

Electricity Systems Team
Department for Business, Energy and Industrial Strategy
3 Whitehall Place
London SW1A 2AW

And

Energy Systems Integration Team
Office of Gas and Electricity Markets
9 Millbank
London SW1P 3GE

By email to : flexibility@ofgem.gov.uk; smartenergy@beis.gov.uk

12 January 2017

Dear Sirs

UK Power Networks' response to A Smart, Flexible Energy System – A call for evidence

Thank you for the opportunity to respond to the above call for evidence. This response is on behalf of UK Power Networks' three licence holding companies: Eastern Power Networks plc; London Power Networks plc; and South Eastern Power Networks plc.

A key focus for 2017 will be the continued development of our roadmap to become a Distribution System Operator and ensure that our networks retain the flexibility required to adapt to the changing industry environment. We consider this an integral part of our ambition to be the best performing DNO group, by being:

- The safest;
- The lowest cost;
- The most reliable;
- The best service provider;
- The most engaged workforce; and
- The most innovative.

A smart, flexible energy system will be vital to meeting customers' expectations of secure, affordable energy as the low carbon transition progresses. Customers will remain at the centre of the transition as they adopt low carbon technologies such as EVs and domestic energy storage. Current forecasts for the development of low carbon technologies indicate that the capability to use flexibility extensively will be needed from the mid-2020s.

Distribution networks have already responded to the challenge of the changing energy market, connecting 27GW of distributed generation (DG), of which 8.5GW has connected across UK Power



WINNER
Utility of the Year



**INVESTORS
IN PEOPLE** | Gold

Return Address:
Newington House
237 Southwark Bridge Road
London SE1 6NP

Networks service area (with a further 2.4GW contracted to connect). We have already begun the roll out of active network management of DG allowing 330MW of generation to connect saving of over £100m to DG customers.

The benefits of smart, flexible systems are estimated to be up to £8bn a year by 2050¹ and rely on the optimisation of distribution connected resources. Research undertaken by Imperial College for our Low Carbon London project², The Carbon Trust³ and E3G⁴ clearly demonstrate the benefits from a smart, flexible energy system which will be enabled by the transition of Distribution Network Operators to Distribution System Operators.

In developing our response, we have actively engaged with stakeholders, including renewable generators, storage providers, aggregators, suppliers and new IT platform providers. Our engagement has provided us with first-hand experience of the issues which these stakeholders face, both in their interaction with us as a network operator and also the wider market place. We have used this experience to inform our response.

We have set out our detailed responses to the questions raised in the call for evidence in the attached document but we would like to highlight the key priorities below.

Priorities for Network Operators

The network operators, working together through the Energy Networks Association, will be taking forward the development of key initiatives through their TSO-DSO Project. This will bring together, broaden the scope and increase the pace of work of existing groups to progress priority areas, in particular:

- Transmission – Distribution interface: Development of improved Transmission – Distribution interface processes around connections, planning, shared TSO/DSO services and operation;
- Customer Experience: Assessment of the gaps between the experience customers currently receive, their emerging service needs and identification of any further changes to close the gaps; and
- DNO to DSO Transition: Development of a more detailed view of the required transition from DNO to DSO including the impacts on existing capabilities. We will seek to deliver a clear agreed DSO/SO model with accompanying roles and responsibilities for market participants.

UK Power Networks will also continue to develop our work on flexible generation connections, using the pioneering tools being developed in our Kent Active System Management project and our other innovation projects to see how we can minimise system constraints and optimise the use of the generation connected to our networks. The joint NIC project between National Grid and UK

¹ Imperial College & The Carbon Trust 'An analysis of electricity system flexibility in GB' November 2016: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/568982/An_analysis_of_electricity_flexibility_for_Great_Britain.pdf

² [http://innovation.ukpowernetworks.co.uk/innovation/en/Projects/tier-2-projects/Low-Carbon-London-\(LCL\)/](http://innovation.ukpowernetworks.co.uk/innovation/en/Projects/tier-2-projects/Low-Carbon-London-(LCL)/)

³ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/568982/An_analysis_of_electricity_flexibility_for_Great_Britain.pdf

⁴ <https://www.e3g.org/library/plugging-the-energy-gap>

Power Networks, TDI2.0, which has just commenced will pioneer the integration of systems and commercial arrangements between SO and DSO to optimise the whole system benefits of flexibility.

Our priorities for Government and Ofgem in 2017

In support of the work the industry will take forwards we consider that Ofgem and BEIS should :

- Start the work needed to build on the RIIO regulatory framework to develop aligned incentives for transmission and distribution in time for RIIO-T2 and RIIO-ED2, to deliver whole system flexibility benefits and cost effective decarbonisation;
- Engage with DNOs and the SO to understand the advanced monitoring and control systems and enhanced organisational capabilities which will be critical to ensure an efficient flexible energy system, and the additional costs that will need to be incurred developing and deploying these capabilities;
- Clarify the regulatory framework to ensure DSOs can build storage as the least cost technical solution to provide security of supply if specific local circumstances inhibit those services being provided by third parties;
- Support the development of the commercial frameworks and platforms that will allow markets and DSOs to support the complex interactions of a smart, flexible energy system including the visibility of actions to all parties; and
- Support the development of standards to ensure the visibility and control of smart EV charging in conjunction with the Department for Transport and their work on the Modern Transport Bill.

We look forward to continuing our engagement with both Ofgem and BEIS on these vital issues as the development of a smart, flexible energy system progresses to support the low carbon transition. If you have any questions on our submission please contact Sotiris Georgiopoulos (sotiris.georgiopoulos@ukpowernetworks.co.uk) or Robert Friel (robert.friel@ukpowernetworks.co.uk) who will be happy to discuss our submission.

Yours faithfully



Suleman Ali
Director of Safety, Strategy and Support Services
UK Power Networks

CC
Barry Hatton, Director of Asset Management
Sotiris Georgiopoulos, Head of Smart Grid Development
James Hope, Head of Regulation and Regulatory Finance
Robert Friel, Regulatory Policy Manager