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02 August 2013

Dear Anna

## **RIIO – ED1: Electricity Distribution Network Operators Business Plans.**

National Grid Electricity Transmission plc (NGET) welcomes the opportunity to respond to the above consultation. NGET is the owner of the electricity transmission system in England and Wales and the System Operator for Great Britain. This response is on behalf of NGET and is not confidential.

NGET holds regular joint liaison meetings with the electricity DNOs that are connected to our system in order to appropriately plan and coordinate our activities. These meetings provide an effective forum to address a range of issues including network developments and reinforcements that may impact on each other's networks, coordination of outage placements etc. In relation to the DNO's development of their RIIO – ED1 business plans we have generally not had any additional involvement over and above these routine liaison meetings. NGET is also actively participating in the "Smart Grids Forum" where many emerging issues are being addressed.

Our comments on the plans are general and kept at a high level as any specific issues will be addressed in the joint liaison meetings.

- 1) We consider that the issue of appropriately aligned incentives and outputs (between DNOs and TSOs) is paramount and needs careful and detailed consideration if perverse incentives are to be avoided. It is not clear to us from the DNO plans that our incentives are aligned and so there is a risk that the RIIO incentives might lead to one network seeking to address issues they face (and deliver their outputs) by trying to get another network to act (be it operationally or through investment). For example, if transmission Connection Charges to a DNO can be passed through 100% to that DNOs' customers then they might seek the Transmission Owner to reinforce a Grid Supply Point in preference to the DNO undertaking lower cost alternatives on their own network.
- 2) In addition to ensuring incentives are appropriately aligned, it is essential that DNO and TSO plans are coordinated and are economical and efficient when viewed on a combined basis. Greater transparency regarding the scope for operational or investment measures on the DNO and TO systems will enhance our joint ability to ensure that the solutions most advantageous to consumers (present and future) are adopted. As an example, the DNO losses incentive may have led to DNOs increasing their system voltage profile resulting in adverse effects on transmission system voltage levels and our ability to control them (an issue which we have discussed with Ofgem previously). The current transmission voltage control challenges have led in some cases to the need to constrain-on generation and to investment in voltage compensation equipment at

transmission substations. It may be the case that a marginal increase in DNO system losses from a reduction in voltage levels would be more than offset by the saving on the transmission system in terms of generator constraint costs or new voltage compensation plant.

- 3) As DNO networks become more active this will have increasingly significant implications for design and operation of the transmission system for NGET in its SO role:
  - i the rapid development of embedded generation (small scale solar PV and wind generation – and in some cases not so small scale) does not have appropriate visibility at the transmission level and the uncertainties this creates for a TSO could increase costs and might have safety implications (active and reactive power infeeds and fault levels),
  - ii demand side response is another tool that DNOs are increasingly using and is being encouraged through RIIO-ED1 – we would encourage DNOs to continue to work with us and others (e.g. through the Smart Grid Forum) on how we can get the most out of DSR services, and finally,
  - iii ROCOF<sup>1</sup> relays is another area where greater DNO coordination with transmission would be welcomed and could contribute to lower future operational costs.

Availability of DNO system and operational data will therefore become an even more important issue for TSOs, however it is not clear to us that DNO RIIO-ED1 plans have addressed the potential increase in resources that might be needed to provide this data.

- 4) While further contractualisation and commercialisation of the T-D boundary would raise significant questions of practicality we feel consideration should be given to the development of appropriate tools, funding mechanisms, and incentives to allow one network to help solve an issue that another network faces where this is more economical and efficient. As an example – some of the voltage control issues that have recently emerged on the transmission network might (in certain cases) be most economically addressed by DNOs taking operational actions or through investment in reactive compensation (which could be at lower cost than transmission investment). However the current incentives do not appear to encourage this.
- 5) Additionally some of the NETSO's operational and planning tools could enable more efficient network operation if there were an appropriate counterpart / support on the DNO (e.g. more regularly updated data rather than an annual submission<sup>2</sup>). Appropriate funding / incentives should help DNOs to develop the systems / tools to support squeezing more out of the existing network and thereby benefit the consumer. It is not clear to us whether the ED1 plans include provision for this. (Equally there may be additional information / tools that the NETSO could provide to assist DNOs and we would be happy to discuss any such developments with them).

Our comments above are not comprehensive, but reflect the range of issues that we consider need addressing as part of the RIIO-ED1 framework. Much good work is taking place at the regular liaison meetings between us and DNOs, and through the Smart Grids Forums and elsewhere, but we are concerned that the ED1 business plans may not reflect adequately some of the future needs of DNOs to work with transmission companies in seeking to ensure consumers' interests are best served.

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<sup>1</sup> Rate of Change of Frequency relays have the effect of disconnecting embedded generation when they sense a fall in system frequency. Inappropriate setting of ROCOF relays could result in large volumes of embedded generation being tripped at the same time as the loss of a large transmission in-feed thereby exacerbating the frequency fall and potentially leading to more widespread disturbances. If the system is to remain secure this may require the NETSO to hold additional system response against the risk of the larger combined loss of system infeed and this cost will ultimately fall on consumers.

<sup>2</sup> Current data (on e.g. system fault levels) will always be more accurate than an annual assessment (which will necessarily need to be more conservative) and so it should provide the opportunity to drive the network harder.

We look forward to working constructively with the DNOs over the coming months to ensure that their business plans and ours are well coordinated and will deliver good value to consumer now and in the future. If you have any questions relating to this response then please contact me in the first instance.

Yours sincerely

[by email]

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