and hence the scope for savings resulting from ToU tariffs and active network management) and delays to the commencement of mass rollout (which affects the timing of ED1 benefits). The analysis also draws a clear distinction between benefits that impact DNOs' costs bases, benefits to consumers that DNOs are able to deliver independently of other parties, and benefits which are dependent on Suppliers. It would also be well to note, that since the publication of this analysis, the Smart Meter Programme has been further delayed and thus the benefits reported in the paper need to be again reduced due to the delay in roll-out.

Importantly, the analysis also distinguished between benefits deliverable in ED1 and the higher level of benefits anticipated during ED2. In this particular respect we are unable to understand how Ofgem has calculated that the proportion of the network benefits cited in DECC's January 2014 Impact Assessment (£497m NPV over 18 years) deliverable during ED1 should be £197m (non-discounted).

Separately, at the time of preparing their business case for RIIO-ED1, the DCC fixed charges were confirmed by DECC as being 2p per meter per year rising to 20p per meter per year in 2020. In practice, fixed charges are already 12p per meter per year for every domestic and small commercial customer whether Smart Metered or not, and will be rising to 30p per meter per year for 2015. This is a significant variation, making amounts submitted in DNOs plans into ED1 even more stretching.

- We seek assurances that Ofgem has worked from the most recent document 'Analysis of Network Benefits from Smart Meter Message Flows released in July 2013' and that the delay in the implementation of the Smart Meter Programme has been factored into any benefits.
- We would also like Ofgem to recognise the challenge facing DNOs with the increase of DCC fixed charges and how this is accounted for.

### **Benefits of Smart Grids to areas other than reinforcement**

We agree that Smart Grids and, more widely, the higher risk innovation projects which have been supported by the Innovation Funding Incentive can have benefits beyond reinforcement, in areas such as quality-of-supply, smarter construction and asset condition assessment.

However, distinct from reinforcement, there is no equivalent top-down method by which to assess the potential of this. The needs of each network and the potential for improvement will be critically related to each DNO's existing fleet of assets, existing network topology, and starting condition of the assets. Asset groups such as switchgear and transformers typically have to be assessed separately, as do quality-of-supply issues on networks which may operate at the same voltage but differ significantly in their design. No standard industry model exists which can assess the opportunity for innovation, and this is already strongly incentivised through the various incentive mechanisms in place.

As such, savings in other areas need to be assessed on their individual merits. We are surprised to see an attempt at a top-down stretch being applied given the concerns we have outlined in the previous paragraph, and respectfully request further details of your calculations and justification for any of the figures therein.



## Summary

We look forward to Ofgem's response on the following matters:

- The way in which Ofgem has derived the 25% expectation of savings in Load-related reinforcement and the way that Ofgem has calculated the absolute levels of savings based on reinforcement expenditure in CV101;
- Is the full £2bn benefit derived from LCNF projects directly beneficial to network operators i.e. as evidence suggests, that generators have been benefitting from the savings that these projects bring in.;
- Assurance that Ofgem has worked from the most recent ENA Analysis of Network Benefits from Smart Meter Message Flows, and clarification of how DECC's January 2014 £497m NPV 18-year benefit has been equated to £197m (non-discounted) over ED1;
- We would also like Ofgem to recognise the challenge facing DNOs with the increase of DCC fixed charges and how this is accounted for;
- Ofgem's calculations of Smart Grid benefits in areas other than reinforcement and justification for any of the figures therein.

To assist with some of these questions, collectively we have commissioned some work into:

- (a) Understanding what aspects of Transform more can be applied to which components of reinforcement and
- (b) Identifying and quantifying any double count of smart meter and smart grid elements, so that the most accurate and correct numbers are able to be used.

Once this piece of work has been completed, the affected DNOs would like to take the opportunity to share the results and discuss any pertinent points that come out of it.

Yours sincerely,



David Smith  
**Chief Executive**  
On behalf of the DNOs