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## **Update on the ITPR Project – request for further views and evidence**

This response is from the National Grid group of companies and is supplementary to the response by National Grid Electricity Transmission (NGET) which specifically relates to NGET's duties and responsibilities as the National Electricity Transmission System Operator (NETSO).

This response contains National Grid's views as a participant in wider energy transport and management activities, especially those that involve electricity assets that form interconnectors, offshore transmission and those that might be classified as "multiple-purpose". From our participation in these activities we have expertise and resources relevant to helping with the effective transition to a low carbon economy and the delivery of government's energy policy goals.

### **Issue 1: alignment of the interests of multiple network agents in meeting the overall needs of the system**

The points in the update letter identify the reasons why the various participants in the provision of transmission services may not act in the ideal manner to meet the needs of the system and hence customers. These can be summarised as:

- Process issues - inconsistent and incomplete rules concerning the development and subsequent operation of network across the various codes, especially the STC and Grid Code in GB as well as issues concerning the participation of various agents in ENTSO-E's processes.
- Incentive issues – agents providing network services may face different exposure to the resulting impacts of their services on the electricity market, network customers and end-consumers.
- Information issues - where present documents and information exchanges may not be sufficient to aid development, assessment and decisions concerning an overall integrated design.

*Question 1: Do you think that the key issues should be considered? What is the materiality of the issues identified?*

The process, incentive and information issues should be considered holistically. The materiality of inadequate coordination arrangements are:

- lost opportunities to exploit economies of scale in network assets, for example the installation of multiple low capacity circuits where a reduced number of larger assets could have been justified at lower total cost. (Some studies suggest that the materiality of this

could be up to 20% of the network extension capital cost but the savings strongly depend on the value of options actually foregone);

- unnecessary stranding and/or rationalisation costs due to incremental solutions not providing sufficient flexibility to accommodate future needs and extension;
- inefficient location of capacity, for example interconnector proposals that might not fully consider congestion or development costs on other network assets;
- inefficient design and operational choices, for example taking extensive maintenance outages in sensitive locations or times and unduly conservative operational choices concerning short-term ratings,

These may result in additional network costs and environmental impacts. They may in turn result in unrealised welfare benefits and delays to market entry and competition.

*Question 2: Are there any other issues to be considered in this area?*

We understand and agree that it is important to identify and address the specific aspects of the issues in process, incentives and information listed in the paper. In particular, we agree with Ofgem's observation that the interests of transmission companies are better aligned with those of their customers if they are exposed to the system operational and especially constraint consequences of their asset decisions. This observation is consistent with the EU 3<sup>rd</sup> package requirement for companies which own assets to also operate them. However, addressing just these aspects is not sufficient. The ITPR project must also consider the alternative frameworks for achieving coordination between network owners especially at the design stage.

One framework is to have a central procurement of a central network design. This would seek to replicate the coordination that takes place within a transmission system operator but, rather than just procuring just the assets from an equipment manufacturer or turn-key contractor, the central procurer would also seek ongoing ownership services including maintenance and financing. This approach was proposed for the establishment of new offshore connection network. It is important that the ITPR project examines the reasons why customers of these networks have preferred to manage the design and delivery of these connections themselves. As well as issues about who should make the central decisions and how they are regulated, there are also important issues about how the central specification of the service is determined when many of the trade-offs must be informed by consideration of the delivery and operational aspects.

Another framework is that which has been followed in interconnectors (and some generation connections) in which network developers make proposals which can be directly valued by their customers. In this framework, developers decide on asset design details with equipment providers in order to make an attractive customer proposition and themselves decide whether to commit to delivery (e.g. effectively deciding between mutually exclusive developments). Ofgem have proposed arrangements whereby they can supplement the values placed by the immediate customers of these networks with revenues and liabilities that represent those costs and benefits falling on the wider set of customers and end-consumers. For this approach to address all the coordination issues identified in ITPR it will require extensive and high quality assessment of the system implications of alternative developments but the framework avoids the issues of centrally deciding designs, decoupling the design and delivery process, and distancing the remaining activities of transmission owners from the interests of their customers.

We think the second option is better suited to addressing the coordination issues associated with multiple purposes networks than the former.

Whatever coordination framework is adopted, choices will likely have to be made which support some projects over others: these decisions will have to be made or, at least, explicitly supported by Ofgem. As any such decisions will reflect assumptions about an uncertain future supply/demand match, they will have to be founded on transparent and well understood criteria and evaluated in a consistent way.

Some preliminary analysis of the above approaches is contained in an annex to this response. We hope this is helpful as the ITPR project progresses assessment of the overall frameworks for addressing the various issues identified.

## **Issue 2: European transmission activities**

In Europe, the centralised approach that exists within most member states means that there must be interfaces between these centralised decision making entities to facilitate the single internal market in electricity. In producing a framework for coordinating the various aspects of network service provision we think it is useful to recognise the different nature of the interfaces between design agencies (which will include policy makers such as national governments and regulators) , service providers meeting requirements of those agencies and integrated design/delivery providers meeting customer requirements directly.

*Question 3: How effective are the current arrangements in representing all GB transmission entities' interests within ENTSO-E?*

*Question 4: How material is the impact of these arrangements on representation of the GB transmission system developments in the TYNDP and other related European activities?*

The current ENTSO-E arrangements do not explicitly recognise the different types of participants in transmission service provision and their differing needs given their different roles. It can be observed that ENTSO-E arrangements are often geared towards facilitating interfaces between national central design entities as these are usually expected by central European policy makers to be the primary coordinators of network developments. We think there is some value in developing the arrangements to meet other needs but first the nature of those roles must be more widely recognised and definitions agreed.

## **Issue 3: Potential for conflicts of interest for parties undertaking transmission planning and delivery**

National Grid recognises the importance of business separation and ensuring that our roles which affect other network service providers are undertaken in an effective and unbiased fashion. We will continue to work with Ofgem to ensure our business separation and compliance arrangements are fit for purpose and we will also work to deliver sufficient transparency to satisfy other stakeholders and avoid misperceptions.

We look forward to hearing any further suggestions about how we should address these issues that might arise from stakeholder views to Questions 5, 6 and 7.

Further to the framework approaches identified above, we would highlight the different nature of the relationships between 1) our participation in the central design of services to be procured, 2) our participation in tenders for such centrally tendered services as a potential delivery agent, and 3) our participation as an integrated solution design and delivery agent in service areas which are directly valued and chosen by customers (e.g. in electricity interconnectors). We suggest the differences in these roles and their interrelationships is relevant to decisions about the appropriateness of business separation arrangements.

## **Issue 4: Multi-purpose projects**

*Question 8: Do you agree that these issues associated with multipurpose projects should be considered? What is the impact of the issues you identify as relevant? In particular how do they affect multiple purpose projects?*

We agree that there needs to be further work to explore the regulatory options for treating these projects.

Our thinking about the alternative ways in which network services can be efficiently designed and delivered, as briefly outlined above, has been informed in part by discussions we have had in our role as an independent network solution provider working with generation developers who desire network services using such multi-purpose assets. They, like offshore generators using offshore transmission

facilities, are very focused on ensuring that the network provides the cost/performance characteristics that are consistent with their business proposition. However, unlike UK offshore generators who have so far self-built their offshore connection assets, these generators desire partners at the outset who can help design and establish a solution that meets their needs, complies with EU unbundling requirements and will develop other business in order to share costs.

Multi-purpose network assets are amenable to a decentralised design and, due to the need to adopt new technology and commercial approaches, benefit from an integrated consideration of design and delivery. They are subject to competitive pressures both from their initial generation clients and in the longer-term due to other interconnector and connection opportunities. While coordination with onshore developments have so far not needed any discussions beyond those that take place in any approach for an onshore connection point, it is likely that wider discussions about coordination and European interactions will need to occur in the future.

*Question 9: Do the issues capture all the potential regulatory barriers? Are there any other issues to be considered in this area?*

We agree that the issues of licensing, access, charging and regulatory treatment do need to be explored further. We think examining these projects as a combined design and delivery offering that will provide access to different classes of customer in return for different types of service payments (as outlined above) would offer a suitable framework for addressing the identified licensing, access, charging and regulatory aspects.

#### **Next steps**

We have appreciated the willingness of Ofgem to engage in discussions about new frameworks for interconnector regulation and we welcome the opportunity to discuss, alongside our partners, our thinking on multiple purpose projects in the context of a real project case study.

Yours sincerely

*[by e-mail]*

**Paul Whittaker**  
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cc: Lewis Dale  
Peter Boreham  
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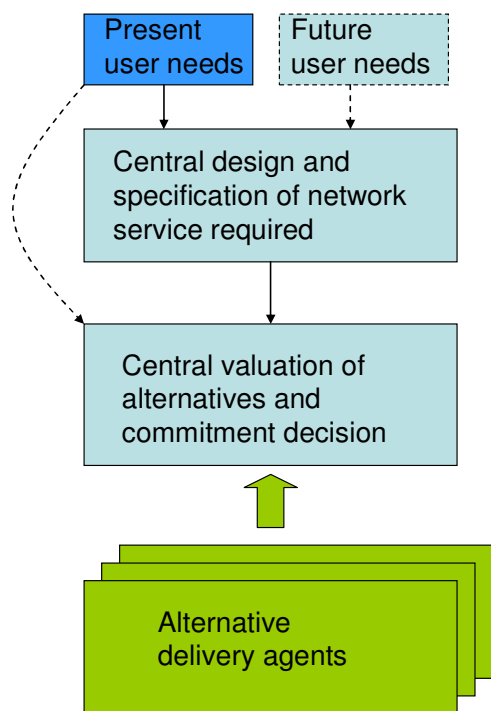
## Annex 1 : Preliminary assessment of coordination framework options

The approach pursued here is to consider the extent that it is desirable to distinguish and separately address:

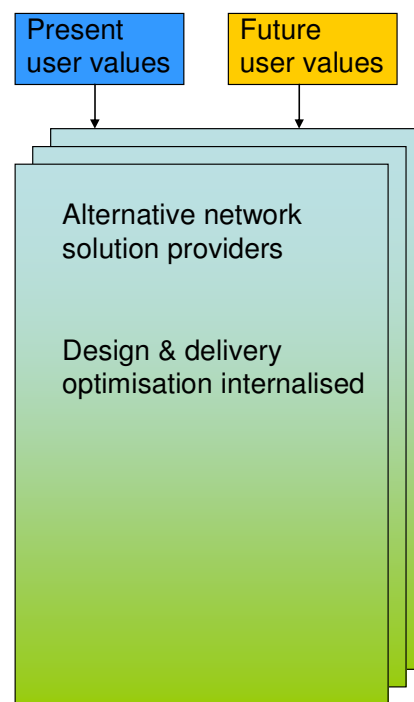
- 1) the design step - deciding on the most desirable network solution, especially in terms of the assets required, and committing to their establishment; and
- 2) the delivery step - realising such solutions by building and maintaining the required assets.

The following diagram shows the cases where (on the left) these steps are separated so that network assets can be delivered by a different entity to that identifying the desired design while (on the right) the design and delivery are not separated so that the specification of assets is part of the individual network developers' proposition for meeting customer needs and can be refined as the nature of trade-offs emerge in the delivery phase. The integrated design/deliver option does not imply that central coordination of interacting network providers is not required (it certainly will be) but that such coordination should not dictate the nature of the solution.

### Centralised network design and tendering



### Decentralised network solution provision



Electricity transmission examples of these approaches are as follows:

Separate (centralised) design and delivery	Integrated design and delivery
Proposed for OFTO build.	Offshore connections to date (designed and built by generators before asset divestment competition)
Proposed for competition in provision of onshore transmission.	Market driven interconnectors to GB (e.g. BritNed and others in development by various developers)
	Potentially, multiple purpose offshore networks.

The central design and tender approach is superficially similar to the process in which companies tender for equipment from manufacturers, but with the purchase extended to financing and maintaining the assets. However, this similarity risks distracting attention from the key policy issue of how a central design authority can become an informed buyer on behalf of customers and end-consumers for the specific services required. Arguably this issue at the heart of the ITPR project and the absence of an informed buyer able to adequately specify the required network service explains why offshore generators have so far sought to design and build their connections, controlling for themselves the detailed performance/cost trade-offs which are key to the success of their generation project.

A central design authority can become an informed buyer and tune the trade-offs in the service specification where:

- there is knowledge of user requirements due to a history of similar purchases (see PFI schemes for schools, hospitals and roads); or
- the specifying authority incorporates the knowledge of informed customers (see the central design of network reinforcements in South America).

These may not apply to the new demands for network in the GB electricity market and so alternative arrangements with the system operator as an agent in the central design authority have been discussed. The system operator can provide important information concerning the operability of assets and the interactions which will impact customers and consumers. The ITPR open letter understandably raises questions about the business separation arrangements that would need to be considered for such roles. However, difficult issues also arise concerning the role of the regulator in the central design approach. The granting of a delivery contract is a licensing function in which the regulator must simultaneously participate but also be able to provide appropriate oversight.

The alternative decentralised design approach leaves companies responsible and incentivised to explore design trade-offs and decide when they are sufficiently understood to support binding service propositions to customers. In this approach, coordination between projects is achieved by establishing regulated revenue streams and other obligations/conditions that reflect customer values including those affected by interactions with other networks.

The following table summarises aspects of these approaches:

Aspect	Separate design and delivery	Integrated design and delivery
Manner in which customer requirements expressed	The central design can respond to customer requirements however expressed (but may also incorporate other aspects not valued by customers).	Providers seek to attract customers by making attractive service/price offerings (e.g. the price for an appropriately tailored offshore connection)
Extent to which customer requirements reflected in detailed service specification	Limited to situations where high-level functional specifications adequate (e.g. repeat orders of standardised services)	Detailed design/delivery trade-offs can be made on a case by case basis.
Extent to which delivery agent responsive to customer	Depends on the extent the tendered specification reflects the full required service or focuses on intermediate outputs (e.g. just the provision of assets)	Depends on contract incentives (but not the division of responsibilities)
Nature of coordination between networks	Specified by central design	Incentivised by revenue restrictions and obligations.