National Grid House
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To: Rhianne Ogilvie
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16th April 2014

Dear Rhianne,

Re: South East Smart Grid ISP Clarification Questions

National Grid Electricity Transmission (NGET) submitted the Initial Screening Pro-forma (ISP) as part of Network Innovation Competition (NIC) 2014 for development of South East Smart Grid (SESG) project on the 4th April 2014. Further to this, we received a request to provide some clarifications as mentioned in your email on 14th April 2014. This response is on behalf of National Grid Electricity Transmission plc. in support of our NIC submission and is not confidential.

The SESG project aims to demonstrate how the use of distributed resources in conjunction with transmission connected equipment can provide the necessary capability which the transmission system requires as an alternative to building new transmission infrastructure.

A. Clarifications requested regarding the method(s):

The method we aim to use in demonstrating this capability as described in the ISP has three key tasks.

- Task 1 will include development of the necessary communication and wide area monitoring and control (WAMC) tools to ensure the necessary actions required can be delivered reliably in the timescale required. This demonstration involves development of a novel control systems, and modification of the existing control systems in place for the distributed resources within the distribution network. These activities are both demonstration of specific novel equipment, as well as the specific novel arrangement of existing transmission equipment and meet the first and second requirements set out in section 4.8 of NIC Governance Document.

- Task 2 will include demonstration of response from various distributed resources such as demand side response (DSR), storage, and solar PV via the WAMC tool developed in task 1 to manage transmission issues. This task will also allow the demonstration of effectively utilising distribution system operator's capability in providing some of the transmission related needs in real time. Such demonstration, is a new operational practice which meets the third specific requirement as set out in section 4.8 of NIC Governance Document.

- Task 3 will also demonstrate the effectiveness of coordination of the existing transmission and distributed resources (such as coordination between DSR, HVDC links, and existing reactive compensation equipment) to manage transmission issues in real time so they can be used as an alternative to building new transmission infrastructure. This demonstration is a novel application of existing electricity transmission equipment and meets the requirement in section 4.8 of NIC Governance Document.

B. Clarifications requested regarding project partners and external resourcing/funding:

National Grid has published future network developments in the Electricity Ten Year Statement (ETYS: http://www2.nationalgrid.com/UK/Industry-information/Future-of-Energy/Electricity-ten-year-statement/Current-statement). This documents presents future network requirements at different

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regions. We have been engaging extensively with our stakeholders on the new and smarter ways of providing some of these requirements. Utilising some of the capabilities within distribution networks to manage transmission issues has been highlighted and we have been active in number of R&D projects in this area.

Given the nature of this project requiring involvements of number of parties and service providers, National Grid developed a call for proposal which was shared with the industrial and academic stakeholders via various channels; including the our external website, Commercial Operation, Energy Networks Association, and number of other forums where we regularly hold stakeholder engagement. This activity was intended to ensure new ideas and type of smart grid solutions which can help with managing transmission constraints in a more cost effective way are captured.

We have currently received a confirmation from the UK Power Networks to act as a project partner (as an interface to ensure the necessary control measures can be applied). A number of other parties have confirmed their interest and in-kind contribution. As mentioned in the proposals, we are still evaluating the final potential partners, their contribution and level of involvements and this will be confirmed at the time of final submission in July.

I trust the above information provides greater clarity on the method(s) and project partners and external resourcing/funding criterion of this project as requested in your email. If you require more information please contact myself vandad.hamidi@nationalgrid.com.

Yours sincerely

[By email]

Vandad Hamidi