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5 February 2016

Dear Neil

**Reviewing the benefits of the Low Carbon Networks Fund (LCNF) and the governance of the Network Innovation Competition (NIC) and the Network Innovation Allowance (NIA)**

Thank you for the opportunity to respond to the above open letter. This letter should be treated as a consolidated response on behalf of UK Power Networks' three distribution licence holding companies: Eastern Power Networks plc, London Power Networks plc, and South Eastern Power Networks plc. Our response is not confidential and can be published on the Ofgem website.

UK Power Networks is a strong supporter of Ofgem's innovation incentives (i.e. LCNF, NIA and NIC). These incentives have already delivered significant benefits to customers and the industry as a whole.

- Innovation funding for Flexible Plug and Play allowed UK Power Networks to successfully test and implement flexible generation connections, enabled by active network management systems. This has been central to meeting the challenge of a tenfold increase in connection applications from embedded generation and has already connected more than 30 projects and saved approximately £40 million in connection charges. We now operate the largest area of actively managed smart grid network in the UK.
- Our Smarter Network Storage project commissioned the first battery storage system in the UK able to provide commercial services to the grid. It has proven the reliability of battery storage supporting the Grid with over 1,700 hours of frequency response and short term operating reserve and providing capacity in support of the local network on more than 100 occasions. It has shown that commercial arrangements can be developed to extract value from all parts of the energy system value chain and it continues to provide a point of reference and valuable learning as National Grid rolls out new commercial services, such as enhanced frequency response.

We are equally excited about the potential for the solutions pioneered by other network operations; for example, Electricity North West's CLASS project's solutions for demand control and reactive power support.

The demands on the energy system are still changing rapidly. We have seen 3,100MW of generation connect to our networks in five years, more than doubling the capacity connected. Energy storage is becoming economic both at the grid and domestic scale and the decarbonisation of transport is only just beginning.

Innovation projects have successfully brought together partnerships of new entrants, start-ups, and existing suppliers comprising both technical and commercial expertise. This is a major success for the LCNF, NIC and NIA.

We remain convinced that innovation funding through the NIC is an essential tool in developing and proving new approaches to building and managing a smart energy system during uncertain times, both in terms of technology and commercial arrangements.

We hope that Ofgem's review will come to the same conclusion.

We have set out our answers to your specific questions in the appendix to this letter. If any part of our response requires further explanation or clarification, please do not hesitate to contact me.

Yours sincerely

A handwritten signature in black ink, appearing to read 'James Hope', with a stylized flourish at the end.

James Hope  
Head of Regulation and Regulatory Finance  
UK Power Networks

Copy Andrew Burgess, Associate Partner, Smarter Grids and Governance, Ofgem  
Paul Measday, Regulatory Returns & Compliance Manager, UK Power Networks

## Appendix

### **Question 1: Should we change the NIC and NIA criteria? If so how and why?**

We are comfortable with the current criteria and feel that they are working well. They have allowed us and other DNOs to deliver projects with the transmission networks, the system operator, with energy suppliers, and at every part of the system ranging from smart meters through to substations. They have equally encouraged commercial or “non-build” solutions as well as radical equipment solutions, with examples ranging from the country’s first day-ahead Time-of-Use tariff through to new examples of equipment able to share power between neighbouring substations.

### **Question 2: Should we give more of an indication of where we consider innovation is required or is that inappropriate?**

We feel that the comprehensive feedback from the expert panel each year and regular Ofgem day-to-day policy consultations are sufficient and have successfully indicated areas that need further innovation. Furthermore, we believe that our innovation is already very closely tied to our stakeholder engagement process, where we are motivated to innovate to resolve local issues, and very closely tied to our engagement with the wider connections market.

### **Question 3: Should the focus of the NIC and NIA be broader and cover the broader energy system?**

Please see our answer to question 1 above. We feel it is important to examine the context of the broader energy system and should make sure that there are no additional barriers, over and above two management teams (from different companies) in two sectors needing to make a joint case under their specific governance processes for initiatives under the NIC. We note that this has worked extremely well in the case of electricity, with examples such as EDF Energy and UK Power Networks partnering within the Low Carbon London project, British Gas and UK Power Networks partnering in the energywise project, and British Gas and Northern Power Grid partnering in the Customer Led Network Revolution project. We understand the importance of maintaining transparency about the sources of funding and where benefits will fall amongst different licensees.

### **Question 4: Can we improve the process for deciding on which projects to approve and if so how?**

We feel the process is a robust one that has successively improved year on year.

### **Question 5: How can we improve participation in the NIC?**

We are proud to have worked with new entrants to the UK (Bigwood Systems Inc. and Silver Spring Networks); start-ups (Smarter Grid Solutions); two energy suppliers (EDF Energy and British Gas); a company more known in the rail sector (Turbo Power Systems); and protection, control and telecomms providers (Silver Spring Networks and Fundamentals). We elicited significant interest and multiple proposals for project ideas in recent years, as documented in our Initial Screening Pro-formas for the 2013 and 2014 competitions. Finally, we elicited 14 responses to our tender for the energy storage device required by the Smarter Network Storage project, and, as a second example, we elicited 13 responses to our tender for contingency analysis software required by the Kent Active System Management (KASM) project. We therefore do not believe that there should be any fundamental changes to the process to encourage participation in the NIC.

**Question 6: Please comment on your experiences if you have worked with licensees when implementing NIC and NIA projects or when transferring innovation into business as usual.**

We have not responded to this question, since you are seeking responses from third parties.

**Question 7: Are there any other issues we and the independent evaluator should consider as part of the review?**

We do not have any further suggestions at this time to add into the review.

**Question 8: To what extent do you consider that the LCN Fund has succeeded?**

We strongly believe that the proof is in the pudding. We have no doubt that the LCNF has succeeded, since it has allowed us to establish the first energy storage facility system to be participating in the UK balancing markets since the last pumped hydro power station was built in the 1970s – meanwhile serving the vital needs of the distribution network that was otherwise about to be upgraded with consequent cost and disruption. The energy storage facility has already supported National Grid for more than 1,700 hours and fed the local electricity network on more than 100 occasions – standing ready to provide power in the event of a national or local problem on the network.

The LCNF has allowed us to respond really effectively to our Distributed Generation customers: not only connecting 3,100MW of generation over recent years and building a pipeline of a further 3,100MW, but at the same time developing and rolling out new and attractive commercial frameworks. These commercial frameworks have proved to be financeable, and consistently attract even higher customer satisfaction.

In both cases, the LCNF has succeeded in actively encouraging us and other DNOs to come forward with precise recommendations for policy and regulatory changes required to facilitate the low carbon transition, which has been of great value to DECC and Ofgem as both storage and flexibility become increasingly important.

The LCNF has succeeded in demonstrating a wider range of commercial relationships with other partners both within and outside the traditional energy chain, and frequently demonstrating that these can be achieved within the current industry structure. Within the space of one project, Low Carbon London, we were able to demonstrate commercial relationships with four energy aggregators and bilateral arrangements with 37 demand response sites; control room integration with two demand response sites; system integration with a Charging Network Operator (CNO) in order to call off demand response from electric vehicle charge posts; and a shared or multi-purpose Time-of-Use tariff with one of the major energy suppliers (EDF Energy).

We are equally grateful for the hard work and effort of other DNOs and the work that they have delivered to the industry and we regard the work carried out within Customer Led Network Revolution, LV Network Templates, CLASS, and the Orkney managed zones as a sample of exemplars of the success of the LCNF.

### **Question 9: To what extent do we need to continue incentivising innovation by DNOs?**

In our view, this question should be answered by first asking the question whether the pace of change or potential impact on DNOs of the low carbon transition is any less than was foreseen in 2009/10 when the LCNF was introduced, or in 2013 when it was extended as part of the Strategy Decision on the RIIO-ED1 framework. When we consider that the uptake in Electric Vehicles is now beginning; that a strategy to electrify domestic heat in the UK may need to be revisited; that residential storage is becoming of significant interest overseas; and that the IET and the Energy System Catapult's work on the Future Power System Architecture and Ofgem's review of Independent System Operator (ISO) models may lead to changes in the industry; we feel that there is ample evidence of significant and ongoing change. Some of the work will continue to have considerable uncertainty and require the industry to explore several possible options, without knowing from the outset which will be appropriate and economic.

As such, we believe that there is a strong case for a continued incentive at its current level.

### **Question 10: Are there any other issues we need to consider as part of the LCN Fund benefits review?**

The LCNF, the NIC, the Innovation Funding Incentive, the RIIO-ED1 fast-track process, and the RIIO-ED1 final determination have all created and continue to create strong incentives for DNOs to drive successful innovation projects and will continue to do so.

In particular, we believe that benefits have been extensively reviewed through close-down reports, the RIIO-ED1 final determination and will be reviewed once again should DNOs submit applications for Discretionary Rewards from 2017 onwards. We believe that this provides a strong body of evidence that the LCNF, its successor the NIC, and the NIA are successfully delivering outcomes for customers.