

*LCN Fund Full Submission*

# *Supplementary Answer Form*

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Project code:	NPGT202/1	Question Number	NPG006
Question date	30/08/12	Answer date	04/09/12
Submission section question relates to	Section 2		
Topic	Project description		
Question	There is an assumption running through the application that it will be feasible to share the delivery of flexibility services between the DNO and the TSO. Please explain the methodology that is envisaged for achieving this, and the extent to which this has been developed between NPG and National Grid so far.		
Notes on question			
Answer	<p>This answer is in two parts:</p> <ul style="list-style-type: none"> <li>• we first explain the basis for our assumption that the TSO and DNO can share the procurement of flexibility services; and</li> <li>• we then explain the methodology that is envisaged for achieving this.</li> </ul> <p><b>Basis for our assumption</b></p> <p>The DNO requirements for DSR services were developed during the CLNR project. The benefits that could be achieved from a DNO-TSO collaboration became transparent as the project built an understanding of existing DSR market arrangements (e.g. STOR, TRIADS) and from the development of relationships with providers of DSR (e.g. the aggregators). Existing market arrangement (e.g. balancing services that National Grid currently procures and supplier products (e.g. TRIADS)) provides both benefits (e.g. informed market participants) and constraints (e.g. exclusivity clauses) for the DNO. The opportunity to collaborate with the TSO would create a number of benefits (e.g. shared costs, improved market presence for the DNO, leverage expertise from the TSO, a larger market that could improve participation rates and a more coordinated electricity industry approach to</p>		

DSR rather than the current fragmented arrangements)

Analysis and consultation during the bid production process, as well our experience in the CLNR project, suggests that there is significant potential for the DNO and the TSO to share flexibility services.

- The DNO's need for flexibility coincides in time with the TSO's need for flexibility. The DNO is most likely to require flexibility from 4-8pm on winter weekdays. This falls within the current windows for the balancing services that National Grid currently procures (for example the Short Term Operating Reserve (STOR) service).
- The services required by the DNO could be supplied within the technical parameters of the existing TSO balancing services contracts.
- Both the DNO and the TSO require flexibility to be available for their use, but will actually use it very infrequently. For example the TSO's use rates for STOR are currently between 1-2%. Our analysis, based on the DNO requiring 12 days of response from 6% of customers during the winter season, suggests that DNOs are likely to be using less than 1% of the potential availability on their networks at any one point in time.
- It is possible that where the DNO and TSO have jointly contracted for availability a set of circumstances may arise that result in both the TSO and the DNO wishing to call on the same unit of flexibility at the same time. A robust and complete appraisal of the likelihood of this occurring is planned to be taken forward under the proposed LCNF project, however preliminary analysis shows that there is significant scope for the effective management of such issues. For the DNO, it does not matter who calls the response, only that response has been called. However, for the TSO, if the DNO has already called the unit of flexibility, that unit cannot contribute to system balancing. The project will look to undertake a thorough analysis of what additional lines of communication between TSO and DNO might help to mitigate the impact on either party of such clashes, or whether contractual or operational restrictions or conditions on the use of such shared services might be necessary.

We collected this evidence through:

- analysis of existing STOR contracts, and likely DNO needs for DSR;
- our experience in the CLNR; and
- testing and challenge at workshops with key personnel from National Grid and Northern Powergrid.

### **Methodology for achieving the sharing**

A key aim of the project is to develop the detailed methodologies for sharing the delivery of flexibility services between the DNO and the TSO. During the bid stage, we developed these methodologies at a high level.

#### *Method 1:*

In Method 1, sharing would be achieved through the development of trilateral agreements between the DNO, TSO and suppliers of flexibility (e.g. aggregators). Drawing on experience from other trials, the expertise of partners, as well as research into the social, technical and regulatory

barriers, the Project will develop a set of detailed commercial frameworks and operating procedures.

During the bid production process, Northern Powergrid and National Grid identified the high level potential for sharing, in particular sharing the DNO use of flexibility in response to a distribution network fault and National Grid use of the same flexibility for reserve purposes. In addition, an initial investigation was undertaken into technical and regulatory barriers. This found that these barriers would not prevent sharing between the DNOs and TSOs. However, the detailed production of the commercial frameworks and operating procedures has not yet been undertaken. The proposed project would also look to examine other scenarios where flexibility could be shared and an appraisal of whether this could be deployed effectively.

*Method 2:*

Method 2 is subject to a within project decision about whether to proceed with it, based upon further detailed appraisals. However should it proceed, in Method 2, sharing would be achieved through the multi-party market platform. Again, a key part of the project will be to investigate the barriers to a multi-party market, and to establish the detailed design of a market that overcomes these barriers and that facilitates sharing and trading.

During the bid production process, workshops were held with the key potential participants in the market, including the DNO and TSO. The outputs of these workshops fed into a detailed market platform design document produced by Elexon. This design document sets out how sharing would work between the DNO and the TSO and other parties (See Appendix 6, a more detailed document can be sent on request). In summary, the potential process is as follows:

- A purchaser of flexibility inputs its availability requirements to the platform.
- The platform attempts to match these details with availability submitted by providers (either single providers or via an aggregation of providers). If it cannot match the exact requirements, it will publish further offers to meet requirements.
- Providers can then make further offers via a reverse auction process.
- The platform will aggregate other purchasers (i.e. facilitating sharing) if it assesses the combination to be more cost effective for the purchasers.
- The reverse auction format allows providers who can meet the purchaser requirement (in whole or in part) to continue competing until the agreed end time for the auction.
- Once the end time is reached, the platform will assess whether the providers can deliver the purchaser's requirements at the specified reserve price (or lower). If so the auction has completed successfully, and the platform will send the details to the purchaser and provider.

Attachments	
Verbal Clarifications (Consultants )	