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2 August 2013

Dear Charlotte,

## **Integrated Transmission Planning and Regulation Project: Emerging Thinking**

National Grid Electricity Transmission (NGET) welcomes the opportunity to respond to the recent consultation on emerging thinking for the Integrated Transmission Planning and Regulation Project (ITPR).

Updating the planning and regulatory framework for the overall GB transmission network to achieve the best outcome for consumers, while facilitating the delivery of the 2020 targets, is vital. The consultation correctly identifies the challenges associated with developing long-lived assets against a background of uncertainty about individual generation projects and the pace of technological advances.

Our response focuses on the public interest case for change, and considers both the National Electricity Transmission System Operator (NETSO) and England and Wales Transmission Owner (TO) perspectives. We support the development of a GB wide transparent and consultative enhanced planning role for the NETSO in order to drive co-ordination. We recognise concerns about potential conflicts of interest associated with such a role but are happy to consider additional internal information controls where necessary to mitigate these concerns. We agree that some controlled flexibility in delivery approach is likely to confer consumer benefit and argue that it is possible to develop clear criteria for the allocation of projects to different delivery routes.

### ***Driving network co-ordination***

Co-ordination of the GB wide transmission network development is key to driving benefit for the consumer whilst ensuring the economic and efficient delivery of the 2020 targets. Achievement will require the ability: to plan ahead, to anticipate system needs that benefit the overall system, to ensure timely solutions, and the development of infrastructure that is operable. The flexibility to evolve designs as existing and future customer requirements become clearer will be fundamental to harnessing economies of scale, maximising welfare benefits and minimising asset stranding.

An essential element of any approach to enhance co-ordination is the ability to drive through the identified design solution. All parties will need to be clear as to their accountabilities and those of others, particularly the role of the NETSO need case. Effective collaboration will be an important mainstay of the process of co-ordinating investment.

It is in consumers' interests that the responsibility for securing funding remains with those likely to build, procure, maintain and own the assets, with NETSO support as to the need case. To do so however requires an appropriate funding mechanism to be in place, particularly with respect to offshore anticipatory assets that deliver wider network benefit. It may therefore be more beneficial to bring the anticipatory gateway work underway as part of the offshore co-ordination work under the umbrella of the ITPR project.

### ***How best to achieve co-ordination***

Of the options identified with the consultation, the extension of the NETSO role represents the optimum approach. There are considerable synergies with our current role - including our technical and operational knowledge, the ability to link evolving customer requirements to the network development need case and the potential for regulatory incentives that drive efficient strategic network design. An extension across GB of the Network Development Policy (NDP) under RIIO would enable the identification of least regret investment across the wider transmission network in the best interests of consumers.

Retention of the current status quo is likely to deliver co-ordination only where specific project benefits (cost or timing) are identifiable. Specific project benefits may not always equal transmission investments that are in the overall best interests of the consumer or delivers the required flexibility needed to meet 2020 targets.

Whilst the Independent System Operator (ISO) and Independent Design Authority (IDA) type models confer independence on the SO, there are weaknesses to the approach including:

- the introduction of additional commercial and technical interfaces which will impact on GB consumer service (including timeliness ) and costs
- a diminution of any informed buyer status within the system operator due to separation from specific project delivery experience
- reduced scope for alignment of operator and owner financial incentives with those of consumers, and
- the presence of additional hand-offs in the design and delivery chain that will be reflected in the risk profile and the cost of capital of those involved.

### ***Identifying cross border capacity needs***

The current approach to cross border capacity with GB is developer led compared to one that is more Transmission System Operator (TSO) led in mainland Europe. With the EU Third package requiring greater co-ordination across European member states (e.g. Projects of Common Interest and the Ten Year Network Development Plan,) it is right the approach to cross border capacity is considered as part of the ITPR project.

The consultation identifies a spectrum of cross border capacity delivery options, from developer led to centrally identified opportunities. The developer led approach clearly has benefits and offers protection to consumers from the inappropriate identification of cross border requirements. A centrally led approach on the other hand helps create certainty but minimises developer input and is input assumption dependent. With decision on delivery approach, and therefore funding, driven by project specifics, it seems sensible to keep the various funding options open – purely merchant, cap and floor or fixed returns.

Co-ordination of design across Europe and within GB should support a range of delivery options. It should focus on the provision of timely market information with respect to interconnection opportunities between member states and the subsequent GB network implications of particular connection points. It may also include the provision of specific need case information with respect to the GB network to Ofgem, triggered as a result of an exemption or funding application, to ensure a wider consideration of consumer benefit.

### ***Conflicts of interest***

We recognise that extending the NETSO role raises concerns with some stakeholders in relation to the existence of conflicts of interest, not only with our competitive businesses but also between the SO and the TO within NGET. The recent consultation on the conflicts and synergies as part of the EMR debate concluded that whilst these conflicts exist, the opportunity for, and / or the likelihood of NGET being able to take any action to exploit them is relatively small. The consultation concluded that transparency and some specific licence obligations could mitigate the concerns raised. This is also true of any enhanced NETSO planning role under ITPR.

Transparency is key to mitigating against conflicts of interest that may arise from an enhanced NETSO role, and can be facilitated through consulted methodologies / processes for planning, challenge and review of inputs /outputs and greater information publication. The recently introduced NDP in England and Wales offers a good starting basis. Similarly, the introduction of further consultation opportunities through bodies such as the Electricity Network Strategy Group (ENSG) or the Future Energy Scenarios (FES) programme of work allow for industry scrutiny.

### ***Delivery approaches for transmission infrastructure***

A public interest case exists for making the best use of competition in asset delivery when the right opportunity presents. It should not however drive competition for the sake of competition. It should recognise that some asset / project types are more likely to suit a particular delivery model than others. The flexible approach identified within the consultation document therefore seems sensible.

Any such framework must create a stable investment environment, which is best delivered by establishing upfront clear criteria for allocating projects to different delivery models with any subsequent reallocation as an exceptional event according to clear pre-determined principles.

Ofgem will need to be clear as to whether the aim is to deliver innovation in design, construction or simply financing. This will help inform the consumer benefit discussion and determine the point at which a process for change is to be implemented. In doing so however, the application of risk across the end to end process must be carefully thought through with clear accountability at the various stages of the design, procure, build and maintain process. The key question is where the liability sits for issues arising in construction that were not evident at the design stage. This will have an impact on risk and therefore the cost of capital.

Answers to the specific questions raised within the consultation document can be found in Appendix 1 of this document. Two further appendices are also attached with a particular focus on the ISO / IDA, and the business separation arrangements in place within NGET.

We are happy to discuss our views contained within this letter further should that be helpful. For further details, please contact Louise Wilks ([louise.wilks@nationalgrid.com](mailto:louise.wilks@nationalgrid.com)). Our response is not considered confidential. We are therefore happy for it to be placed on the Ofgem website and shared wider for the purposes of the ITPR project.

Yours sincerely,



**Mike Calviou**  
**Director, Transmission Network Service**

## Appendix 1: Questions raised within the ITPR: Emerging Thinking consultation

### **1. Do you think we have appropriately characterised the future challenges to network development? Where do you see the main challenges? What are the long term strategic and sustainability implications of these challenges?**

The consultation document characterises the issues facing transmission network development within GB under four key headings:

- network co-ordination;
- the development of cross border capacity;
- asset delivery regimes and synergies; and
- conflicts associated with an extension of the NETSO role.

These neatly embody the challenge of how best to achieve the right network for GB into the future and the likely regulatory framework development required.

Timely implementation will be important to the delivery of a wider transmission network that provides the best outcome for consumers. With a number of projects already entering the development phase, it is important that development of transmission capacity does not present an obstacle to the delivery of wider energy policy goals. Clear and timely regulatory policy direction is required to remove the regime uncertainty and drive network delivery that is in the best interests of present and future consumers.

### **2. Are there any of the review areas under ITPR more relevant than others?**

The existing regulatory framework is being challenged given the number and innovative nature of projects seeking connection to the GB transmission system. All of the areas identified within the consultation therefore are relevant to the delivery of a flexible GB transmission network into the future.

Not all aspects identified however require simultaneous implementation, with co-ordination more important at this time than the implementation of the overall delivery framework. Different implementation strategies and timelines should be considered. With a number of innovative projects in the early design phase, actions to ensure the co-ordination of the network requirements should be considered first.

### **3. What are your views on the options for system planning discussed in this chapter? Are there other approaches to system planning that you think we should be considering within the ITPR project?**

From a NETSO perspective, we consider that greater co-ordination across TO / developer networks will be essential in delivering the best deal for consumers, thereby ensuring transmission does not become an obstacle to the delivery of wider energy policies. Doing so requires the ability to plan ahead, anticipate strategic system needs such that transparent solutions are timely, consider the operability of the network and provide clear cross border requirements. Any outcome needs to deliver a network that is overall efficient but is able to evolve. Flexibility to evolve designs as customer requirements become clearer will be key to minimising not only asset stranding but also operational costs.

The consultation correctly identifies an interaction between depth and breadth of system planning, against which a spectrum of options are available. Retention of the status quo is unlikely to drive further network co-ordination given the different drivers, objectives and competition between the parties involved. Co-ordination only occurs where developers will directly see benefits arising that are

sufficient to overcome their individual concerns. The development of a flexible transmission system that can cope with all the requirements placed on it as a whole will generally require consideration of a wide range of stakeholders, both representing existing and future interests.

At the other extreme are options such as the ISO or IDA approach, with the main benefit identified by the consultation being the achievement of independence of planning decision and the alleviation of SO – TO conflicts. Pragmatism must feature in any decision to alter the balance between the SO and TO with the appropriate consideration of the true costs and benefits to the consumer. Academic economic theory is not sufficient to do this without consideration of the practical realities.

We note that the consultation provides limited consideration of the costs and weaknesses inherent in the ISO and IDA model such as:

- the introduction of additional complex interfaces;
- the required competence and expertise;
- incentives that are dominated by reputational aspects that drive a tendency towards conservatism in design;
- difficulty in aligning the interests of an ISO / IDA with that of consumers given the limited ability to incentivise its performance without a substantial balance sheet; and
- a need for a new licensing regime / legislation to bring such a body into force and the compatibility of such a regime with the requirements of the EU Third Energy Package.

We agree with the analysis undertaken by Ofgem and have provided further thinking on the benefits of retaining an integrated Transmission System Operator (TSO) in England and Wales within Appendix 2.

The enhanced NETSO option (within the combined TSO in England and Wales) therefore seems the most appropriate means of achieving the desired outcome with the right degree of pragmatism. The model allows for the relevant TO / developer to continue to drive forward the development of their networks / projects but in a co-ordinated manner. These parties are best placed to understand the implications for their network, retain the necessary asset management and technical expertise and should ultimately be responsible for any funding request. The NETSO would support this process through the provision of the wider system need case.

More thought will be required with respect to the interface between the NETSO and TOs in terms of ensuring the asset build proceeds in line with identified need case. This could be achieved by ensuring that any need case developed by the NETSO carries sufficient weight as part of any funding request. Any request for funding for a design other than that in the need case would be required to further justify why a deviation is in the public interest.

**4. Do you think that it would be beneficial to strengthen the role of a co-ordinating body working with relevant parties to facilitate efficient decision making? In what areas could this co-ordinating body add most value to the process?**

Co-ordination of GB wide transmission network development is key to driving benefit for the consumer whilst ensuring the economic and efficient delivery of the 2020 targets. Achievement will require the ability: to plan ahead, to anticipate system needs that benefit the overall system, to ensure timely solutions, and the development of infrastructure that is operable. The current approach relies on voluntary co-ordination between parties, often with different drivers / objectives. This has tended to focus on the delivery of more localised benefits which meet individual requirements rather than drive a flexible overall transmission system that benefits both current and future consumers.

Similarly, without wider co-ordination, clarity as to what constitutes efficient investment in the context of a continually evolving overall transmission system has been lacking and has often led to different investment approaches within TO footprints. Inconsistency of approach to design potentially causes future problems through limiting flexibility of the overall system, may reduce asset usage and increase operational costs as the GB system becomes more difficult to operate.

Co-ordination offers the most value when considering national and regional boundary capabilities given the ability to drive investments that suit multiple parties over a number of years that may require more innovative solutions. This should help to avoid unnecessary delays, support anticipatory investment, and reduce duplicative expenditure. To do so however will require the strengthening of the role of the co-ordinating body.

**5. What are your views on the (real or perceived) conflicts of interest that could occur from parties holding dual responsibility in system planning and asset delivery and ownership? What are your views on potential options for institutional arrangements, separation and transparency measures to mitigate this?**

We recognise that extending the NETSO role raises concerns with some stakeholders in relation to the existence of conflicts of interest, not only with our competitive businesses but also between the SO and the TO within NGET. Transparency is the key to mitigating against conflicts of interest for both. This will ensure that the NETSO is clearly seen to be operating in an appropriate manner in its system planning role.

In the event that it should appear that any additional regulatory requirements are appropriate for NGET, these should be clearly defined and focussed on particular information flows that may give the industry cause for concern. An example of where such a requirement has been used in the past is the targeted information restrictions which NGET has long been subject to in the context of dealing with concurrent requests for a possible connection both inside and outside NGET's transmission area (i.e. England and Wales)<sup>1</sup>.

A targeted approach such as this would lessen the likelihood of unintended consequences arising which would impose inefficiencies on system operation and transmission owner activities and indirectly increase costs for consumers. It would also be consistent with the approach that DECC and Ofgem have sought to take to address the issues arising in relation to the synergies and conflicts that arise in the context of NGET taking on its new role as the EMR Delivery Body.

**Ownership separation of the SO and planning functions**

Further separation of the SO and TO licences, whether through the introduction of an ISO / IDA or by other means, will require more meaningful intervention to clearly define SO and TO obligations and a re-visit of existing price control / funding arrangements. Neither is it clear that a move to separate the SO and planning functions is legally available under the EU Third Package, with NGET is "responsible for" activities, including "ensuring the long-term ability of the system to meet reasonable demands for the transmission of electricity" and "developing ... reliable and efficient transmission systems" (see Article 12(a) of Directive 2009/72). It is questionable whether an approach to planning that legally removed this activity from NGET would be consistent with the requirements of the EU Third Package.

We would suggest that Ofgem to take a pragmatic approach to the issue of conflicts under the ITPR project.

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<sup>1</sup> These rules are set out in special condition 2B (Restriction on the use of certain information) of NGET's licence and are designed to deal with the specific issues that arise in such a case.

### ***A Consistent Approach to Conflicts of Interest***

In our role as NETSO, we take great care to maintain confidentiality of customer information (in relation to e.g. connection applications) in accordance with the requirements of our licence, the codes and the Utilities Act (section 105). The role of infrastructure developers not in receipt of a transmission licence (e.g. offshore or interconnector) raises particular concerns in relation to data confidentiality. These parties are developing transmission network to connect their projects to the GB transmission system. To be able to undertake this task effectively, they require details of the GB transmission system which inevitably includes data regarding their competitors.

We have significant concerns regarding the conflicts of interest that apply to such parties developing transmission networks in the absence of a transmission licence. Appropriate and transparent data confidentiality and business separation arrangements in relation to generators developing offshore transmission will be as important, if not more, as the arrangements that apply between either NGET and its affiliates, or the SO and TO functions within NGET.

### ***6. What are your views on potential future approaches to planning interconnection? Should there be increased central identification of potential interconnection that could benefit GB consumers?***

The options identified within the consultation focus largely on the different approaches to interconnection delivery and not overall co-ordination of cross border capacity. The development of a semi regulated approach as detailed in the recent NEMO consultation suggests that an evolution the pure developer led approach is already in progress.

### ***Options for delivery of interconnection capacity***

The consultation identifies a spectrum of cross border capacity delivery options, from developer led to centrally identified opportunities. The developer led approach clearly has benefits and offers protection to consumers from the inappropriate identification of cross border requirements but may not adequately account for social welfare aspects such as security of supply. A centrally led approach on the other hand helps create certainty but minimises developer input and is input assumption dependent. With decision on delivery approach, and therefore funding, driven by project specifics, it seems sensible to keep the various funding options open – purely merchant, cap and floor or fixed returns.

### ***The NETSO role***

Whilst the delivery debate plays out, thought should also be given to a NETSO role in line with the enhanced SO proposals within the consultation. As such, the NETSO role should focus on the provision of market information regarding interconnection opportunities between Member States, information regarding the opportunities within the GB transmission system for accommodation of further interconnection, as well as the provision of specific project need case advice to Ofgem triggered by a regulatory funding decision or EU exemption application request.

At a European level, the identification of interconnection opportunities between Member States, coupled with high level regional impacts, is being undertaken as part of the ENTSO-E work programme and will form the basis of the 2014 Ten Year Network Development Plan (TYNDP). This will include cost benefit calculations to support proposed levels of interconnection and relevant analysis to support the Project of Common Interest (PCI) enduring process.

At a more regional level, we also expect to provide greater information through the Electricity Ten Year Statement (ETYS) regarding the interaction with the GB transmission system thereby providing further detail with respect to interconnection opportunities.

In addition, the NETSO could also provide specific need case information to Ofgem on the GB transmission system impact of an interconnection application, such that this can be considered within any exemption or funding arrangement triggered by a developer's application to Ofgem. This is

perhaps particularly relevant given interconnector developers receive no cost signal through Transmission Network Use of System charges (TNUoS) to indicate the consequences of their choice of connection to the GB transmission system.

### ***Enhancing co-ordination***

Increased coordination, regardless of the delivery mechanism, will be required to deliver cross border capacity that is in the best interests of the consumer. Some form of interconnector forum that engages with all relevant parties and a firm obligation / incentive on developers to coordinate is required. The SO-TO Code (STC) provides a framework for NETSO and licensed TSO engagement and coordination but focuses on ensuring that the NETSO is able to offer a connection to an applicant seeking to connect to or use the National Electricity Transmission System (NETS).

It is for wider consideration as to whether the STC should be extended to include interconnector licensees, although not all procedures within the STC will be applicable and hence a review of the current framework will be required. Similarly, further thought is required with respect to those offshore and interconnector developers not yet in receipt of an OFTO or interconnector licence. It may be possible to drive greater design co-ordination in these instances by requiring parties applying for connection to the NETS to be in receipt of a Licence ahead of application. The relevant licence could then either point to section 9 (2)(a) of the Electricity Act which requires transmission licensees to develop a co-ordinated system of electricity transmission<sup>2</sup>, or, where section 9 is not applicable (for example because the system in question is an interconnector), the licence could contain specific obligations regarding cooperation and coordination.

### ***7. What are your views on the options for delivery of transmission assets discussed in this chapter? Are there other options that you think we should be considering within the ITPR project to address the delivery drivers and challenges identified?***

The challenges of delivering a de-carbonised electricity sector means that innovative transmission infrastructure solutions are being identified to help minimise onshore reinforcement issues. Many will require co-ordinated R&D, investment in innovation and possible higher costs associated with the first mover on new technological solutions. Not all such solutions fit readily into the existing onshore, offshore and interconnector frameworks and we recognise the potential benefits if additional flexibility is included within all regulatory regimes to allow for a change in delivery model.

However, we think any such flexibility should be used sparingly, and it may be possible to analyse the elements of most projects into the applicable licensing regime as a relatively simple question of fact. This would not preclude flexibility around the choice of delivery approach (i.e. competitive provision or not) for particular projects or elements of those projects. Any licences could then be granted at the outset and in a manner that deals with the specific facts of the individual case. The form of technology or multi purpose nature of the asset in question should be largely irrelevant in this decision, and should focus on intended purpose.

This approach would have the following benefits:

- it can be implemented without the need to change the existing regime radically and therefore brings the advantages of speed of implementation;
- it avoids the risks that are inherent in any re-design of the licensing regime;
- it builds on the fact that all the individual licensees would be TSOs (whether as OFTOs, incumbent transmission licensees or interconnector licensees) and so would be consistent with the approach envisaged in the Third Package of EU legislation of TSOs being required to coordinate their development activities;

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<sup>2</sup> Section 9(2)(a) refers to holders of transmission licences and makes no reference to interconnectors. However in the context of a single European market overall consumer welfare will be best served if the entire network (i.e. the interconnection and the transmission systems at either end) is designed and delivered in an economical, efficient, and coordinated manner. This is another area where the legislation has not kept up with the changing environment initiated in particular by the EU Third Energy Package.



- it does not inhibit the ability to introduce competition in relation to the licensing of any individual element of the project; and
- it avoids any suggestion that assets should transfer between different licensing regimes (as envisaged as a possibility in the consultation). This has a clear benefit for investors in relation to regulatory certainty and avoids the creation of a very significant disincentive to investment in efficient systems that could arise as a result of the threat that ownership of the assets might be transferred at some later stage.

We would be happy to discuss our thoughts on this further.

In respect of asset delivery and subsequent ownership, any decision to deliver a particular asset via a route other than its licensing default must have a clear trigger and as such transparent, consulted criteria will be important in this respect. Regardless of the delivery route however, it is imperative that appropriate investment is delivered in a timely manner. Further consideration as to when to introduce an alternative approach will also be needed, and acceptance may be required that some projects will be out of scope given their relative position in the design and delivery chain. Retrospective changes to the delivery model of an asset will need to be priced in terms of the additional risk generated and either translated into the cost of capital of a project or recompense agreed. There is also a risk however of confusing the licensing regime with the choice of delivery mechanism. Legal clarity will therefore be required as to the ability of Ofgem to exercise discretion between the various regulatory frameworks.

**8. Do you think that it would be beneficial to introduce some flexibility in the existing regimes to provide for alternative delivery routes, where this is in the interests of consumers? If so, what criteria could be used to determine the delivery route for an investment?**

The introduction of additional flexibility into the existing regimes to allow for alternative delivery vehicles would offer consumer benefit and as a TO, we welcome the additional change. We have assumed that any process to determine the delivery vehicle and associated TO will consider whether the necessary asset, contracting and project management skills are available and proven, and will occur in a small proportion of overall assets. History shows us this is essential for ensuring value for customers in delivery of major infrastructure projects. We have therefore concentrated on the criteria used to decide whether to use a different delivery route than the default approach.

Any criteria to determine the delivery route for an investment should be clear, concise, measurable, consistently and transparently applied. They should be applied at an early stage to give parties clarity over their roles and responsibilities and should be enduring. Furthermore, they should ensure a level playing field for transmission investment across all TOs that seek to deliver the best outcome for the consumer, including:

- demonstrate a clear, measurable cost benefit analysis (for a range of appropriate scenarios) for present and future consumers (costs to achieve, planning implications, technology, capex, delay etc);
- should not result in delay to project connection dates or costs for the consumer as a result of any change in delivery approach;
- should be clear on the timing for holding any tender process and the activities included therein. For example, consent, procurement and construction should be kept together given the difficulties in divorcing accountability / responsibility for these activities;
- should not result in delay to project connection dates or drive additional planning complexity or costs for the consumer as a result of any change in delivery approach;
- a clear articulation of all risks / rewards and accountability across the different elements of the design and delivery chain – i.e. clearly identify the liabilities at all stages and the responsible party;

- consideration of the impact on generation project risk and associated project delivery timescales ; and
- a clear decision on what benefits are being sought and where when moving away from the default approach – design innovation, delivery innovation or the cost of financing.

The characteristics of projects which will be most suitable for competition are:

- where the default TO is not able to demonstrate the above criteria for a particular project;
- it is possible to identify a clear need and scope with the required lead time that allows for a competitive tender process without adverse project delay;
- a project such as a radial connection where the separation of ownership from assets that interface with it does not create excessive additional complexity in both co-ordinating investment and operations; and
- it is sufficiently large in scale to warrant the consideration of an alternative delivery route and therefore likely to deliver consumer benefit (i.e. transaction costs are small as a proportion of the overall project cost).

While the characteristics of projects most suitable for franchise delivery are:

- where the default TO continues to perform well for customers;
- the considerable complexity in the interactions with other assets makes the cost of managing these interactions excessive (e.g. assets meshed within an AC network);
- there is a requirement driven by multiple interacting customers, leading to the need for flexibility and re-evaluation in scope over the project life cycle;
- where there is uncertainty regarding the timing of delivery requiring the design to be continually optimised throughout development; and
- medium / smaller scale projects.

We would be happy to discuss these further.

**9. If we pursued additional flexibility in application of the regimes, what role should discretion play in identifying the delivery route for a particular investment?**

In the absence of perfect foresight and therefore regulatory design, some discretion in asset delivery routes is inevitable. That said the process surrounding the delivery of asset delivery routes should seek to minimise this as much as possible. Discretion will introduce further regulatory / financial risk into projects and will therefore need to be factored into the cost of capital.

The majority of delivery routes should therefore be decided upon through the use of clear, upfront criteria that have been subject to wider consultation.

**10. Do you think that the case for change to current arrangements to enable more integration and co-ordination is material now, or may become so in the future? If the latter, when?**

The case for change to the current arrangements is evident across much of the GB transmission network. We are the counter party to a number of contracts which require co-ordination to varying

degrees due to the degree of congestion within a particular part of the transmission network, as well as because projects push pushing the boundaries of the existing regulatory regimes.

In the Irish Sea region for example, we have contracts in place to connect parties into our network in the North and South of Wales that include nuclear, onshore wind, offshore wind and Irish Wind, with connection dates that may or may not be altered by the developer given their project specifics. The current approach means that the amount of co-ordination has been limited. A co-ordinated solution in this area is paramount to ensuring the best outcome for the end consumer and could deliver savings in the region of £3bn. A similar situation is evident in other parts of the GB network.

Project complexity is increasing, with clear direction needed as soon as possible to avoid the prospect of aborted costs by developers and TOs. The longer a decision is abstained from, the likelihood of increasing cost, level of disruption or an inability to meet contracted dates with a co-ordinated design becomes more probable.

It is worth noting that early co-ordination should not materially increase the risk of asset stranding given the continual review of designs and preferred options as technology, consenting considerations etc become more certain. Any decision to proceed to construction should be taken as late as possible in the process.

**11. What are your views on our emerging thinking to consider a further enhancement of NGET's role as the SO in system planning to provide for a more co-ordinated and holistic approach across the GB system ?**

Of the options identified with the consultation, the extension of the NETSO role represents the optimum approach. There are considerable synergies with our current role - including our technical and operational knowledge, the ability to link evolving customer requirements to the network development need case and the potential for regulatory incentives that drive efficient strategic network design. An extension across GB of the NDP under RIIO would enable the identification of least regret investment across the wider transmission network in the best interests of consumers.

***Extending the Network Development Policy approach across GB***

The NDP is an agreed NGET methodology (following extensive consultation) for investment in Strategic Wider Works and boundary capability required to develop an economic and efficient transmission system which meets requirements of our customers in England and Wales. It is an annual process that utilises the scenarios produced through the Future Energy Scenarios (FES) consultation process and assesses the network boundary capability. The boundary assessment and proposed investment options to increase boundary capability and any associated Strategic Wider Works are published in the ETYS for subsequent consultation and identification of any potential market solutions.

The NDP takes the FES scenarios and case studies, and using the underlying data, assesses the major boundary capability requirements within England and Wales for any required increases to meet the Security and Quality of Supply Standard. Where additional capacity need is identified, the TO develops a range of reinforcement options for assessment by the NETSO using a consulted least regret methodology. This methodology takes in to account both the cost and time to deliver the options for reinforcement. It balances the risk of investing too early (including inefficient financing cost risk and an increasing stranding risk) with those of investing too late (e.g. inefficient congestion costs). The NDP is a transparent approach that addresses the uncertainty in developer's investment in projects and demonstrates that our wider transmission system investments are economic and efficient.

The same approach could be applied to drive co-ordination across GB, with the NETSO identifying boundary capability, any major projects required and requesting reinforcement options from the relevant TOs or infrastructure developers. A GB NDP approach would be used to review the reinforcement options, demonstrating the co-ordination and co-operation required between TOs / developers. Onshore TOs, offshore TOs and interconnector developers would cooperate on issues

such as integrated design of transmission systems and onshore landing options. This would assist in demonstrating the overall investments in transmission capability are economic and efficient in the best interests of consumers. Under this approach, the NETSO would produce the need case for the TOs / developers to support their application to Ofgem for funding.

Our views on the opportunity for conflict between the SO and TO within NGET have been explored more fully in question 5. In summary however, we understand the concerns expressed by wider stakeholders and would advocate the introduction of transparency, consulted methodologies, inputs and challenge / review on proposed infrastructure solutions across the SO and TOs. We will also be publishing the results of the NDP analysis as part of the ETYS process.

We would be happy to discuss additional measures where required.

**12. What are your views on the emerging thinking that introducing further flexibility and applying criteria to designate whether an investment should be delivered by incumbent delivery or competitive selection could address many of the challenges and drivers identified?**

We support the introduction of further flexibility into the regulatory regimes to enable the right delivery route for particular types of asset. In the first instance, Ofgem should determine the role of competition and be clear on the benefit to consumers. Any criteria to determine the delivery route for an investment should be clear, concise, measurable and consistently and transparently applied which ensures appropriate risk is allocated. Furthermore, they should ensure a level playing field for transmission investment across all TOs that seeks to deliver the best outcome for the consumer.

**13. What other options should we take forward for consideration in the next stage of our work on ITPR?**

The project as currently scoped covers the main issues prevalent in planning the GB transmission network. Given that any decision on SO and TO responsibilities will also require the relevant funding mechanisms to be in place, it may be beneficial to bring the anticipatory gateway work which is underway as part of the offshore co-ordination work under the umbrella of the ITPR project.

**14. Do you have any views on our approach and timetable for our work on ITPR or on interactions with related areas?**

The approach outlined in the consultation document seems sensible. Early decisions in respect of policy direction are required to ensure co-ordination can be applied across GB given the number of projects currently within the design phase. Delays could result in increased project uncertainty ultimately manifesting itself in increased financing costs. It may also result in cost to the end consumer as a result of project delay or a decision to pursue a more project specific approach to particular transmission needs. Given this, a staggered approach to implementation should be considered with co-ordination given priority.

**15. Do you have any other views on the ITPR project not covered by these questions?**

The questions within the consultation document cover these issues raised as part of the ITPR project.

## Appendix 2: Further consideration of the ISO / IDA approach

We note that the consultation provides limited consideration of the weaknesses inherent in the ISO and IDA model. The following seeks to provide more detail on both the benefits and weaknesses of these approaches and therefore by association covers the benefits conferred by an integrated TSO.

### The features of an ISO / IDA

Traditionally when commentators talk about an ISO, they mean organisational change that separates the SO function from any TO or generation interest – affiliated or otherwise. Independence is evident in all decision making and will to varying degrees see the transfer of planning and design responsibility, offering the following benefits but also weaknesses.

Benefits	Weaknesses
<ul style="list-style-type: none"> <li>• Removes perceived conflicts of interest</li> <li>• Unbiased 'SO' planning decision making</li> <li>• Co-ordination of all system planning across networks</li> <li>• Not distracted by TO activity</li> <li>• Greater transparency of information–</li> </ul>	<ul style="list-style-type: none"> <li>• Achieving informed buyer status – introduction of barriers to information exchange, not informed by TO activity</li> <li>• Difficulties in creating financial incentives</li> <li>• Difficulties in optimising capital and operational trade offs</li> <li>• Additional interfaces and transaction costs – need to codify arrangements SO &amp; TO</li> <li>• Need to clearly articulate risk / reward trade off – tendency toward a cautious approach as creates split between decision maker and risk taker</li> <li>• Primary legislation (EU &amp; UK) required – apparent inconsistencies with 3<sup>rd</sup> package</li> </ul>

These aspects are discussed in more detail below. Other than as part of the table, the benefits are not discussed in any detail as part of this appendix.

### Achieving an informed buyer status: Barriers to information exchange

The ISO / IDA model limits the ability to be an informed buyer. For the system operator, the procuring of services (including detailed designs) from other transmission owners requires up to date information on asset performance / cost trade-offs often on specific assets, including:

- establishing reasonable maintenance/construction access outages and efficient costs for subsequently adjusting durations or emergency return to service times;
- the asset life and long-run cost implications of using cyclic / short-term / dynamic ratings in various scenarios;
- understanding the development of asset parameters such as historic cyclic / short-term / dynamic ratings, the immediate risk of emergency conditions and the scope / availability of de-loading actions;
- the need for procurement of enhanced control capabilities on assets; and
- understanding the implications of offering non-firm system access.

The separation of the SO activity from that of the TO will over time diminish that knowledge associated with asset management experience. As a result, the effectiveness of the SO functions begins to diminish or the efficiency of transmission asset manager decisions are impacted as a result of reduced asset information underpinning system operation decisions. A view that is underpinned by the fact that the SO is better able to access better asset flexibility from NGET's assets than those assets whose performance envelope is codified in the SO-TO Code (STC) given the difficulties in codifying reasonable performance / risk trade-offs. TOs tend to be more risk adverse to ensure the integrity of

their assets. As the ISO / IDA no longer has practical experience of the TO function, it will become increasing out of touch regarding what types of service or solutions are available, the generic or plant / asset risks that apply and will heavily rely on the TO providing necessary information. The incentives underpinning the TO will mean they wish to ensure the integrity of their assets and include a risk premium when offering such services that will increase overall costs to the consumer.

In the future, effective information exchange between SO and TO will have greater importance in driving innovative network technologies / designs<sup>3</sup>. In the future SO/TO communication channels will be key in maintaining system reliability and needs to be carefully designed and trialled.

### **Incentivisation**

ISO / IDA and TO incentives are likely to be very different. They will be framed by the regulatory regime as well as by the activity, the risks, and rewards that each party faces. For example, in the absence of a combined TSO entity, an independent TO will seek to minimise risks and costs associated with its asset management while maximising its profits under the regulatory regime that applies to it. There is no inherent incentive on a TO to stretch plant performance, operational / maintenance regimes, or be flexible regarding outage placement, outage durations, emergency return to service schemes. All these things are costly or risky and will only be undertaken if the TO perceives them to be in its interests.

An ISO / IDA regime therefore requires negotiation between the SO and the TO over the service enhancements being sought and the options / prices that a TO is willing to offer. There is likely to be considerable information asymmetry between the parties and their respective positions will be dependent on the incentives they face. While it may be possible to develop a menu of services and costs, many situations will require a more bespoke approach.

The prospect of double incentivisation also occurs across the SO and TO and could lead to consumers having to fund certain risk premiums twice, thereby reducing the benefits available for sharing with consumers. Especially, as it is difficult to unpick the risk and reward associated with the SO and TO activity.

Similarly, any separation of SO and TO activities would remove the scope for the TO's balance sheet to be used to underpin an ISO / IDA incentive scheme. A desire to financially incentivise such a body would require the creation of a substantial balance sheet. ISOs / IDA are more risk averse given their incentives are more likely to be reputational. They are therefore less likely to be willing to take financially risky decisions such as entering into agreements with generators to manage congestion due to the risk that change generators' outage plans, or in the TO's outage plan could render those contracts "out of the money" and inefficient. A risk-averse approach is all the more likely in the case of a not-for profit structure.

The new RIIO-T1 price control and the SO Incentive schemes provide a framework for NGET to appropriately balance investment and operational approaches to meet customers' needs. While historically, the misalignment of SO and TO incentives could be seen to encourage investment over operational solutions, this was addressed under RIIO by the equalisation of incentives and the sharing factor of 47%. Careful consideration and time was given to the development of the RIIO incentives to address any perceived incentives to "over invest" (or equally to "under invest") and this would have to be reconsidered if an ISO model was adopted.

### **Investment vs. operational trade offs**

The ability to access asset flexibility with ease provides value to end to consumers without the need for building additional assets, planning or further environmental consideration is a further benefit of an integrated TSO approach. It is not clear that such trade offs would be quite so easy under an ISO / IDA model without the need for complex contractual frameworks.

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<sup>3</sup> GO2020 consultations as well as smart network and targeted security items in NGET's RIIO business plan all indicate the need for increasing levels of effective information exchange.

Detailed below are some of the cost savings delivered for consumers in recent years as a result of the ability to trade off investment vs. operational decisions in England and Wales.

- £11m saving in operational costs through the adoption asset risk positions (which might have overloaded remaining cables) during a cable fault affecting a generation site;
- specific reinforcement designs / plans to reduce the constrained-on operation of two northerly based power stations by £10m p.a. over the relevant outages;
- £15m saving in operational costs as a result of the introduction of temporary line arrangements in the Thames Estuary;
- £2m of operational savings to date following the introduction of Met Office Rating Enhancement arrangements and Circuit Thermal Monitoring;
- £2m operational saving following the introduction of accelerated working arrangements on cable oil leaks affecting a generation site (together with dynamic ratings), thus reducing outages from 4 weeks to 15 days; and
- £4m constraint cost savings as a result of hot wiring and temporary bypass arrangements at a generation site, further supplemented by the re-scheduling of the necessary works.

From the asset ownership side, NGET internalises asset reliability effects on consumers through network reliability output measures and exposure to the system operator's Balancing Services Incentive Scheme (BSIS). Such exposure has driven a number of asset owner innovations which might not have been possible if an ISO / IDA model had previously been adopted given the split of risk and reward:

- the introduction of live line working from helicopters on high voltage overhead lines and options for enhanced weekend / shift working to reduce the number of network access outages and their durations;
- the development of temporary line facilities to enable bypass circuits to reduce critical outages;
- the development of flexible / relocateable voltage support equipment to reduce constraint exposures following power station closure announcements;
- the introduction of new conductor systems with a range of capability / capital cost / lifetime cost trade-offs. Risk based assessments of hot-wire opportunities have also been implemented;
- the development of transmission network output measures to ensure asset stewardship is aligned with the delivery of the overall network service;
- the establishment of work-arounds for equipment issues where there is a risk of hazardous catastrophic failure to ensure SO, customer connection, and system constraint issues are minimised; and
- the formulation of strategic asset management plans to ensure transmission asset health information is available for minimising the lifetime cost of asset management but also to deliver best value in terms of the overall network service.

The majority of innovations listed above have required developments across the broad interface between system operation and asset control. In the future, the opportunities for use of smart technologies and flexible/controllable network devices will mean that there will be more scope for innovation in this area and, conversely, more risk if the SO to TO interface is codified before the full range of efficient functionality has been determined.

### **Transactions costs**

TO – SO separation is likely to give rise to additional transaction costs due to increased codification of designated system operator and transmission owner activities. In addition, the difficulty of being able to adequately capture all activities / transactions and the likelihood of codification will reduce the scope for innovative activities that were not considered at the time of writing, cannot be under estimated.

Any premium operational technique is likely to require extensive system operator information to establish the business case for specialist new facilities / capabilities and lead to an increase in transaction costs to make such services available. Finally, risks such as asset damage, reductions in asset life, consequential impacts of changes to outage programmes that may put other customers (possibly affiliated to the TO) at risk, resource and safety implications of initiatives such as live line working, are not codified within the SO – TO code and the ability to cover such risks adequately for the amount of assets on the network now and in the future will be a considerably difficult.



### Appendix 3: NGET's approach to Business Separation

National Grid Electricity Transmission (NGET) is subject to a number of regulatory and statutory rules which govern the way in which it undertakes its business. As a subsidiary company of National Grid plc, some of these rules relate specifically to separation from other companies within the National Grid group. They set out the framework for fair business conduct, control of confidential information and separation of finance, and together provide a robust and effective protection against inappropriate behaviour by NGET in its roles as NETSO. These can be summarised as follows:

#### The requirements

Like any other company, we are subject to the requirements of Competition Law in the form of the Competition Act 1998. Chapter 1 of that Act prohibits National Grid from entering into anti-competitive agreements, while Chapter 2 prohibits relevant National Grid companies (which includes NGET) from abusing a position of dominance in a relevant market.

These rules apply in addition to the specific regulatory regime applicable to NGET and, through the possibility of very substantial fines, provide a very strong disincentive to inappropriate behaviour by NGET or any member of the National Grid group of companies.

#### *Electricity Act 1989 (EA89)*

art 1 Section 9 of the EA89 requires NGET, as a holder of an electricity transmission licence, to develop and maintain an efficient, co-ordinated and economical system of electricity transmission and to facilitate competition in the supply and generation of electricity. It also, through implementing the Third EU Energy Package, prohibits NGET and its group companies from carrying out any activities that would require either a generation or supply licence. NGET is prohibited under the EA89 from holding an Interconnector Licence and therefore cannot participate in the operation of an interconnector itself.

#### *Utilities Act 2000*

Section 105 applies to NGET as the holder of an electricity transmission licence and prohibits us from disclosing information obtained in the course of its licensed activities and which relates to the affairs of individuals or businesses to any third party including other companies in the National Grid group. This obligation lasts for as long as the person to whom the information relates carries on business and is not limited to confidential information: rather it extends to all information that NGET has obtained by virtue of its licensed activities. This obligation is backed up by criminal sanctions for breach.

#### *NGET's Electricity Transmission Licence*

NGET's transmission licence controls the way in which it can operate, setting out rules relating to its financial management, regulatory accounts, management of information and business separation. This includes an over-arching obligation on NGET to conduct its transmission business in such a way to secure NGET, its affiliates, any users of the transmission system and other transmission licensees obtain no unfair commercial advantage (Special Condition 2C). These obligations may be summarised as follows:

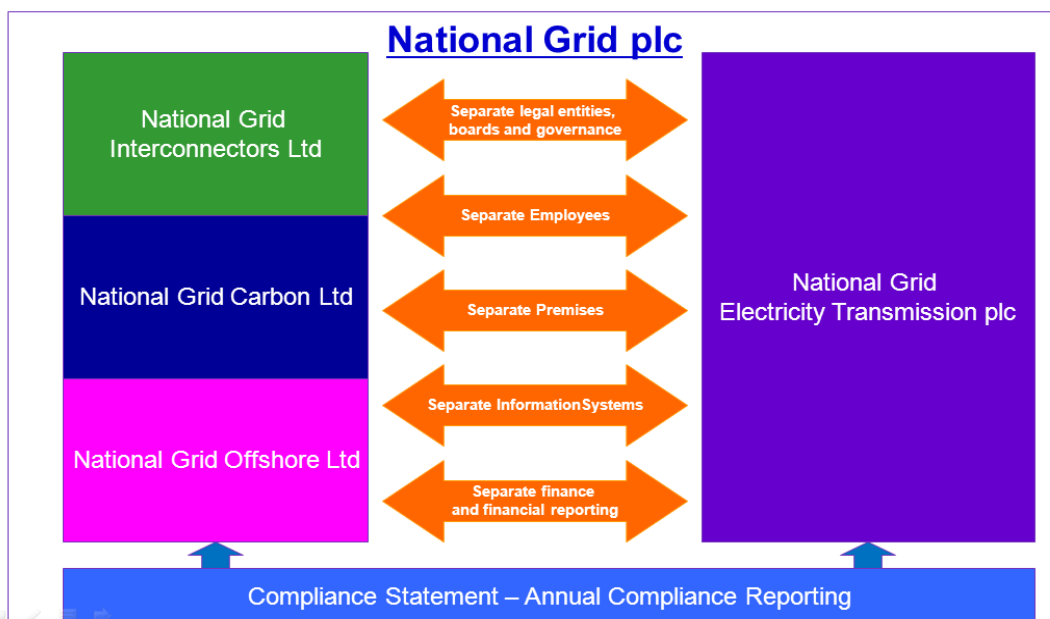
- **Limitation on scope of activity and financial separation** which protects NGET's assets for the use of the licensed business, and imposes obligations to deal on an arm's length basis on normal commercial terms with affiliates;
- **The requirement for economic and efficient behaviour** which also prohibits undue discrimination between any persons or classes of person in the procurement or use of balancing services;
- **The prohibition of discriminatory behaviour** such that no unfair commercial advantage on itself, affiliates, transmission users and transmission licensees is conferred. Special

Conditions 2D and 2E further require NGET to have specific managerial and operational architecture to ensure compliance, including a Business Separation Compliance Officer, a published Compliance Statement and annual compliance reports, and a requirement for the appointment of a sub-committee of the board (Compliance Committee) to oversee and ensure performance in this regard;

- **Prohibition on cross subsidies** that prevent NGET from giving or receiving a cross subsidy (this complements the obligation to deal on an arm’s length basis and normal commercial terms);
- **A general “good conduct” obligation** which extends the requirement to group companies. An undertaking is required to be given by the National Grid plc board to ensure that no conduct by either National Grid plc or any other group companies will place NGET in breach of its licence obligations;
- **General reporting requirements such as** regulatory accounts thereby ensuring transparency regarding revenues/costs attributable to the licensed business area, and prevents misallocation of costs and revenues and the grant and receipt of cross subsidies; and
- **Restrictions within industry codes** such as the CUSC, Grid Code, STC and BSC, ensuring that information that NGET receives as part of its regulated business be treated as confidential and be used only for the purpose of performing its activities, and are backed up by licence conditions requiring NGET to comply with the codes.

**Ensuring compliance with our regulatory and statutory obligations**

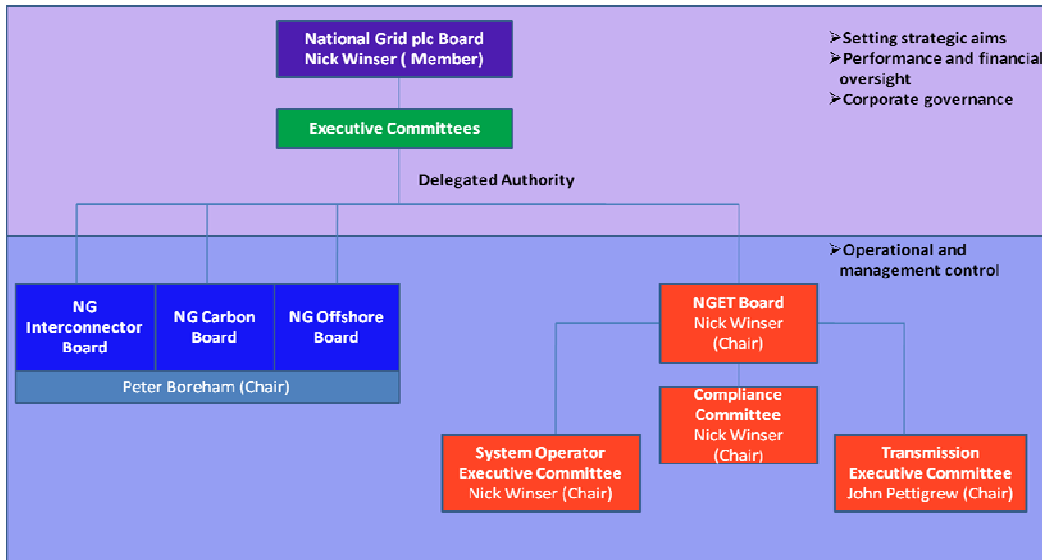
Compliance with our regulatory and statutory obligations is an important cornerstone of all of our day to day activities, and as such our corporate structure has been designed with this in mind. Physical, legal and virtual separation of our licensed and affiliated businesses is key to our compliance with the regulatory and statutory obligations, with the main features as summarised below:



Note that this diagram represents a simplified view of business separation which includes the key UK operating companies relevant for ITPR. It is not a full representation of National Grid’s UK operating structure.

In addition, NGET has in place systems of control and governance arrangements that ensure compliance with its licence obligations through the existence of separate board and executive committees to secure appropriate independence of operational and managerial control. Furthermore, National Grid Interconnectors Ltd, National Grid Offshore Ltd and National Grid Carbon Ltd are separate legal entities and have separate boards. None of the members of those boards are members of the NGET board.

The governance structures in place are represented in simplified form as follows:



Note that this diagram represents a simplified governance structure for the key UK operating companies relevant for ITPR. It is not a full representation of National Grids UK operating structure.

**Promoting a culture of compliance**

A powerful culture of compliance from the top down and throughout the NGET organisation is evident. The approach to creating a compliant culture is through an interlocking framework:



**Policies and Procedures** are in place to set out the compliance processes and codes of conduct which employees must operate to and include:

- Employee Induction Policy – contains business separation requirements;

- Compliance Rules – code of conduct for all employees in relation to business separation;
- Code of Conduct – applies to NGET and Offshore TO Regime;
- Employee Transfer Process – to ensure business separation compliance for employee moves between businesses – all sensitive moves are reviewed by the Business Separation Compliance Officer, and appropriate measures put in place;
- Pricing Governance Policy – to ensure consistent pricing is applied for services to group businesses and third parties;
- Shared Services Charging Methodology – cost apportionment for shared services, to avoid cross subsidy;
- Property and IS Policies – business separation rules;
- Information & Records Management Policy – guidelines on classifying information;
- Regulatory Reporting Code of Practice – code of conduct for regulatory reporting; and
- Detailed rules on confidentiality of information in the relevant industry codes (CUSC, Grid Code, STC and BSC).

Breach of the above rules by an employee would be treated as a disciplinary matter.

**Training and Awareness** is seen as very important to promote a culture of compliance. An annual programme of communication is run which includes reminders on business separation, material for team meetings, posters and e-mail bulletins. Visible compliance leadership is paramount, and one to one meetings with directors are held to discuss risks in their area, with targeted briefings to teams, new starters and employees who are moving business area.

The principles of business separation are further reinforced through an e-learning module. Employees who have access to commercially sensitive information or who are involved in the pricing, negotiation or delivery of contracts are required to recomplete the e-learning training every two years.

**Monitoring and Reporting** make up the final aspect of the compliance framework. The annual monitoring process includes questions and interviews about how effective the compliance processes and education programmes have been. Monitoring provides assurance for the reports to the Compliance Committee and Ofgem, but also reinforces the importance of business separation within NGET, by visible compliance reporting up to director level, and ensures the appropriate rigour and focus on risk areas.