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Future arrangements for the electricity system operator: its role and structure

Consultation

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Overview:

The System Operator (SO) has a key role in the electricity system. We think that the SO's role needs to evolve, to ensure it is well placed to both respond to and help facilitate the transformation of the electricity system over the coming decades.

We also think further separation between National Grid's electricity SO and electricity Transmission Owner (TO) functions would be in the interest of consumers. We have been working closely with the Department for Business, Energy & Industrial Strategy (BEIS) and National Grid on the options, and are proposing that the SO become a more independent company within the National Grid group (NG Group).

This consultation seeks views on our current thinking on these areas and our proposed approach for implementing any changes.

Context

National Grid Electricity Transmission plc (NGET) is the System Operator (SO) for the electricity transmission network in Great Britain. As such it is responsible for the day to day operation of the system. Different parts of the GB transmission network are owned by different Transmission Owners (TOs). In addition to its system operator role, NGET is also owner of the transmission system in England and Wales. The system in Scotland is owned by SP Transmission ltd (SPT) and Scottish Hydro Electric Transmission plc (SHE-T), and the offshore network is owned by a variety of Offshore Transmission Owners (OFTOs).

The role of the SO has grown over the years and it now has a more active role in transmission network development[1] and the capacity market. Its role is continuing to evolve. The SO is expected to take on new functions to support the introduction of competition for onshore transmission assets.

The changing nature of generation, particularly the increase in small generation connected at the distribution level, is highlighting the need for a more holistic and coordinated approach to planning and operating the transmission and distribution systems. The increase in new sources of flexibility also means there is a need for the SO to review how it procures these services. This evolution of the activities the SO carries out means we need to carefully consider the governance of the SO, to ensure that there is sufficient focus on its important role and to address any actual or perceived conflicts of interest between National Grid's SO functions, TO functions and other business interests.

In November 2015 Government ministers expressed the desire to make the SO more independent. We are working closely with the department for Business, Energy and Industrial Strategy (BEIS) and NGET to consider how the SO might be reformed to make it more flexible and independent. This builds on previous work we have undertaken to enhance the role of the SO through our integrated transmission planning and regulation (ITPR) project.

[1] Following the ITPR project: https://www.ofgem.gov.uk/publications-and-updates/integrated-transmission-planning-and-regulation-itpr-project-final-conclusions

Associated documents

Extending competition in electricity transmission: arrangements to introduce onshore tenders: https://www.ofgem.gov.uk/publications-and-updates/extending-competition-electricity-transmission-proposed-arrangements-introduce-onshore-tenders

Integrated Transmission Planning and Regulation project: final conclusions: https://www.ofgem.gov.uk/publications-and-updates/integrated-transmission-planning-and-regulation-itpr-project-final-conclusions

Smart, Flexible Energy System – a call for evidence: https://www.ofgem.gov.uk/publications-and-updates/smart-flexible-energy-system-call-evidence

Statement on the future of electricity system operation: www.ofgem.gov.uk/electricity/transmission-networks/electricity-so-reform

Electricity System Operator Incentives from April 2017: https://www.ofgem.gov.uk/publications-and-updates/electricity-system-operator-incentives-april-2017

Initial Proposals for electricity System Operator incentives from April 2017: https://www.ofgem.gov.uk/publications-and-updates/initial-proposals-electricity-system-operator-incentives-april-2017

Industry Code Governance: Initial consultation on implementing the Competition and Markets Authority's recommendations: https://www.ofgem.gov.uk/publications-and-updates/industry-code-governance-initial-consultation-implementing-competition-and-markets-authority-s-recommendations

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Executive Summary

The system operator (SO) has a key role in planning and operating the electricity system. As the system transforms, the role and form of the SO needs to adapt to keep pace with this.

We have already made changes to the SO's role to support more integrated and efficient planning and delivery of transmission investment, through our Integrated Transmission and Regulation (ITPR) project. The SO has also taken on the role of the Electricity Market Reform (EMR) delivery body.

We think further change is needed to:

- The SO's roles, to ensure it is well placed to both respond to and facilitate the transformation of the electricity system. These changes include both new roles for the SO and clarifying our expectations of how it will undertake existing roles.
- The structure of the SO, to mitigate conflicts of interest. The SO role is currently carried out by National Grid Electricity Transmission (NGET), which is also the owner of the transmission network in England and Wales. NGET is part of the wider National Grid Group (NG Group) that also has other relevant interests, including interconnector businesses.

BEIS has also been considering the case for greater separation of the SO. We have been working with it on this and also discussing with NGET. All three parties have jointly published a statement of intent alongside this document. The statement sets out our joint aspirations for the future of the SO and how this might be delivered. This consultation is the first step in that process and will inform our final decision.

The role of the SO

In the context of a rapidly-changing electricity system, our objective is an electricity system operator delivering real value to consumers by:

- Overseeing a safe, resilient, and cost-effective electricity system.
- Driving competition and efficiency across all aspects of the system.
- Promoting innovation, flexibility and smart/demand-side solutions.

We want to set clearer expectations or give the SO new roles across four areas of activity:

- *Acting as a residual balancer*. In carrying out this role we would like to see the SO thinking more widely about how it can drive greater efficiency in balancing, and how its actions in the short term can impact wholesale costs in the long term.
- *Facilitating competitive markets.* We consider that the SO's knowledge of the market and system balancing means that it is well placed to understand the interactions between the different market arrangements and rules, and how

they need to adapt to support effective competition, innovation and better outcomes for consumers more generally. We think the SO should take a more active role in influencing the future development of these markets.

- *Facilitating a whole system view*. We think the SO should have a key role (alongside other network companies) in ensuring that individual issues or system needs are looked at as part of the whole picture rather than solely from a transmission or distribution system perspective.

- *Supporting competition in networks*. We think the SO should have a role in identifying the right projects for tendering and in developing projects before a tender is run.

We also think that the SO will need to consider how to ensure it has a mind-set and culture which is focussed on performing these roles in a way which maximises benefits for customers. We intend to consider whether a more principle-based approach to regulation of the SO will help achieve this, as well as fundamentally reviewing the incentive framework for the SO.

A more independent SO

We have already put in place measures to mitigate SO conflicts of interest. However, as the role of the SO grows and becomes more complex, there is a need to consider whether further organisational separation is needed. We have been working on this with Government, which announced in November 2015 that it was considering the case for greater independence of the SO.

We believe that further separation of the SO within National Grid group (NG Group) is justified, with a level of independence and transparency to make industry confident in its impartiality, and have recommended to Government that this is the appropriate level of separation to pursue at this stage. In the longer term, we think the SO may need to evolve further and that there may be a need to consider moving to a fully Independent System Operator (ISO). The additional separation within NG Group that is proposed will deliver benefits while retaining the option to move to a full ISO later should it become clear that would be in consumers' interests.

Government and NGET have also concluded that they see benefit in taking forward further separation within NG Group.

This would mean the SO being a separate company with its own specific licence. We think it should be accompanied by licence modifications to ensure sufficient separation between the SO and other NG Group businesses. This includes measures relating to SO governance, employee and physical separation, and information ring-fencing. We also see the need for the SO to maintain a set of credit-worthiness and financial ring-fencing obligations similar to NGET today, so that the companies it contracts with are not materially affected by the change.

Next Steps

We welcome views on our proposals. The closing date for written responses is 10 March 2017.

Subject to consultation responses, we envisage that full legal separation of the SO could be in place by April 2019. However, we expect NGET to change how it undertakes its roles under existing licence obligations before then. We also consider that NGET could still take some steps to increase separation ahead of April 2019, for example by moving forward with physical separation measures and piloting new ways of working for the separate SO and TO businesses.

We will also be reviewing our approach to incentivising the SO. We are currently consulting on our initial proposals for an interim scheme for 2017-18 and will publish a consultation on our initial thinking for the longer-term scheme shortly.

Introduction

Chapter Summary

The role of the System Operator (SO) needs to evolve to deal with the challenges of the electricity market. We think greater separation between National Grid's SO functions and its Transmission Owner (TO) functions are needed to support this changing role.

Evolution of the system operator function

1.1. National Grid Electricity Transmission plc (NGET) is the System Operator (SO) for the electricity transmission network in Great Britain. It is responsible for balancing the electricity system by ensuring that generation on the national electricity grid matches demand on a second by second basis. To do this, the SO buys and sells energy and procures associated balancing services. It also provides information to market participants such as forecasts of wind generation.

1.2. The SO is the main customer interface for the transmission connected users of the electricity system (i.e. generators, DNOs and large demand users). It is responsible for dealing with parties seeking connection to the system and for collecting use of system charges on behalf of transmission owners. It also has a central role on the governance of industry codes.[2]

1.3. The electricity system is undergoing significant change. This trend will continue as we seek to decarbonise our electricity supplies and make the most of the potential of new technologies and business models. This means that the role and structure of the SO will need to change. The SO has already been given additional roles over the past few years:

- In 2014 the SO became the delivery body for the capacity market and feed-in tariffs for contracts for difference introduced by government as part of the Electricity Market Reform (EMR).[3] The SO was given responsibility for administering the mechanisms and providing analysis to government to support decision making.

- In 2015 (as part of our ITPR project) we gave the System Operator additional responsibilities to identify the need for investment in the transmission network, and coordinate and develop investment options. This included a new network options assessment process.[4]

[2] CMA Energy Market Investigations: https://www.gov.uk/cma-cases/energy-market-investigation
[3] Further information on EMR can be found on our website https://www.ofgem.gov.uk/electricity/wholesale-market/market-efficiency-review-and-reform/electricity-market-reform-emr
[4] ITPR project: Final Conclusions https://www.ofgem.gov.uk/publications-and-updates/integrated-transmission-planning-and-regulation-itpr-project-final-conclusions

- Each of these new roles resulted in the strengthening of measures to mitigate conflicts of interest associated with NGET having both SO and TO functions.

1.4. The SO has also been trying to adapt how it undertakes its existing functions to reflect the changing system. For example it has begun publishing an annual System Operability Framework, looking at key future challenges that may arise in operating the system. It has launched its Power Responsive campaign which seeks to help businesses and consumers to be efficient energy users, save on total energy costs and secure our energy now and in the future. It has also been seeking to use new sources of flexibility to aid it in operating the system, such as the current enhanced frequency response tender process.[5]

1.5. The next few years are likely to see an acceleration in the pace of change. Changes in the generation mix towards even greater volumes of new smaller scale, intermittent sources of energy, will place greater emphasis on the need to consider the system as a whole and to ensure there is sufficient flexibility to manage it. We need to ensure that the frameworks we have in place facilitate innovation and allow efficient new business models to develop.

1.6. These changes mean that the role of the SO needs to evolve further. This has been recognised in a range of recent work:

- In March 2016 the National Infrastructure Commission (NIC) issued its report on how the UK can better balance supply and demand, aiming towards an electricity market where prices are reflective of costs to the overall system.[6] It concluded that the system operator should create new markets that will allow open competition for the services it procures and ensure it keeps pace with the network it oversees.

- The NIC also considered potential conflicts of interest for National Grid given its SO role. It concluded that moving to a fully independent system operator (an ISO) is not a priority. The Energy and Climate Change Committee also considered this issue, and concluded that there should be a phased approach taken towards implementing an ISO.[7]

- We have also been working on issues related to system flexibility, and have combined this work with BEIS to produce a call for evidence on a smart and flexible energy system.[8] This considers what changes might

[5] http://www2.nationalgrid.com/Enhanced-Frequency-Response.aspx
[6] Smart power: A National Infrastructure Commission report, March 2016, https://www.gov.uk/government/publications/smart-power-a-national-infrastructure-commission-report
[7] Energy and Climate Change Committee report on Low carbon network infrastructure http://www.publications.parliament.uk/pa/cm201617/cmselect/cmenergy/267/26702.htm
[8] Smart, flexible energy system – a call for evidence: https://www.ofgem.gov.uk/publications-and-updates/smart-flexible-energy-system-call-evidence

be needed across a broad range of areas to support the transition to a smarter energy system. This includes potential changes that might be needed to the role of network operators (including the system operator) and market arrangements.

1.7. The Secretary of State for the Department of Energy and Climate Change (DECC) announced in November 2015 that government was looking at the future role of the SO and considering the case for greater independence. We have been working with DECC, now the department for Business, Energy and Industrial Strategy (BEIS), on this and also engaging in discussions with NGET. All three parties have jointly published a statement of intent alongside this document. The statement sets outs our joint aspirations for the future of the SO and how this might be delivered.[9]

Focus of this document

1.8. This consultation document is the first step in the above mentioned process and will inform our final decision. It invites feedback on:

- Our views on what the objectives for the SO should be, what we should expect from the SO in seeking to achieve these objectives and the extent to which this might require additional licence obligations (chapter 2).

- Our view that there is likely to be benefit to consumers from separating the SO and TO functions within National Grid; the proposed process we envisage following in response to NGET's request to partially transfer its existing transmission licence to a new SO company; and our thinking on what licence modifications we would require as part of such a transfer to ensure it is in consumers' interests (chapter 3).

- Our proposed next steps, including an overview of the programme of work going forward (chapter 4).

1.9. We have completed an initial impact assessment of these changes which is included as Appendix 2.

[9] Statement on the future of electricity system operation: www.ofgem.gov.uk/electricity/transmission-networks/electricity-so-reform

2. The role of the SO

Chapter Summary

We think the role of the SO needs to evolve further to both respond to and facilitate the transformation of the electricity system. We are proposing changes to its role that we think will deliver real value to consumers. These changes include both new roles for the SO and clarifying our expectations of how it will undertake existing roles.

Question box

Question 1: What are your views on our proposed objectives for the SO (set out in paragraph 2.1)?

Question 2: What are your views on our expectations for how the SO should seek to achieve these objectives?

Question 3: Do you agree with our proposals for what licence changes are needed to support these objectives?

Introduction

2.1 The role of the SO needs to adapt in order to keep pace with the changing electricity sector. In our joint statement of intent with BEIS and National Grid we said that our objective is an electricity system operator delivering real value to consumers by:

- Overseeing a safe, resilient, and cost-effective electricity system. While the SO's focus is the transmission system, it will need to take a whole system view, including managing interactions with distribution systems, to ensure that the transmission system is resilient and contributes to a cost-effective electricity system as a whole. It will need to identify key challenges the system is expected to face (for example from new technologies) as well as the long term needs of the system (eg. new capacity and greater flexibility). We expect it to consider a range of options that might meet those needs and help identify the solution that is likely to be most efficient whilst ensuring the safe, reliable operation of the system.

- Driving competition and efficiency across all aspects of the system. We are introducing competition for the delivery of certain onshore transmission assets and consider that the SO has a role to play in helping to drive this competitive process. We also expect the SO to use competitive approaches in operating the system wherever this is in consumers' interests.

- Promoting innovation, flexibility and smart/demand-side solutions. New

technology is opening up a number of innovative solutions to existing and anticipated system issues. It is important that such solutions are able to be used effectively. As such, the market for services and the charging regime needs to adapt to ensure a level playing field.

2.2 We think there are four areas where the SO's role needs to evolve to both facilitate and respond to a transforming electricity system:

- Acting as the residual balancer – operating the system safely and securely in real time, thinking more widely about how it can drive greater efficiency in balancing and how its actions in the short term can impact wholesale prices in the long term.
- Facilitating competitive markets, using its knowledge of the market and system balancing to design how it procures services and to contribute to the development of wider market arrangements in a way that supports effective competition, innovation and better outcomes for consumers more generally. This includes supporting or driving changes to industry rules to enable the market to contribute as much as possible to balancing the system, minimising the SO's own role as residual balancer.
- Facilitating a whole system view – working with other network companies to ensure that there is a whole system view on network planning and operation, to ensure end-to-end system resilience and that the most efficient overall solutions are taken forward.
- Facilitating competition in networks, to encourage greater efficiency, more innovation, and smart solutions.

2.3 We discuss these areas in turn below. For each, we set out the SO's current role and then set out the changes we think are needed.

2.4 Across all of the roles, it is important to state that we see that the SO needs to take greater responsibility (alongside other network companies) for ensuring the coordinated development of the system (broadly defined) and in driving improvements in market and network arrangements in light of the challenges of the day and those expected in the future.

2.5 We consider that our regulatory framework should be orientated, as much as anything, towards driving a mind-set and/or cultural shift within the SO. We think the SO can start to make progress on many of the issues set out below now (ahead of any licence changes). Additionally, we expect the SO to work closely with industry participants in undertaking its roles – while we expect the SO to drive change, other parties also have significant roles to play as well.

2.6 We note that we will continue to have an important role, which will involve us needing to approve aspects of the SO's operational framework and proposals, as well as an ongoing monitoring and compliance role. It is likely that we will also lead on some strategic changes to market and industry arrangements, working closely with the SO and other parties. In these cases we would seek to ensure the respective roles of ourselves and the SO are clear.

2.7 We think that, in some areas, there may be a need to be clearer about our expectations of the SO given its current licence obligations. In other areas, we think there may need to be new licence obligations to reflect that the SO would be undertaking functions it doesn't currently perform.

2.8 We intend to consider the right balance between licence obligations and different types of incentives on the SO as part of a fundamental review of our approach to SO incentives. We have recently published our initial proposals for an interim SO incentive scheme (for 2017-18)[10] and will be consulting on our initial thinking for the longer-term scheme shortly.

2.9 As part of the review we will consider the right balance of financial and reputational incentives. We will also consider the case for changes to the SO's licence obligations, to supplement incentives and provide clearer expectations for the SO. As part of this we will consider whether we should set specific or general obligations for the SO. In theory, obligations could be highly prescriptive or set at a much more principle based level. Our considerations in this area reflect the fact that we want to see an SO which anticipates challenges and is proactive in responding, rather than an organisation whose actions are driven by adherence to prescriptive rules and regulations.

Acting as residual balancer

The current approach

2.10 An important part of the SO's role is keeping the electricity system safe and secure in real time, and doing so as efficiently as possible. Market participants face financial incentives to ensure that what they produce or consume matches what they sell or buy. However, unexpected deviations in generation or demand (or inaccurate forecasts) mean that the market will not always be able to deliver a balance between demand and supply. This can lead to changes in system frequency, which if not dealt with, can lead to system outages. The SO therefore plays a critical role, taking actions to keep the system frequency stable when the market is unable to balance.

2.11 The SO is also responsible for taking balancing actions on different parts of the transmission network to deal with system issues and constraints (for example when there is too much generation in one part of the network and not enough transmission capacity).

2.12 The SO undertakes this role using the Balancing Mechanism (BM), and also through developing and procuring a number of additional balancing services (also called ancillary services) to ensure the needs of the system can be met.

[10] Initial proposals for electricity system operator incentives from April 2017: https://www.ofgem.gov.uk/publications-and-updates/initial-proposals-electricity-system-operator-incentives-april-2017

2.13 The SO principally uses transmission-connected generation and demand to support its management of system frequency. However, it has begun using more distribution-connected resources given the growth in generation and other forms of flexibility connected at distribution level. The SO is not responsible for managing constraints on distribution networks; instead this is the responsibility of distribution network operators.

2.14 The costs incurred by the SO to balance the system are levied on market participants through Balancing Services Use of System (BSUoS) charges. Balancing costs are also reflected in the prices paid by market participants when they are out of balance ('cash-out' prices). The size, volatility and predictability of these charges combine to impact the behaviour of market participants, profits and ultimately the costs passed onto consumers by suppliers in both the short and long term.

What we think needs to change

2.15 We would like to see the SO thinking more widely about how it can drive greater overall efficiency in balancing rather than focusing on short term reductions in balancing costs. In particular, about how its actions in the short term can impact the market and wholesale costs in the medium to longer term.

2.16 The overall efficiency of system balancing includes both the costs incurred by the SO as residual balancer and the costs incurred by market participants to balance their positions. Rather than just dealing with imbalances, the SO should therefore see helping the market to balance efficiently in the first place as a key part of its role. Transparency around the SO's actions and information provision is vital to this.

2.17 We believe the SO should be releasing as much information about the system and its actions as possible in order to help market participants make effective operational and investment decisions. A lack of transparency about the SO's actions can create uncertainty for market participants about the charges and revenues they receive and lead to inefficient decision making or risk premiums. The SO should be regularly and actively engaging with market participants to understand what information they need and in what format. It is crucial that this information is accurate, since inaccurate information can lead to inefficient market trading and dispatch.

2.18 System forecasts also have a big impact on overall balancing efficiency. Inaccurate system forecasts (for example on wind generation and demand) can create uncertainty and risk for the SO. This can lead to balancing actions being taken ahead of time unnecessarily when the market could have been able to respond. This can undermine short term market signals, which can have a knock-on detrimental impact on the investment decisions made by market participants in the long run.

2.19 The SO therefore has a responsibility to maintain robust IT systems and seek continuous improvements to its processes, as well as speaking to

stakeholders to gain a clear picture of future trends which could affect forecasts (such as embedded generation).

2.20 Additionally, we think there is a need to consider scope for improvements in the way balancing services are procured. We believe the SO has a responsibility to ensure these services are transparent and accessible. We discuss this further in the next section as we think there is scope for increased use of competitive markets to help achieve this.

2.21 Finally, as the level of embedded generation on the system grows, it is likely that Distribution Network Operators (DNOs) will need to more actively manage their networks. As described further in the 'facilitating efficient whole system outcomes' section, we believe there is a clear role for the SO to coordinate with DNOs (as they transition to Distribution System Operator – DSO- roles[11]) in this area.

2.22 In general, we do not see the behaviours described in this section as dependent on the future governance and structure of the SO. Instead, we expect to see them delivered under the SO's current licence obligations. We are considering whether there is a need to clarify our expectations through amendments to those obligations, as well as associated changes to our SO incentives framework; both as part of our review of incentives from April 2018 and as part of our interim incentive arrangements from April 2017.

Facilitating competitive markets

The current approach

2.23 The design of the electricity market, balancing markets and the Capacity Market (CM) all impact upon the evolution of our electricity system. The SO can have a large influence on the development and operation of these markets.

2.24 In addition to running the BM, the SO develops and procures a number of additional balancing services to ensure the needs of the system can be met. It also has a number of additional roles outside of balancing. In particular, it is party to and, in some cases, the administrator of industry codes, and it is the delivery body for the Government's Electricity Market Reform (EMR).

Role in balancing services

2.25 The SO determines which balancing services it needs and how to procure these from the market. The design of these services and approach to procurement can have a significant impact on the revenue available to different providers and the ability for new entrants to compete with existing

[11] The DNO to DSO transition is covered in more detail in our joint call for evidence with BEIS on a smart and flexible energy system.

providers. This can have a further impact upon short term price signals and revenues in the main electricity market.

2.26 Although the SO's approach to procuring balancing services must follow the high level framework set out in the Transmission Licence C16 statements[12] (which we approve each year), it has significant scope and flexibility in the design of these services. It can also propose changes to the C16 statements when needed. In the future, some of this scope is likely to be reduced as the SO makes greater use of European Standard Balancing products, in line with the forthcoming European Guideline on Electricity Balancing.[13]

Role in industry codes

2.27 The operation of the electricity market is underpinned by a number of industry codes. These include:

- The Balancing and Settlement Code (BSC) – the BSC is one of the main codes governing the operation of the wholesale market. It sets out the rules for the BM, for when wholesale market trading needs to stop and what happens to parties out of balance. These rules are therefore very important for the efficient operation of the wholesale market and help determine what the SO ultimately needs to do as residual balancer. They also have a big impact on competition between different wholesale market participants. The SO is a party to the BSC, and also has a fixed representative on the BSC Panel.

- The Connection and Use of System Code (CUSC), the Grid Code and the Distribution Code – the SO is the code administrator for the CUSC and the Grid Code, which set out rules for parties connecting to the transmission system. And it is a party to the Distribution Code, which sets out rules for parties connecting to distribution networks. These codes include elements which have a significant bearing on creating effective markets, such as the methodologies for use of system charges.

2.28 The SO is able to propose changes to these codes, provide its expertise and analysis to aid industry discussions, and influence the final recommendations which go to the Authority.

Role in EMR

2.29 As the EMR Delivery Body, the SO is responsible for administering key parts of the CM and the Feed in Tariff Contracts for Difference (FiT CfDs) regime. For the CM this includes assessing who meets the eligibility criteria for capacity auctions, running capacity auctions and maintaining and publishing a register of capacity market participants. For FiT CfDs, it includes running the

[12] http://www2.nationalgrid.com/uk/industry-information/electricity-codes/balancing-framework/transmission-license-c16-statements/
[13] Further details can be found here: https://www.entsoe.eu/major-projects/network-code-development/electricity-balancing/Pages/default.aspx

application, valuation and CfD allocation processes.

2.30 The SO, as with other parties, is able to provide advice and make proposals to BEIS and Ofgem when they are considering changes to the CM Regulations and Rules.[14] These rules can significantly impact not only on the smooth operation of the CM, but also competition between providers for capacity agreements. In the first two years of our annual CM Rules changes process, the SO submitted 40 formal proposals to change the CM rules.[15]

2.31 Another key part of the SO's role in relation to the CM is advising the Government on the capacity required in order to meet the CM reliability standard, and also the de-rating factors for different types of capacity.[16] It produces annual Electricity Capacity Reports for Government based on its detailed analysis of the system and future expectations. The recommendations in these reports (if accepted by the Secretary of State) have a fundamental impact on the outcome of the capacity auctions, the future capacity mix and ultimately on costs for consumers.

What we think needs to change

2.32 We consider that the SO's knowledge of system balancing and operation means that it is well placed to understand the interactions between the different market arrangements and rules, and how they need to improve to support effective competition and innovation. We believe that a more independent SO should take a much more active role in understanding the needs of businesses and influencing the future development of these market arrangements.

Balancing services

2.33 We believe the SO needs to place much more focus on ensuring its suite of balancing services are transparent, accessible and work together effectively in order to maximise competition. This is particularly important given the increasing challenges involved with balancing the system and therefore the need to ensure that innovative new technologies and business models (such as storage, and aggregators of demand-side response) are able to come forward and compete.

2.34 We have heard concerns from stakeholders that the large number of different balancing services and schemes creates confusion and that the information

[14] The CM is governed by two sets of legislation; the CM Regulations and the CM Rules. The CM Regulations (which are managed by BEIS) set out the overarching policy and design on the CM, whilst the Rules (which are managed by Ofgem) contain the practical detail on how the CM operates.
[15] https://www.ofgem.gov.uk/electricity/wholesale-market/market-efficiency-review-and-reform/electricity-market-reform/change-proposals
[16] Derating factors are derived from the expected availability of a technology relative to its maximum capacity. They are used to determine the level of capacity agreement that can be achieved by different technologies.

about these services could be improved. In addition, having too many disaggregated products, with different requirements and procurement timings, increases the risk of there being overlapping effects. This can distort price signals and lead to an inefficient mix of balancing providers, with higher prices than necessary.

2.35 We have also heard concerns about the extent to which balancing service providers have to exclusively offer their services to the SO, so that they cannot also sell services to other parties (so they can combine, or 'stack', revenue streams). Enabling providers to stack revenue streams could support the ability of both new and existing providers to compete to provide balancing services, potentially reducing costs, but needs to be balanced against the need for the SO to have confidence in accessing sufficient resource when needed.

2.36 We would like to see the SO engaging much more with stakeholders to understand what changes need to be made to make balancing services more transparent and accessible, while maintaining the SO's ability to maintain a secure system. This includes considering whether there needs to be greater bundling and aggregation of products, the extent to which system costs can be reduced by allowing providers to also provide services to other users, and the extent to which procurement and product requirements set out in the forthcoming European Guideline on Electricity Balancing can positively influence these developments.

2.37 The SO uses different procurement techniques for its balancing services. This includes tender-based selection processes and quite often the use of bilateral contracts. Bilateral contracts are typically used when there is insufficient competition between providers for a market-based approach (for example, when there is a need for a service in particular location).

2.38 The forthcoming European Guideline on Electricity Balancing is expected to set requirements for the SO to use market-based approaches for the procurement of balancing services. Accordingly, we believe that the SO should consider whether there should be more widespread use of auctions or tenders on its products to ensure open and fair competition. And where there is currently insufficient competition for a market-based approaches, consider what steps need to be taken to ensure there is market for that service going forward.

2.39 We expect the process of the SO improving the transparency and accessibility of its balancing services to begin now, as it is not dependent on the future governance arrangements. Given the importance of these issues, we are also considering whether there needs to be any additional clarity on the SO's obligations in this area as part of proposals for SO incentives from April 2017.

Industry codes (including charging arrangements)

2.40 We believe the SO should have an active role in understanding how market arrangements interact and in identifying opportunities to make trade-offs or access synergies across mechanisms that can lead to greater competition and better consumer outcomes overall.

2.41 We would therefore like to see the SO engaging much more actively with stakeholders to understand existing barriers to competition in code arrangements, including in regards to the methodologies for use of system charging. It should see itself as a leading industry voice in this area, combining the views of stakeholders with robust impact analysis to bring forward pro-competitive proposals to industry codes, which take a holistic view of the electricity system.

2.42 As highlighted, innovative new technologies and business models have the potential to be major new providers of flexibility to support the electricity system.[17] We think a particular key role for the SO is to identify and propose changes to code arrangements to ensure that these new providers are able to compete on a level playing field with existing providers.

2.43 We will continue to be responsible for approving code modification proposals (except where they meet self-governance criteria). We will also have a role in instigating changes in some cases, for example for key strategic reviews (such as through a significant code review). In these situations we would seek to ensure there is clear communication of our respective roles, and we would expect the SO to provide expertise and analysis to support our considerations.

2.44 We consider the SO's role in industry codes is already reflected in its licence obligations, and see this as mainly about being clearer as to our expectations of the SO. As such, we have not identified the need for additional licence obligations.

2.45 We note the read across to the Competition and Markets Authority's (CMA's) proposals on code governance. These proposals introduce a new code governance regulatory framework that will be responsive to strategic change and ensure consumer interest is central. The proposals will increase Ofgem's ability to engage more proactively with the code regime and establish clearer lines of accountability for delivery. For more information on this please see our initial consultation on implementing the CMA's recommendations.[18]

2.46 We are thinking about how these changes could apply to the codes for which NGET is administrator (in particular the CUSC, Grid code and STC). Regardless of the outcome of that process, we see the SO continuing to be an expert party that should have a stronger role in driving changes to the industry codes.

Electricity Market Reform

[17] See the joint call for evidence on a smart and flexible energy system: https://www.ofgem.gov.uk/publications-and-updates/smart-flexible-energy-system-call-evidence

[18] Industry code governance: Initial consultation on implementing the Competition and Markets Authority's recommendations: https://www.ofgem.gov.uk/publications-and-updates/industry-code-governance-initial-consultation-implementing-competition-and-markets-authority-s-recommendations

2.47 We do not believe there is a need for any major changes to the way the EMR delivery body (EMR DB) administers its functions going forward. However, our expectation around the SO's role in industry codes also extends to the CM Rules, particularly given the clear interaction between the energy and capacity market. We would like to see NGET continue to work with stakeholders to develop proposals to change to the CM Rules, not only to drive improvements in the operation of the CM, but also to ensure that all types of capacity are able to compete on a level playing field.

2.48 We would also like the SO to increase its focus on producing accurate recommendations on CM auction targets and de-rating factors, based on robust and transparent methodologies. In particular, overly-conservative recommendations can lead to capacity inefficiently coming forward and significantly increased costs to consumers. At the same time, accurate de-ratings are important for mitigating security of supply risks and ensuring certain types of capacity are not penalised over others.

2.49 Longer term demand forecasts are critical to these recommendations. This is becoming more challenging as the amount of embedded generation on the system grows. The financial incentives we place on NGET to produce accurate four year-ahead and year-ahead demand forecasts should encourage it to take actions to improve its understanding of future demand, including the impact of embedded generation on this. However, the SO should not see accurate forecasts as solely a financial trade-off, but as a crucial part of meeting its obligations to oversee and economic and efficient electricity system, particularly given the level of costs at stake.

2.50 The SO should also carry out detailed analysis and work with other European TSOs to increase its understanding of the likely contribution of interconnectors during scarcity situations. Neighbouring capacity can play a significant role in meeting our capacity needs; underestimating its contribution could lead to the inefficient promotion of domestic resources and increased cost to consumers.

2.51 Whilst we are not considering any new licence obligations in this area at this time, we intend to consider the interactions between EMR incentives and other SO incentives as part of longer term review of the SO incentives framework.

Facilitating efficient whole system outcomes

The current approach

2.52 The SO already has an important role to play in facilitating an efficient transmission network. As well as being the customer facing body for transmission issues (eg. dealing with connections requests) and acting as code administrator for a number of industry codes, the SO recently took on

additional roles relating to system planning.[19] The SO leads on the development of Future Energy Scenarios (FES), the identification of system needs (through the Electricity Ten Year Statement (ETYS)) and assesses major reinforcement options and non-build options to meet those needs (through the Network Options Assessment (NOA) process).[20] Although the SO does not make decisions on transmission investments, it makes specific recommendations on the need for reinforcements, and which option is the most efficient and economical solution for the network. The SO also identifies potential operability issues for the transmission system through its System Operability Framework (SOF) process.

2.53 The first NOA report made good progress towards achieving the originally identified goals arising from our ITPR final conclusions. However we directed the SO to review and refine its approach to assessing future network requirements to ensure that the benefits of the NOA process are realised.[21]

What we think needs to change

2.54 In addition to continuing to improve the NOA process for the transmission network, we think there is a need for greater coordination across transmission and distribution networks to ensure that outcomes are efficient from a whole system perspective.

2.55 In our joint call for evidence on a smart and flexible energy system[22] with BEIS, we set out a number of issues relating to the role of different parties in system and network planning and operation that we think need to be addressed. A significant element of this is the need for increased coordination between parties to manage the increasing interactions between transmission and distribution networks.

2.56 We think there is more the SO, together with other network companies[23], should do to ensure that individual issues or system needs are looked at as part of the whole picture rather than solely from a transmission or distribution perspective. Additionally, options for meeting these needs should be drawn from across the system where relevant. This includes looking at options on the distribution system that could help solve transmission problems and vice versa. Taking a whole system view is more likely to yield solutions that are

[19] We decided the SO would be given additional responsibilities to identify the need for investment in the transmission network, and coordinate and develop investment options. https://www.ofgem.gov.uk/publications-and-updates/integrated-transmission-planning-and-regulation-itpr-project-final-conclusions

[20] http://www2.nationalgrid.com/UK/Industry-information/Future-of-Energy/Network-Options-Assessment/

[21] Network options assessment methodology review and related direction: https://www.ofgem.gov.uk/sites/default/files/docs/2015_12_08_final_letter_to_ng_on_noa.pdf

[22] https://www.ofgem.gov.uk/publications-and-updates/smart-flexible-energy-system-call-evidence

[23] Whether they are DNOs, TOs (including offshore transmission owners and in the future other competitively appointed transmission owners), or interconnectors.

efficient (in both the short and long term). This applies to both the near-term operations and longer-term planning of the system.

2.57 For near-term operations, as noted in paragraph 2.21, there will be an increased need for coordination between the SO and DNOs to ensure that there is an efficient system-wide approach. Work is needed to build a common understanding of where system or network operation actions taken by one party could have cross-system impacts and develop ways to ensure the best outcome for the system as a whole. This includes better coordination of access to flexible resources so they can be used optimally across the system; and identifying where network management options in one part of a system can help in other areas.

2.58 For longer-term planning of how the transmission and distribution networks need to develop, we also think more needs to be done to consider non-build solutions to system needs. Particularly, considering flexible, innovative and smart solutions (such as arrangements to turn generation or demand up or down, or to use storage) alongside options for reinforcing the network with an aim of efficiently trading off operational and capital costs and considering innovative alternatives to network investment.

2.59 We also expect the SO to be proactive in identifying future transmission-distribution (T-D) boundary and whole system issues and engage with industry in a timely manner on how to resolve these. The SO is already engaging with industry to develop improved understanding of whole system operability challenges in the System Operability Framework (SOF).[24] We welcome their intention to include a more detailed understanding of whole system operability challenges across the T-D boundary and roadmap for solutions in the 2017 SOF. The SO should continue to develop the SOF (and other tools as appropriate) to help understand these issues.

2.60 In addressing these areas, we expect the SO to work with TOs and DNOs to define roles across the T-D interface, further enhance frameworks and contractual arrangements to address evolving operational challenges and optimise boundary investments. We expect this could involve undertaking trials of different approaches.

2.61 The SO already does some of this for the transmission network. If its role is extended to help facilitate and coordinate with other parties on these issues across the T-D interface then this may need to be reflected in its licence or through supporting guidance.

2.62 The exact nature of the SO's role with respect to the distribution system is being considered as part of our call for evidence on a smart and flexible energy system with BEIS.[25] We welcome views on this in response to the call

[24] The ENA is also undertaking work in this area. Further information is available here: http://www.energynetworks.org/assets/files/news/publications/Reports/TDI%20Report%20v1.0.pdf

[25] https://www.ofgem.gov.uk/publications-and-updates/smart-flexible-energy-system-call-

for evidence and will take these responses into account when developing our thinking.

Supporting competition in networks

The current approach

2.63 We are introducing the use of competition for certain transmission projects that meet our criteria (specifically, for projects that are new, large and separable). We envisaged that these projects would predominantly be identified through the SO's NOA process.

2.64 Under a late CATO[26] build tender model, it will be necessary for a party to undertake the preliminary works for those projects that will be subject to competition, ahead of a tender to determine the party to construct and operate the assets. Preliminary works include (but are not limited to) works in relation to surveying, early design, planning permissions, and consents. During the RIIO-T1 price control period the incumbent TOs will be responsible for carrying out the preliminary works for projects in their own transmission areas, which are to be competed.

What we think needs to change

2.65 One key improvement going forward is to use the NOA process to identify projects that are likely to meet the criteria for competition.

2.66 Whilst we expect TOs to continue to identify the most appropriate options within their licensed area for inclusion in the NOA, the SO has a role to play in ensuring all appropriate options are considered. This means the SO will need to take the lead on certain options (eg. cross regional solutions, alternative build solutions or non developer-led offshore wider works options). As we set out in our previous consultation on onshore competition[27] the SO should be responsible for the 'early development works' associated with SO-led options. We expect this early development will include analysing the capacity to be provided, technology choices and high level routeing (all undertaken through desktop analysis).

2.67 We therefore consider that the NOA methodology needs to be updated to incorporate more stringent information requirements, an assessment of options against the criteria with an accompanying recommendation on suitability for tendering, further project identification principles, as well as to enshrine the role for the SO in undertaking early development works for SO-

evidence

[26] Competitively appointed transmission owner

[27] Extending Competition in electricity transmission proposed arrangement to introduce onshore tenders: https://www.ofgem.gov.uk/publications-and-updates/extending-competition-electricity-transmission-proposed-arrangements-introduce-onshore-tenders

led options. We expect the NOA report in 2017 will represent an interim step towards this, with the full updates in place for the 2018 report.

2.68 We have previously set out our thinking[28] on why the SO would also be well placed to carry out preliminary works for projects being competed during RIIO-T2. This is an area we will be consulting further on at a later date.

2.69 Some of the above would be new areas for the SO and would require amendments to the existing licence obligations. We expect to consult on this next year.

Implementing these changes

2.70 As set out earlier in this chapter we are considering the most appropriate way of reflecting these roles in the SO licence, and we set out details on our next steps for these changes in chapter 4. However, we expect the SO to make progress as soon as it can.

2.71 It is possible that the SO will incur additional costs in carrying out these roles. The SO's internal costs are funded through the RIIO price control framework (and have therefore been set for the period until March 2021 as part of RIIO-T1). The SO is incentivised to operate the transmission system in an economic and efficient manner through licence obligations and the SO incentives mechanism.[29]

2.72 We are not intending to re-open the RIIO-T1 settlement as part of this process. However, where the SO is being asked to carry out a new or increased role we will consider whether any changes to funding might be necessary. Additional funding would only be considered where there is clearly a material increase in costs faced by the SO and the activity is beyond what was envisaged at the time of the RIIO-T1 settlement.

2.73 If such cases do arise then we will consider whether additional funding is needed alongside consideration of how the SO may be incentivised for that activity.

[28] Ibid.
[29] https://www.ofgem.gov.uk/electricity/wholesale-market/market-efficiency-review-and-reform/system-operator-incentives

3. A more independent SO

Chapter Summary

We are proposing greater independence for the System Operator function within National Grid Group. We are seeking views on the range of separation measures which will apply to the new SO entity. We propose to implement these measures by making changes to the SO licence.

Question box

Question 1: Do you agree that greater separation between NG's SO functions and the rest of the group is needed?

Question 2: What are your views on the additional separation measures we are proposing?

Question 3: What are your views on our proposed approach for implementing these changes?

Introduction

3.1 We think that it is important to increase the level of separation between the National Grid SO and TO functions.

3.2 We set out below:

- Our view that separating the SO and TO within NG would be beneficial for consumers.
- Details on the form that separation is expected to take and the process we intend to follow to implement these changes.
- Our thinking on what additional licence conditions are likely to be warranted to ensure that the separation is in consumers' interests.

The need for greater independence

3.3 The current SO functions are carried out by NGET. In addition to being the SO for Great Britain, NGET owns the transmission network in England and Wales. The wider National Grid Group also has other competitive interests within the electricity industry (such as interconnectors).

3.4 Due to conflicts of interests between these roles, we have previously put in place effective conflict mitigation measures in the NGET transmission licence. However as the role of the SO grows and becomes more complex, there is a need to re-evaluate real or perceived conflicts of interest to better encompass these cross-linking role changes. Thus, in considering the future role of the SO it is important to also proactively think about further measures needed to

manage or mitigate such conflicts.

3.5 A number of conflicts could arise as a result of the evolving role of the SO. These include but are not limited to:

- The SO will have a role in recommending strategic options to meet system needs through the NOA process. There is a risk that the SO could favour National Grid by supporting non-competed options within NGET's transmission area (which NGET would then construct and own) or competed options outside NGET's transmission area (which a National Grid bidding businesses may bid to construct and own).

- We are proposing that the SO should have a role in coordinating with other network companies to ensure that the best solution for system needs from a whole system perspective is identified. This could include investment solutions on other companies' networks or non-build solutions to system needs. The SO could potentially favour options that are preferential to NGET's transmission owner interests.

3.6 We considered two options for mitigating or removing these potential conflicts:

- Separating the SO and TO functions within NG group. This would involve setting up a new company within NG Group which would be licenced to undertake the SO functions for GB. NGET would remain TO for England and Wales. Under this option we would put requirements on National Grid to ensure the SO function is more autonomous than the status quo and arrangements are in place to govern its interactions with NGET.

- A move to a fully independent SO (ISO). This would involve transferring the SO function to a new independent body with no other transmission interests. We think this would likely require primary legislation and as such it would be a decision for Government rather than ourselves.

3.7 Taking into account our previous thinking in this area[30] as well as external reports on the matter[31], we believe that a more independent SO will be in consumers' interests. We consider that the new roles the SO will be taking on could materially add to potential conflicts of interest (even if just perceived) without further separation. In addition, creating a separate SO company should yield benefits in terms of greater clarity and focus on the SO's role.

[30] ITPR Project Final Conclusions: https://www.ofgem.gov.uk/sites/default/files/docs/2015/03/itpr_final_conclusions_decision_statement_publication_final.pdf

[31] National Infrastructure Commission: Smart Power: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/505218/IC_Energy_Report_web.pdf; Energy and Climate Change Committee report on Low carbon network infrastructure: http://www.publications.parliament.uk/pa/cm201617/cmselect/cmenergy/267/26707.htm#_idTextAnchor048

Given this, our view is that further separation of the SO within National Grid Group, with a level of independence and transparency to provide industry confidence in its impartiality, is a proportionate approach and will be in consumers' interests. Our initial impact assessment, which is included at appendix 2, provides more detail on the benefits that we consider will be achieved by additional separation.

3.8 Government has reached the same conclusion, and NG has also indicated that it sees benefit in taking forward further separation within NGET. The joint statement of intent published alongside this consultation sets out our joint aspirations for the future of the SO and how this might be delivered. The statement only represents our high-level, minded to position and we will take stakeholders' views fully into account before coming to our final decisions across these areas. This consultation represents the first step in that process.

3.9 In the longer term, we think the SO may need to evolve further and think that there may be a need to consider moving to a fully Independent System Operator (ISO). The additional separation within NG Group that is proposed now will deliver benefits in the short to medium term whilst retaining the option to move to a full ISO later should it become clear that it would better serve consumers' interests.

The process for separation and consequential issues

3.10 We believe that separating NGET SO and TO functions can be achieved using existing legal provisions. We intend to use these in order to facilitate the separation process.

Proposed process for separating the licence and transferring assets

3.11 Section 7A (Transfer of licences) of the Electricity Act 1989 ('the Act') allows a licensee to ask us to transfer all or part of an existing licence to another entity. If we decide to consent to the partial transfer of the existing NGET licence to the new SO company, we are able to modify the licence as part of this process (following consultation) and impose appropriate conditions on the transfer.

3.12 We have held initial discussions with NGET regarding this process. NGET is proposing to submit a request to transfer the SO functions in NGET's existing licence to a separate legal entity within the NG Group ('NGSO'). We expect that this request will include the detail of the licence conditions which NGET is seeking to transfer to NGSO and retain in NGET ('NGTO'), and those which may have to be modified in order to give us sufficient detail to assess the application.

3.13 As part of this, we will split NGET's RIIO-T1 price control settlement between the NGSO and NGTO companies. This will include determining how the RIIO-T1 licence conditions should be split between the licences, plus also considering consequential changes to the RIIO-T1 financial model and handbook. There will be a need to consider the appropriate allocation of revenues, incentives and outputs between NGSO and NGTO. However, it should be noted that we are not intending to re-open the overall NGET

settlement in this process; rather this is about how it should be allocated across NGSO and NGTO.

3.14 Any partial licence transfer is subject to our consent. We are required to undertake a statutory consultation in relation to the proposed transfer. We will consider whether conducting a further, informal consultation beforehand would also be beneficial. These consultations will cover which modifications to existing licence conditions are necessary as a consequence of the transfers. Subject to the outcome of such consultations, and the Secretary of State's view on the modifications, we will impose any conditions on the transfer we consider necessary to further our principal objective (see our thinking on this in the next section).

3.15 Any relevant asset transfer is subject to our consent pursuant to Standard Licence Condition B3 (Disposal of relevant assets and restrictions on charges over receivables). As part of this process NGET will need to comply with the requirements of its existing Transmission Licence by notifying us when seeking to transfer relevant SO assets to NGSO.

Certification

3.16 The Electricity and Gas (Internal Markets) Regulations 2011 ('the GB Regulations') requires transmission system operators (TSOs) to be certified as complying with the ownership unbundling requirements of the Third Package.[32]

3.17 The certification procedures are set out in the Electricity Act 1989 ('the Electricity Act') and in the Gas Act 1986 ('the Gas Act') as amended by the GB Regulations.[33]

3.18 If we go ahead with our proposals, the new NGSO company will need to apply for certification. We will make a decision on the application. The legislation requires that our preliminary decision on certification is notified to the European Commission and that our final certification decision take 'utmost account' of the Commission's opinion.

3.19 Once it is certified and licenced the new NGSO will be designated as a TSO. We do not expect that certification and designation of NGSO will impact on the existing certification and designation of NGET. However, this will need to be assessed once we have received all the relevant certification information.

Consequential changes resulting from separation

3.20 If we go ahead with our proposals, industry codes including the Connection and Use of System Code (CUSC), the SO-TO Code (STC), the Grid Code and

[32] The term 'Third Package' refers to Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity.
[33] On 10 November 2011 we published an open letter setting out our intended procedure for processing certification applications under the unbundling requirements of the Third Package.

the Balancing and Settlement Code (BSC) will need to be modified to reflect the new arrangements. In addition, the allocation of roles and responsibilities under the European network codes will also need to be reviewed.

3.21 We consider that, at a minimum, consequential changes may be necessary in order to recognise the existence of NGSO as the new System Operator and NGET as a Transmission Owner. The new SO entity will also need to take on NGET's existing roles in industry codes where appropriate.

3.22 The SO is responsible for administering key transmission network codes and has a responsibility to ensure they remain fit for purpose. As such we would expect NGET as the existing SO to engage with industry on this and ensure a coordinated set of proposed modifications are developed. We expect these modifications to be taken forward using the existing code modification procedures.

3.23 We consider that it is likely to be appropriate for NGET's ownership of Elexon to be transferred to NGSO, subject to our formal consent (as required under the BSC). The existing separation arrangements between Elexon and the SO would be replicated for the new NGSO. It should be noted that this does not impinge on taking forward any remedies proposed by the Competition and Market Authority, such as how code bodies will be licenced, as part of its Energy Market Investigation.

3.24 We are working to ensure that the allocation of roles under the European network codes remain fit for purpose as a result of these proposed changes. We will seek to ensure there are mechanisms in place to make future changes to the allocation of roles if necessary.

Contract novation

3.25 As part of the transfer process and establishment of NGSO as a separate legal entity, System Operator related contracts will need to be novated from NGET to NGSO.

- National Grid has suggested that for contracts entered into under the CUSC this can be achieved by modifying the CUSC in a way that enables the contracts to be automatically novated to a new SO if NGET ceases to have that function.

- For non CUSC related contracts (such as commercial balancing services agreements) this transfer will need to be affected through bilateral negotiation where such transfer cannot be achieved through industry code modification. We expect National Grid to engage with counterparties bilaterally at an early stage of the process.

Funding arrangements due to separation

3.26 As noted in paragraph 2.72, we are not intending to re-open the RIIO-T1 settlement as part of this process. However, it is likely that some costs will be incurred in separating the SO and operating NGSO separately from NGTO. Our view is that where costs have been directly incurred as a result of the

transfer (and do not give a benefit to NGET or NGSO that they would otherwise have had to fund from existing mechanisms) they should be recoverable where they can be shown to be economic and efficient as they were not envisaged at the time of the RIIO-T1 settlement.

3.27 Following our assessment of these costs, we will make the necessary amendments to the relevant licences to allow National Grid to recover such monies.

3.28 Our Impact Assessment includes further detail on National Grid's initial estimated costs associated with separation.

Our thinking on additional conditions of licence transfer

3.29 In considering the partial licence transfer request from NGET, we are able to impose new licence conditions as part of our approval. We set out below our thinking on what these conditions might be. We first explain the current separation arrangements that exist and then our view on how these should change to ensure that consumers would benefit from further separation of the SO.

The licenced entity

Current arrangements

3.30 There are existing rules in place to govern the relationship between NGET and relevant other competitive businesses (ROCBs) owned by National Grid (such as its interconnector business). These measures cover legal, employee, physical, informational, and financial separation between the different parts of NG group.

3.31 Specific information NGET has access to due to its SO role (including relevant system planning information and EMR information) must be ring-fenced so that it is not accessible to those working in its TO functions.

What we think needs to change

3.32 Under these proposals NGET's SO functions will transfer to a new legal entity that would have a separate transmission licence. This entity would however remain part of NG Group.

3.33 We consider that the SO should be separate from all other aspects of National Grid Group. Whilst existing arrangements would continue to govern the relationship of NGTO with the rest of the group, we will build on existing arrangements governing the relationship between NGSO with the rest of the group, and put in place specific arrangements to govern the relationship between NGTO and NGSO. Our proposals are set out in more detail below.

3.34 As part of Electricity Market Reform (EMR) and following our Integrated Transmission Planning and Regulation (ITPR) project there are already ring-fencing measures in place within NG's transmission business. In placing additional ring-fencing provisions, we will consider how these will impact

existing conditions.

Governance of the SO

Current arrangements

3.35 Currently the NGET board consists of both SO and TO personnel. The current Board is required to have at least two sufficiently independent directors[34] to cover both the SO and TO functions within NGET.

What we think needs to change

3.36 As NGSO will be a separate legal entity it will be required to have its own separate Board. We consider that the NGSO board should have different members than the NGET board.

3.37 In accordance with Condition B22 (Requirement for sufficiently independent directors) of the Transmission Licence and in common with other transmission licensees, NGSO will be required to appoint at least two sufficiently independent directors (SIDs) to the NGSO Board. NGSO has indicated it would consider appointing three SIDs to the NGSO Board.

3.38 We would welcome views from stakeholders on whether the appointment of an additional SID would be beneficial. It should be noted that we would expect the requirement for two SIDs for NGTO will remain.

3.39 We will require that members of the NGSO Board cannot sit on the NGTO Board, on the boards of other NG electricity subsidiary companies, or on the board of NG Group. We consider that prohibiting such cross-composition will improve the independence of the SO.

3.40 We expect that SIDs, as part of their role as members of a unitary board, should constructively challenge and help develop proposals on strategy.

3.41 We will require that the NGSO Board will establish a Compliance Sub-Committee which will be chaired by a SID. This committee will be responsible for ensuring, amongst other things, that NGSO decisions are non-discriminatory and that NGSO business separation requirements are complied with. This requirement will also remain in place for NGET.

Financial separation and credit worthiness of the SO

Current arrangements

3.42 Currently NGET's accounts and assets cover both the SO and TO functions. NGET's investment grade rating is derived from the combined businesses.

[34] Standard Condition B22 of the Transmission Licence discusses 'Sufficiently Independent Directors' (SIDs).

3.43 To limit the influence that a parent company can exercise with regard to each licensee, Standard Licence Condition B8 requires the licensee to obtain a legally enforceable undertaking from its ultimate controller that it will refrain from any action which would cause it to breach any of its obligations under the Act or the licence.

3.44 Within the licence, there are specific rules governing the financial interaction of transmission companies. Standard Condition B5 prohibits cross subsidies to or from any other business of the licensee or its affiliate. Further, the STC sets out the general obligations of confidentiality including restrictions on the circumstances under which confidential information may be disclosed by a party to its affiliates.

What we think needs to change

3.45 We expect NGTO and NGSO to each have its own accounts (statutory and regulatory) and assets. In line with current licence obligations, we would require each transmission company to maintain an appropriate credit rating and follow specific rules around indebtedness and availability of financial resources.

3.46 To protect consumers, TOs, OFTOs and other counterparties of NGSO from the consequences of the SO becoming financially distressed, we consider that the SO must take all reasonable endeavours to maintain an investment grade rating. This will require that the SO has a set of credit-worthiness and financial ring-fencing obligations similar to NGET today.

3.47 We expect the SO's role as the administrator of the charging arrangements to continue (ie. it collects charges from system users and redistributes monies to TOs). As such the SO is a critical counterparty for industry participants. However, this role may also leave the SO exposed to the possibility of under or over recovery.

3.48 The SO will require the financial resources to ensure it can cover any cash flow issues arising from shortfalls associated with under-recovery. Within the RIIO-T1 period, we consider that this support may come from the broader NG Group on a commercial basis. We note that this cost is embedded within the current integrated structure of the SO/TO. It would be for the NG Group to determine how it allocates existing financial obligations (ie. debt) between the SO and TO activities to optimise the financial positions of both companies. If we were to consider it appropriate to provide a specific allowance to the SO for costs relating to its financial facilities, we would expect to include an offsetting negative adjustment to the revenues of NGTO to preserve the existing regulatory framework.

3.49 We will consider the appropriate financial parameters, such as the appropriate gearing level and cost of equity, for NGSO as a separate entity as part of the next price control review process.

Employee separation

Current arrangements

3.50 With the exception of certain ring-fenced roles, current NGET employees can work across the SO and TO functions.

3.51 There are specific restrictions in place for NGET employees that work on EMR and those that handle relevant system planning information due to changes made as a result of ITPR.

3.52 A number of corporate services are shared between the SO and TO functions within NGET. These include finance, human resources, legal, information systems, regulation, corporate affairs, procurement & logistics, planning & environment, public relations, health & safety, audit, insurance, tax, property management, transactional finance, transactional human resources, facilities management, and services provided by construction.

3.53 In addition, some employees are shared between the NGET SO function and National Grid Gas Transmission (NGGT). These include the director of both SO functions, plus also UK energy strategy, customer stakeholder and business change teams.

What we think needs to change

3.54 We consider that SO employees should only work on SO issues whilst TO employees should only work on TO issues. This is to restrict the flow of potentially sensitive information to other parts of National Grid and minimise any perceived conflicts of interest.

3.55 We recognise there may be some services that can be provided efficiently across the SO and TO businesses without causing concerns about actual or perceived conflicts of interest. As a general principle, we consider that such shared services should be provided to NGSO on the same basis that they are provided to other NG Group entities.

3.56 However, we consider that some of the current shared services could give rise to real or perceived conflicts of interest.

3.57 NGET has proposed that this could be addressed through introducing separate NGSO and NGTO business partners for 'strategic' shared services – regulation, finance, legal and corporate affairs. This could include separate teams under each business partner, though the employees would not be subject to other separation conditions (such as physical separation or remuneration conditions) and would still report in to a director covering both NGSO and NGTO issues.

3.58 We are considering whether this approach would sufficiently mitigate potential conflicts of interest. In particular, we have questions as to whether this would be sufficient for the 'regulation' function. We think this function would likely involve significant input on SO strategy and policy. An alternative approach would be to not consider the 'regulation' function as a shared service, meaning that all the separation measures discussed would apply to those in the NGSO 'regulation' function.

3.59 We would welcome views from stakeholders on whether regulation should be classified as a shared service or if it should be separately resourced by NGTO and NGSO. Further, we would welcome stakeholder views on whether other services, such as legal and finance, should be separately resourced by NGSO.

3.60 We would also welcome views on whether there are any issues with NGSO and NGGT continuing to have some shared employees, as detailed above. We can see merit in allowing some overlap due to synergies, but would welcome evidence on whether there are potential conflicts of interests. We would expect NG Group to have clear arrangements in place to ensure that having shared employees did not undermine other conflict mitigation arrangements.

3.61 Our initial view is that employee transfer between NGSO and NGTO should be restricted but not prohibited. However, we consider that NG Group should take ownership for ensuring that employees transferring into and out of NGSO have received adequate briefings on the associated Code of Conduct and been trained on any processes to protect information provided to NGSO in confidence. Where employees are moving out of the SO function we would expect NGSO to make checks to ensure cooling off periods are applied to prevent members of NGSO who have dealt with commercially sensitive information from transferring directly to other relevant National Grid businesses. We would expect NG Group to put in place separate processes and additional checks for senior managers and directors.

3.62 We consider that employees working in the SO business should be incentivised on the basis of the performance of that business (rather than on the performance of NG Group as a whole). We therefore consider that any bonus payment scheme should be linked to SO specific metrics. We would welcome views on whether this is sufficient to avoid potential conflicts and appropriately incentivise employees.

Information ring-fencing

Current arrangements

3.63 There are ring-fences in place that prevent the SO from sharing sensitive information outside the SO function. These are related to EMR and relevant system planning information resultant from ITPR changes.

3.64 In other areas, such as outages, we encourage the SO to discuss issues that would result in better management of the network with TOs and other network operators.

What we think needs to change

3.65 In principle, we consider that to create a level playing field in the industry, NGTO should only have access to that information for which equivalent information would also be made available to other TOs by NGSO through the STC. To enable this, we consider that there should be some separation of the current NGET information systems (IS).

3.66 There are several complex operational systems which are currently shared by

the NGET SO and TO functions (for example the Industrial Energy Management Software). As these systems are part way through their lives we do not consider that it would be efficient to seek to fully separate them at this stage. Information from NGET suggests that the process could take up to 5 years due to IS procurement, implementation and testing timescales. We therefore consider that NGTO should be limited to accessing information on its own assets, and should not get access to information on the wider electricity network.

3.67 When coming to replace IS systems, it will be important that the NGSO and NGTO companies consider options for further separation of systems.

Physical separation

Current arrangements

3.68 NGET's current site in Wokingham just houses SO employees. In contrast its office in Warwick house both SO and TO employees. There are no significant barriers in place to prevent SO and TO employees working from the same area. NG Group also has offices in London that can be accessed by both TO and SO employees.

3.69 However, NGET employees that work on EMR are required to be physically separate from colleagues due to the sensitive information they hold.[35]

3.70 NGET employees that handle relevant system planning information are required to be separate from TO colleagues due to the sensitive information they hold.[36]

What we think needs to change

3.71 Given that NGET and NGSO will be operating independently, it is important that this is reflected in their physical working environment. It is important to avoid any real or perceived conflicts from shared working accommodation between the entities and as such we consider they should have separate offices. Appropriate restrictions should be in place around employee access to these offices.

3.72 NG has proposed modifications to its Warwick office to effectively make it into two separate offices. This is likely to include, but not be limited to, discrete external entrances with separate security access, separate employee facilities such as cafeteria, and physical and technological barriers to restrict access between NGTO and NGSO employees.

3.73 We consider that this proposal could reduce any perceived conflicts of interest

[35] More information on the compliance requirements related to EMR can be found here: http://www2.nationalgrid.com/UK/Industry-information/Compliance/
[36] More information on the compliance requirement related to ITPR can be found here: http://www2.nationalgrid.com/UK/Industry-information/Compliance/

at minimum disruption to National Grid's working, and do so in a relatively short timescale.

3.74 The alternative would be for either NGTO or NGSO to procure a separate building and operate from the new office space.

3.75 Our initial view is that both options would deliver an appropriate level of actual separation between the entities. Whilst we acknowledge that the second option would have a greater impact in removing any perceived conflicts, it would also likely be more expensive and disruptive for NGET, and could take longer to implement.

3.76 We would welcome input from stakeholders on whether modifications to the current National Grid building would be sufficient to tackle any real or perceived conflicts of interest.

Process, outcome, and stakeholder engagement

3.77 Our process provides scope to take into account the views of industry (starting with those we will receive in response to this consultation). However, it also means that there is some uncertainty in the timeline for delivering these changes.

3.78 We are considering the appropriate target date for separation of NGSO and NGTO should we decide that is the right outcome. We intend that this would occur at the start of a financial year due to the complexities involved in a mid-financial period implementation. For instance, as the Price Controls Financial Model does not calculate revenues for part years, a mid-financial year implementation would require considerable change and consequently create unnecessary risk. Further, charges are currently set annually and if we were to implement our proposals during the financial period rather than at the start, we would need to change to two separate charging periods which adds greater complexity.

3.79 We are therefore assessing the viability of implementing our proposals, should we decide it is the right course of action, by April 2019.

3.80 We consider NGET could still take some steps to increase separation ahead of April 2019, for example moving forward with physical separation measures and piloting new ways of working for the separate SO and TO functions in 2018. We welcome stakeholder views on whether April 2019 would be a suitable target date.

3.81 After the partial licence transfer, both NGTO and NGSO will hold Transmission Licences. We envisage that:

- The NGSO licence will include the Standard Licence Conditions (SLCs) in sections B and C of the licence along with a number of special conditions.
- The residual NGET licence will be similar to that of the Scottish TOs, ie. include the Standard Licence Conditions (SLCs) in sections B and D of the licence along with a number of special conditions.

3.82 As part of the licence transfer the Authority will implement appropriate modifications to existing conditions. This is expected to include:

- New conditions (or changes to existing conditions) on business separation.
- Amendments to existing conditions to make them specific to NGET or NGSO.

4. Next Steps

Chapter Summary

We welcome responses to the proposals we have set out in this consultation. Subject to those responses we plan to move forward with the work needed to split NGETs licence and make other licence changes needed to implement our proposals.

Question box

Question1: What are your thoughts on our proposed approach for implementing the proposed changes set out in this consultation?

Question 2: What further evidence should we consider in finalising our impact assessment of these proposals on the SO's roles and level of independence?

4.1 We welcome responses to the proposals we set out in this consultation, and the specific questions we have asked, by 10 March 2017. Please send responses to electricitySOreform@ofgem.gov.uk.

Role of the SO

4.2 Once we have considered responses to the proposed objectives for, and roles of, the SO (set out in chapter 2 of this consultation), we aim to make the final decision on our policy approach in the summer. This policy decision will then need to be implemented by making changes to the licence.

4.3 As noted in chapter 2, we think that many of the changes required do not need specific licence changes and work can commence now.

4.4 Where licence changes are needed, we intend to work closely with NGET and other relevant parties in developing specific change proposals. We also intend to consider the right balance between licence obligations and different types of incentives on the SO as part of a fundamental review of our approach to SO incentives.

4.5 We are currently consulting on our initial proposals for how we incentivise the SO in the interim period, 1 April 2017 to 31 March 2018, and will publish a consultation on our initial thinking for the longer-term scheme shortly.

4.6 We hope to be in a position to consult on the possible licence changes associated with the role of the SO later this year. Subject to the responses to that consultation we would expect to issue a statutory consultation in early 2018 before making a final decision later that year.

Delivering a more independent SO

4.7 We will consider the responses to the questions asked in chapter 3 before making any final decisions regarding separation or governance of the SO.

However, we will now start work looking at the detail of which changes might be needed to enable the partial licence transfer from NGET to NGSO.

4.8 We expect to publish our final policy decision on the separation of NGSO and NGTO, and what additional conditions we would require as part of this, in the summer. This policy decision would then need to be implemented through licence changes, and would be contingent on NGET bringing forward its application to partially transfer its licence to the new NGSO company as proposed.

4.9 We consider April 2019 an appropriate target date for separation of NGSO and NGTO, should we decide that is the right outcome. Our intention is to implement our proposals at the start of a financial year due to the complexity of mid-financial period implementation as discussed at paragraph 3.78.

4.10 We consider NGET could still take some steps to increase separation ahead of that date, for example moving forward with physical separation measures and piloting new ways of working for the separate SO and TO functions in 2018.

4.11 We will work with NGET to understand and assess the efficient separation costs to support it in taking timely action. We propose that we will consult on the cost allowances it would receive for separation measures alongside or soon after our final policy decision in the summer. We would then anticipate making a decision on the cost allowances in the summer.

Assessment of impacts

4.12 Our initial assessment of impacts related to these proposals are included in Appendix 2. We welcome stakeholders' views on the nature and scale of impacts discussed, including views on any additional benefits and costs not outlined in this assessment. We will finalise our impact assessment as part of our policy decision planned for the summer.

Appendices

Index

Appendix 1 - Consultation Response and Questions

1.1. Ofgem would like to hear the views of interested parties in relation to any of the issues set out in this document.

1.2. We would especially welcome responses to the specific questions which we have set out at the beginning of each chapter heading and which are replicated below.

Responses should be received by 10 March 2017 and be sent to electricitySOreform@ofgem.gov.uk

1.3. Unless marked confidential, all responses will be published by placing them in Ofgem's library and on its website www.ofgem.gov.uk. Respondents may request that their response is kept confidential. Ofgem shall respect this request, subject to any obligations to disclose information, for example, under the Freedom of Information Act 2000 or the Environmental Information Regulations 2004.

1.4. Respondents who wish to have their responses remain confidential should clearly mark the document/s to that effect and include the reasons for confidentiality. It would be helpful if responses could be submitted both electronically and in writing. Respondents are asked to put any confidential material in the appendices to their responses.

1.5. Any questions on this document should, in the first instance, be directed to:

Stathis Mokkas
Electricity System Framework
9 Milbank, London, SW1P 3GE
0207 901 1876
Stathis.Mokkas@ofgem.gov.uk

Chapter: Two

Question 1: What are your views on our proposed objectives for the SO (set out in paragraph 2.1)?

Question 2: What are your views on our expectations for how the SO should seek to achieve these objectives?

Question 3: Do you agree with our proposals for what licence changes are needed to support these objectives?

Question 4: What are your views on the extent to which we should set specific or general obligations for the SO?

Chapter: Three

Question 1: Do you agree that greater separation between NG's SO functions and the rest of the group is needed?

Question 2: What are your views on the additional separation measures we are proposing?

Question 3: What are your views on our proposed approach for implementing these changes?

Chapter: Four

Question1: What are your thoughts on our proposed approach for implementing the proposed changes set out in this consultation?

Question 2: What further evidence should we consider in finalising our impact assessment of the proposals on the SO's roles and level of independence?

Appendix 2 – Initial impact assessment of our proposals

Title: Future arrangements for the electricity system operator: its role and structure **Division**: Energy Systems **Team**: Electricity System Framework **Type of IA**: Qualified under Section 5A UA 2000	**Impact Assessment (IA)**
	Date: 12 January 2017
	Stage: Initial
	Source of intervention: Domestic
	Type of measure: Electricity System Operator role and governance change
	Contact for enquires: electricitySOreform@ofgem.gov.uk

Summary: Intervention and Options

Strategic Outcomes	Key word description
Lower bills than would otherwise have been the case.	SO will take forward changes to the way it procures balancing services, and around the transparency of processes, to drive efficiency. Allow new technologies and business models to have the opportunity to compete on a level playing field with existing providers of system services. Facilitate the exchange of information across the Transmission and Distribution boundary and the optimal use of flexible resources for system and network operation. Agreed process for optimising investment across the Transmission and Distribution boundary and clear contractual accountabilities across the interface. Increased independence of the SO will result in market participants having more confidence in the impartiality of the SO in discharging its

	obligations across a range of activities. This includes supporting the SO's proposed role in competition for certain onshore transmission assets, which will drive savings in the costs of developing those assets.
Reduced environmental damage both now and in the future.	A more independent SO that is working more closely with DNOs to create a whole system view can identify and help speed up connections for low carbon generation. Greater emphasis on flexibility sources, new technology and a level playing field for all participants can help low carbon business models.
Improved reliability and safety.	Allowing more effective preparation for future system operability challenges. Ensuring that potential future challenges to the system arising at lower voltage levels are identified and managed effectively.
Better quality of service, appropriate for an essential service.	Limited impact (no direct relationship between SO and consumers).
Better Social Outcomes.	Limited impact (no direct relationship between SO and consumers).

Monetised Impacts (£m)

Business Impact Target Qualifying Provision	Non-qualifying.
Business Impact Target (EANDCB)	N/A
Net Benefit (Explain the basis of monetised impacts eg. NPV or other).	Monetised impact not available. A switching point analysis has been undertaken.

Hard to Monetise Impacts

Describe any hard to monetise impacts, including mid-tem strategic and long-term sustainability factors

Particularly complex to quantify and monetise the efficiency and dynamic benefits of opening markets to competition and improving coordination in network planning where the future system needs are highly uncertain.

A major benefit of this proposal will be mitigating conflicts of interest within National Grid, meaning that the SO can play a greater role across a number of areas that can yield significant benefits given the SO's expertise and knowledge.

Overall we consider the impact on security of supply, and on Great Britain's ability to meet national energy targets to be positive.

Rationale for intervention, objectives and options

What is the problem under consideration? Why is Ofgem intervention necessary?

We think that the SO's role needs to evolve, to ensure it is well placed to both respond to and help facilitate the transformation of the electricity system over the coming decades.

We also think further separation between National Grid's electricity SO and electricity Transmission Owner (TO) functions would be in the interest of consumers. We have been working closely with BEIS and National Grid on the options and are proposing that the SO become a more independent company within National Grid Group (NG Group).

What are the policy objectives and intended effects?

A legally separate SO to mitigate actual or perceived conflicts of interest.

The SO to think more widely about how it can drive greater efficiency in balancing, and also how its actions in the short term can impact wholesale costs in the long term.

The SO to take a more active and leading role in influencing the future development of competitive markets.

The SO to have a key coordinating role (alongside other network companies) in ensuring that individual issues or system needs are looked at as part of the whole picture.

The SO to have a leading role in identifying the right projects for tendering and in developing projects before a tender is run.

What are the policy options that have been considered, including any alternatives to regulation? Please justify the preferred option (further details in Evidence Base)

Do nothing option
Under this option, we would see the continuation of the current arrangements with NGET undertaking both the SO and TO responsibilities. NGSO would not be created as a separate entity within National Grid Group. The new proposed roles for the SO discussed in Chapter 2 would not be taken forward due to perceived or actual conflicts of interest and/or lack of a clear mandate for the SO.

Will the policy be reviewed? Yes	**If applicable, set review date:** September 2019

Summary: Analysis & Evidence FULL ECONOMIC ASSESSMENT

Price base year:	Base Year:	Time Period:	Net Benefit (£m)		
2016	2016	30 years	**Low:**	**High:**	**Best Estimate:** N/A

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition)(Constant Price)	Total Cost (Net Present Value)
Best Estimate	**£47.5m**	**£6.49m**	**£166.87m**

Description and scale of key monetised costs by 'main affected groups'

National Grid estimates that it faces a one-off restructuring cost of £46.5m and average annual costs of £6.49m. We have not yet validated these estimates.

Ofgem will face a one-off implementation cost of around £1m. These cost estimates are based on implementing our proposals by April 2019.

We envisage that the separation of NGET will lead to some costs for industry, particularly those with contracts with NGET that will need to be transferred to NGSO. We do not expect these to be significant.

Other key non-monetised costs by 'main affected groups'.
(maximum of 5 lines)
We do not envision significant non-monetised costs to the main affected groups from our proposals.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition)(Constant Price)	Total Benefit (Present Value)
Best Estimate	Switching analysis		

Description and scale of key monetised benefits by 'main affected groups'

Particularly complex to quantify and monetise the efficiency and dynamic benefits of opening markets to competition and improving coordination in network planning where the future system needs are highly uncertain.

Other key non-monetised benefits by 'main affected groups'.
A clear separate identity for the SO, with its own governance structure and with SO employee bonuses based only on SO performance. This will mitigate the risk of bias towards National Grid's other business interests.

Ensure that NGTO and other NG businesses do not receive any information from the SO that could give them advantages relative to others, through clear separation of information and SO employees. This should help give confidence to market participants that there is a level playing field for all.

Allow new technologies and business models to have the opportunity to compete on a level playing field. Facilitate the exchange of information across the Transmission and Distribution boundary.

Key Assumptions/sensitivities/risks	Discount rate (%)
Current NGET synergies may be diminished	3.5%

BUSINESS ASSESSMENT (Option1)

Direct impact on businesses (EANCB) N/A	Score £m: N/A

Introduction

1.1. The role of the SO has grown over the years and it now has a more active role in transmission network development and the capacity market. Its role is continuing to evolve. The SO is expected to take on new functions to support the introduction of competition for onshore transmission assets.

1.2. The changing nature of generation, particularly the increase in small generation connected at the distribution level, is highlighting the need for a more holistic and coordinated approach to planning and operating the transmission and distribution systems. The increase in new sources of flexibility also means there is a need for the SO to review how it procures these services. This evolution of the activities the SO carries out means we need to carefully consider the governance of the SO, to ensure that there is sufficient focus on its important role and to address any actual or perceived conflicts of interest between National Grid's SO functions, TO functions and other business interests.

1.3. In November 2015 Government ministers expressed the desire to make the SO more independent. We have worked closely with the department of Business, Energy and Industrial Strategy (BEIS)[37] and National Grid Electricity Transmission (NGET) to consider how the SO might be reformed to make it more flexible and independent. This builds on previous work we have undertaken to enhance the role of the SO through our Integrated Transmission Planning and Regulation (ITPR) project.

1.4. We consider further change is needed to:

- The SO's roles, to ensure it is well placed to both respond to and facilitate the transformation of the electricity system. These changes include both new roles for the SO and clarifying our expectations of how it will undertake existing roles.

- The structure of the SO, to mitigate conflicts of interest. The SO role is currently carried out by National Grid Electricity Transmission (NGET), which is also the owner of the transmission network in England and Wales. NGET is part of the wider National Grid Group (NG Group) that also has other relevant interests, including interconnector businesses.

1.5. In coming to our views on the additional roles for the SO and on increased separation we have considered how these changes would affect existing and future consumers and industry participants. We have also had regard to potential social and environmental impacts.

1.6. Our initial view on the benefits and costs of these proposals are summarised in the main body of this consultation. This appendix details our current initial assessment of impacts related to our proposals. It sets out the effect of each element of our proposals on different groups and the expected contribution to

[37] And formerly the Department of Energy and Climate Change (DECC)

strategic and sustainable energy objectives.

1.7. Where possible and credible to do so at this stage, we have tried to monetise the costs and benefits. Given the uncertain nature of the future energy system we have not undertaken fully quantified modelling of the range of impacts as we do not think this can be done robustly. However, we have carried out a switchover analysis within this Impact Assessment.

It should be noted that we expect to update this initial impact assessment once we further develop our proposals.

Cost benefit analysis

1.8. Overall, we see that the main costs will result from the upfront and ongoing costs to National Grid from having to separate the SO and TO businesses, together with some additional costs from undertaking new roles.

1.9. The main benefits will result from mitigating conflicts of interest within National Grid, meaning that the SO can play a greater role across a number of areas that can yield significant benefits given the SO's expertise and knowledge.

1.10. We expand on these costs and benefits further below. In assessing these, our focus is on comparing the proposal for separating the SO and TO within National Grid Group, with the SO taking on further roles, relative to the current arrangements.

Counterfactual

1.11. For the avoidance of doubt, all costs and benefits of our policy proposals have been assessed against a 'do nothing' counterfactual. We assume the continuation of the current arrangements with NGET undertaking both the SO and TO responsibilities. NGSO would not be created as a separate entity within National Grid Group. The new proposed roles for the SO discussed in Chapter 2 would not be taken forward due to perceived or actual conflicts of interest, and we would not provide further guidance on our expectations of the SO given its current licence obligations.

Costs

1.12. As noted above, we expect the main costs of our proposals to be the costs NGET incurs from separating the SO and TO, complying with the additional conflict mitigation conditions we envisage, and from undertaking some new roles (though we expect that in some areas the SO can enhance how it undertakes existing roles without requiring new funding).

1.13. NGET has provided its preliminary view of the cost of separating NGET into NGSO and NGTO. These are shown in the table below. We intend to allow the new NGSO and NGTO companies to recover reasonable and efficiently incurred costs that are additional to what has been provided for under the RIIO-T1 settlement.

1.14. **It is important to note that we have not yet assessed the cost estimates that NGET have provided**, and when we do we may determine that some of these costs do not meet these criteria. Equally, these are only provisional cost figures from NGET, and it has noted its final submission to us is likely to vary

from the figures provided here.

1.15. The costs shown here do not include any additional costs that we allow as a result of NGSO taking on new or increased roles. We expect there could be some additional costs where the roles proposed go beyond what was covered in the RIIO-T1 settlement. There is a high degree of uncertainty as to the scale at this stage, so we will look to include costs estimates when consulting further on potential licence changes in relation to new SO roles.

1.16. The costs that we allow the NGSO and NGTO companies to recover will feed through to energy consumers through use of system charges.

Table 1: Initial National Grid cost estimates (2015/16 prices)

		Description	Upfront cost	Ongoing annual cost
SO:TO separation	Business change	Costs (both internal and external resources) to deliver the business change activities that facilitate separation of the SO and TO and adoption of new roles in the SO. 1) Design boundary between SO and TO 2) Develop detailed operating model for new entities 3) Licence drafting to reflect changes 4) Lead industry code changes to implement separation. Includes content development and stakeholder engagement 5) Implement operating model 6) Programme management to drive the programme, coordinate workstreams, governance, programme controls.	£24.6m	£0.25m
	Governance	Running costs of the new NGSO board including salary provisions for three Sufficiently Independent Directors, audit services, financial reporting analysis and manager, a compliance officer, and company secretariat.	£0	£0.4m
	Employees	Salary provisions for new employees. New roles created due to redefining the boundary between the SO and TO, or new roles duplicated to ensure appropriate separation in "strategic" shared services.	£1.7m	£4.66m
	Buildings	The provision of new office facilities and installation of key systems for new distinct businesses, avoiding uncontrolled TO / SO interaction. Complete separation of a wing of National Grid House in Warwick to house NGSO. Proposal is for creating a separate working environment including separate security entrance, canteen and other services.	£7.5m	£0.75m
	Information services (IS)	Soft separation of operational IS systems eg. Industrial energy management software (IEMS). This involves partitioning of shared IS systems to ensure that the TO only has access relating to its own assets and all SO specific information is separate. Creation of new separate accounting processes and frameworks for non-operational IS systems eg. SAP and HR systems.	£11.5m	£0.05m
	Financial	Administrative costs from new NGSO having to obtain a credit rating. Legal, actuarial and administrative costs involved in ensuring pension arrangements are kept whole and reflect new company structures.	£1.2m	£0.38m
Total			**£46.5m**	**£6.49m**

1.17. We envisage that the separation of NGET will lead to some costs for industry, particularly those with contracts with NGET that will need to be transferred to NGSO. Our expectation is that these costs will be low as most contracts (those entered into under the CUSC) can be novated by modifying the CUSC. However, NGET expects that a small proportion (particularly, those relating to commercial balancing services) will need to be novated individually, which means the counterparties could face some legal costs. Our expectation is that this process should be relatively straightforward and so we do not envisage this would entail significant costs.

1.18. We will incur some costs in implementing these proposals over the next two years. We expect these to be around £1m in total.

Benefits

1.19. We think that our proposal to accept the partial transfer of NGET's licence to a new NGSO company with associated new conditions will help to significantly mitigate conflicts of interest within National Grid. Specifically, it will:

- Create a clear separate identity for the SO, with its own governance structure and with SO employee bonuses based only on SO performance. This will mitigate the risk of bias towards National Grid's other business interests.

- Create a stronger focus for the SO to drive change and innovation to support the transformation of the energy system in an efficient way.

- Ensure that NGTO and other National Grid businesses do not receive any information from the SO that could give them advantages relative to others, through clear separation of information and SO employees. This should help give confidence to market participants that there is a level playing field for all.

1.20. We consider these changes will bring benefits to consumers in a number of ways. Greater separation will also support the SO in playing a more proactive role in areas where it already has responsibilities and in taking on new roles, which would not all be possible, under current arrangements due to potential conflicts of interest. We discuss these benefits below against our objectives for the SO, as set out in chapter 2.

Objective 1: overseeing a safe, resilient and cost-effective electricity system

1.21. Whilst the SO already has a clear responsibility for overseeing the safety and resilience of the transmission system, our proposal makes clear that in doing this the SO should take a whole system view. Further, our proposal also seeks to ensure there is sufficient independence of the SO that other stakeholders have the necessary confidence in the SO taking on such a role. It will involve working more closely with TOs, DNOs, and other parties to ensure that the approach across both Transmission and Distribution networks is optimised to deliver the best overall outcome for consumers.

1.22. We expect this to yield savings for consumers by:

- Supporting more effective preparation for future system operability

challenges. Extending (in cooperation with DNOs) the System Operability Framework to ensure that potential future challenges to the system arising at lower voltage levels are identified will give more time to identify the best way to manage these challenges effectively. The alternative – reactive management of challenges as they arise – would involve higher costs as fewer options would be available in that shorter timeframe.

- Ensuring clarity on the roles and responsibilities of market participants. With greater independence, the SO is better able to play a more active role in working with industry to move to a new operating model, taking account of the greater interactivity between demand and supply entities.

- Ensuring that the most efficient solutions to system needs can be identified, regardless of whether they involve investment on the Transmission network or Distribution network, or would involve a non-build solution (such as use of flexibility resource).

1.23. At this stage we do not think we can robustly quantify these benefits, due to uncertainty over how the system will evolve and therefore the extent to which taking a whole system approach will yield benefits over the traditional and more separate transmission and distribution approach. We do think that the trends towards much more localised generation and scope for smart solutions do mean that interactivity between Transmission and Distribution systems is growing significantly. We also note that the importance of taking a whole systems approach to system planning and operation has been highlighted in detail in the IET/Energy System Catapult's Future Power System Architecture (FPSA) work[38]. Whole system optimisation is likely to maximise the use of renewable energy sources by reducing curtailment, contributing to both decarbonisation and renewable targets. Other benefits include reducing the costs of network congestion.

1.24. The three TOs' capital expenditure on network investment is currently expected to be £15.64bn[39] for the RIIO-T1 period. This equates to an annual spend of £1.955bn. For comparison, this is higher than actual spend during the TPCR4 period where annual expenditure was 0.89bn.[40]

1.25. The DNOs' total forecast expenditure on the network is expected to be £27.39bn[41] for the RIIO-ED1 Period (2015/16 prices). This equates to an annual spend of £3.42bn. For comparison, this is broadly in line with actual spend during the DPCR5 period where annual expenditure was 3.24bn.[42]

1.26. Given this scale of cost, even a relatively small efficiency saving across the

[38] http://www.theiet.org/sectors/energy/topics/energy-infrastructure/articles/future-power-update.cfm
[39] This figure is based on a £13.01bn forecast expenditure in 2009/10 prices inflated to 2015/16 prices using the RPI index.
[40] All prices are in 2015/16.
[41] This figure is based on a £25.84bn forecast expenditure in 2012/13 prices inflated to 2015/16 prices using the RPI index.
[42] All prices are in 2015/16.

Transmission and Distribution networks could deliver real benefits to consumers.

Objective 2: competition and efficiency across all aspects of the system

1.27. We think our proposals could lead to significant benefits in this area.

1.28. By making clearer our expectations on the SO with respect to **driving market-based approaches**, we envisage the SO will take forward changes to the way it procures balancing services, and around the transparency of processes, to drive efficiency. This includes greater collaboration with DNOs to ensure that flexibility resource is utilised in a coordinated way – mitigating the risk that the SO and a DNO might take conflicting actions[43] which would lead to higher cost than necessary, and ensuring that a resource is used where it has most value.[44] We would also expect it to provide greater transparency and predictability to market players, which should help reduce costs by giving new providers greater confidence to invest. Finally, we expect that the increased use of competitive approaches could drive value by reducing the cost of ancillary services relative to bilateral procurement.

1.29. We also expect the SO to optimise access to markets and identify interactions and synergies across different markets. We expect this should support identification of options to improve whole system efficiency, for example by identifying that a change in one market could support more efficient outcomes in others and leading to greater competition and efficiency by reducing fragmentation across markets.

1.30. We do not think it is possible to robustly quantify these potential benefits. For instance, it is difficult to assess the extent to which it will be possible to use competitive approaches or identify synergies across markets ahead of a more detailed evaluation (by the SO). In addition, while there is anecdotal evidence that some SO and DNO actions are currently non-optimal, there is a lack of data to produce a quantified estimate as to the extent of this. However, the overall costs involved in managing the system are significant and expected to grow further in future. For example, the annual cost of balancing the transmission system is around £850million and has grown by 25% over the last 5 years. If these changes can help mitigate these cost rises by only a small amount then this would still be a meaningful benefit.

1.31. Functioning and effective markets will provide efficient investment signals to market players as well as create the opportunity for players to diversify their revenue streams over the lifetime of the asset. This will contribute to the delivery of investments in the right location and at the right time. The savings to the end consumer could be significant – with greater competition in the provision of services, the cost of whole system planning and balancing is likely to decrease. Savings are likely to emerge through reduced wholesale costs as higher cost plants are displaced on the system, reduced cost of curtailing renewable generation especially if flexibility is sited in the right location, and reduced balancing and network congestion costs.

[43] For instance, Active Network Management may, in some cases, result in DNOs counteracting actions taken by the System Operator. Effective coordination is needed to avoid this and ensure the most efficient overall outcome.
[44] We discuss the potential benefits of our proposals in this area in Chapter 2.

1.32. We are also proposing that the SO should have a significant role in **supporting the extended use of competition in Transmission**. As set out in our separate consultations and impact assessment in this area[45], it is particularly complex to quantify and monetise the efficiency and dynamic benefits of opening markets to competition. However, we can make a qualitative assessment of the benefits, informed by a theoretical understanding of the benefits of introducing competition and by experience of similar competitive regimes. Further, we can draw on quantitative assessments of comparable competitive regimes as an illustration.

1.33. Effective competition can enable efficient costs to be revealed. Within some set parameters of project scope and regulation, the pressure of competition encourages parties to reveal the true cost of constructing and operating a project. The introduction of competition onshore may, over time, have downward pressure on the capital and operational costs elsewhere on the onshore network, where the RIIO model is in place. Competitive pressure and the involvement of new parties is also likely to drive innovation. On an individual project basis, innovation can result in lower costs and better value for consumers as bidders seek to create innovative and cost saving solutions in order to submit competitive bids. Also, we would expect bidders in a competitive process to put forward financing solutions that provide value for money to consumers. Competition will bear down on the cost of equity and debt, as bidders seek out investors and lenders.

1.34. Ofgem's offshore regime, and recent international examples of introducing competition, highlight that there are significant savings in introducing competition in networks. Ofgem's offshore regime has been estimated to have brought consumers net savings of 23-34% of the value of Offshore Transmission Owner (OFTO) projects, when compared to regulated counterfactuals. Although a direct read across is not possible to onshore projects, this provides a strong indication that competition in GB electricity transmission can bring significant savings. Internationally, the Alberta Electricity System Operator (AESO) used a competitive process to appoint a party to develop, build, finance, own and operate an onshore transmission asset. AESO was able to achieve a 20% cost saving over its initial estimates due to the competitive process.

1.35. In our October 2015 consultation on onshore competition[46], we said that the SO should have an increased role in identifying the long term needs of the system and develop and assess options to meet those needs through the Network Options Assessment Report.

[45] Extending competition in electricity transmission: criteria, pre-tender and conflict mitigation arrangements
https://www.ofgem.gov.uk/system/files/docs/2016/05/ecit_may_2016_consultation_0.pdf
[46] Extending competition in electricity transmission: arrangement to introduce onshore tenders:
https://www.ofgem.gov.uk/sites/default/files/docs/2015/10/ecit_consultation_v6_final_for_publication_0.pdf

1.36. We have previously set out our thinking[47] on why the SO would be well placed to carry out preliminary works for being competed during RIIO-T2. This is an area we will be consulting further on at a later date.

1.37. These new roles are critical to the competitive process and it is important that prospective bidders have confidence that the SO would be undertaking them impartially, and not favouring any of its businesses (which could be intending to participate in the tender). We consider that a perception of bias hinders trust in the competitive process and could potentially lead to fewer bids. This in turn could result in consumers having to pay more for the infrastructure that is being built.

1.38. We think the separation measures we propose between the SO and the NGTO business would provide bidders with confidence in the integrity of the process. We consider these measures are critical to helping unlock the prospective savings from extending the use of competition in networks.

Objective 3: promoting innovation, flexibility and demand side solutions

1.39. We consider our proposals will create benefits in this area by allowing new technologies and business models to have the opportunity to compete on a level playing field with existing providers of system services. This will bring benefits to consumers as it should lower the cost of operating the system (relative to the counterfactual of continuing with the current arrangements) over time.

1.40. Levelling the playing field includes both access to revenue streams by market participants (a functioning market framework allowing parties to most effectively purchase what they need) and the manner in which charges (eg. transmission) are allocated to those who create them. With the changing interactions between supply and demand and the increased levels of distributed energy resources on the system, ensuring that both the demand side and the supply side play a part in the future energy system is likely to deliver consumer benefits.

1.41. Greater competition in the provision of flexibility to all market participants as well as unlocking access to these markets for flexibility providers will deliver a lower cost of operating the system (relative to the counterfactual of continuing with the current arrangements) over time.

1.42. Promoting innovation and providing a route for new players and business models to emerge will also increase competition in the provision of services to all market participants, including the SO thereby further reducing whole system costs. Our proposals will do this by providing greater clarity as to the expected approach by the SO: being clear that we expect the SO to take a proactive role in identifying necessary changes to market and industry rules, and its own approach to procuring balancing services, to ensure they do not create undue barriers to new approaches being able to participate. We consider that separating the SO from the NGTO company will help in this regard as it will give it greater legitimacy to lead changes to industry frameworks.

[47] Extending competition in electricity transmission: criteria, pre-tender and conflict mitigation arrangements
https://www.ofgem.gov.uk/system/files/docs/2016/05/ecit_may_2016_consultation_0.pdf

1.43. We do not believe it is possible to robustly quantify what savings our proposals will create. For example, because these proposals would be acting as part of a wider suite of measures aiming to address barriers to the efficient development of new flexibility resources.[48] Overall, the potential benefits of flexibility are substantial. As an example, modelling undertaken for the National Infrastructure Commission suggested that a more flexible system could provide gross benefits to consumers ranging between £2.9bn and £8bn a year in 2030.[49] We consider these proposals will play an important part in unlocking the full extent of these benefits.

Aggregate consumer impact and switchover analysis

1.44. While difficult to quantify, we think that, taken together, the likely benefits of our proposals will significantly outweigh the costs. We think consumers will be the ultimate beneficiaries of our proposals, principally through lower use of system charges, continued resilience of the system in spite of increasing challenges, and support for decarbonisation of our electricity supplies. There could also be other cost reductions as a result of improved cross-market efficiency, for example by reducing wholesale or capacity mechanism prices.

1.45. Using National Grid's cost estimate of an upfront cost of £46.5million, an ongoing annual cost of around £6.49million, and £1m cost to Ofgem, NPV costs over a 30 year period would be approximately £166.87million. In order to offset this cost, the changes in role and structure for the SO would need to deliver a 0.19% efficiency saving in: a) combined transmission and distribution network investment; and b) balancing costs over that 30 year period.[50]

Distributional Impacts

1.46. We consider that future consumers may stand to gain somewhat more than present consumers as the full benefits of these changes may take time to come through. Otherwise, we do not foresee any particular distributional impacts among consumers, including no additional impacts from our proposals on vulnerable customers as a subset of GB customers. However, consumers who have lower incomes will see a greater relative improvement in the affordability of their electricity compared to continuing with the status quo.

1.47. Our proposals will affect industry participants differently.

1.48. The biggest impact from either of the two alternatives to the status quo on an

[48] https://www.ofgem.gov.uk/publications-and-updates/smart-flexible-energy-system-call-evidence
[49]National Infrastructure Commission: Smart Power https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/505218/IC_Energy_Report_web.pdf
[50] This calculation projects forward current balancing costs and average network investment costs over the current and previous price controls.

individual market participant would be on National Grid. However, as stated above we intend to allow them to recover efficient costs where our proposals require additional activity above that allowed for under the RIIO-T1 settlement.

1.49. Other industry participants will be less directly impacted.

1.50. Generators and other industry participants are expected to see the benefit of the SO playing a more active role in the promotion of innovation, flexibility and demand side solutions.

1.51. Our desire to see the most efficient whole system outcome could involve some distributional impacts between network companies. For example, the increased coordination we envisage could identify that it is cheaper to address a transmission network issue by investing on a distribution network. This would involve the DNO incurring additional costs whereas the SO or TO would save. We envisage there could be a need for transfers between the companies to reflect this and will consider whether there are any regulatory barriers preventing this. We are keen to work with, and welcome views from, industry (including workgroups under the ENA's Transmission and Distribution Interface Steering Group) on whether there are any regulatory barriers preventing this and what potential solutions might be.

1.52. As the SO already has a role to play across GB we do not expect there to be any significant different impacts in different geographical parts of GB.

Impact on competition

1.53. Driving competition and efficiency across all aspects of the system is one of the key objectives of our proposals, as covered under the benefits section above.

Strategic and sustainability considerations

1.54. We have considered how our proposals would contribute to a sustainable and secure energy supply for GB consumers. Please note that some of these benefits have been identified in the previous sections.

1.55. We believe that our proposals will help support the transition to a low carbon system through a number of ways:

- Helping manage the challenges created by the uncertainty around how the system will evolve. For example, by ensuring that the SO (working with others) is monitoring and anticipating future challenges to system operation so that it is well prepared to detail with a range of plausible outcomes.

- Helping ensure that market and industry frameworks are adapted to allow new technologies and business models to compete on a level playing field with existing providers.

- Helping ensure that there is a holistic view of how the electricity system as a whole is being planned and operated, which is likely to become even more important as the distinction between transmission and distribution systems becomes more blurred due to the growth of distributed generation and active management of local networks.

1.56. Separation of the SO and TO within National Grid should also give some flexibility for the SO's role to evolve further in future without creating undue concerns about conflicts of interest. However, as stated in chapter 3, we do consider that there may be merit in moving to a fully independent SO in time. We consider that the changes we are proposing now will not inhibit such a step in future. In contrast, it would make such a change easier as the SO company and regulatory framework would already have been clearly distinguished from that of the NGTO company.

Risks and Uncertainties

1.57. This Impact Assessment has evaluated our current proposals against the counterfactual of continuing with the status quo. While difficult to quantify, we consider that, taken together, the likely benefits of our proposals will significantly outweigh the costs.

1.58. NGET's ownership of TO assets in England and Wales (E&W) does mean that consumers benefit from some synergies in relation to one party planning, delivering and balancing the E&W network. For example, in network planning (as a TO) NGET is incentivised to make decisions that help reduce constraint costs. We recognise that with greater separation of the SO and TO functions, there is a risk current synergies may be lost or diminished. However, we consider that our policy proposals are designed in a way that places significant emphasis on optimal coordination between the two entities when it is in the best interest of GB consumers. The relationship between NGSO and NGTO will need to be contractualised in much the same way as the relationship between the SO and the Scottish TOs. This will be done through the licence and will require changes to industry codes (in particular the SO TO code (STC)). Chapter 3 sets out our proposed approach for making the relevant licence changes. We also expect NGET to move forward in a timely manner with the necessary code changes.

1.59. We recognise there are currently efficiencies to be gained from greater coordination and collaboration between the SO and the Scottish TOs. There may be occasions where if the TO were to increase its expenditure, for example by moving an outage, the SO could reduce its constraint costs. This in turn would minimise total system costs. However, there is currently no mechanism through which the SO can fund the TOs for these services. We are therefore considering introducing a mechanism alongside the SO incentives arrangements that apply from April 2017 onwards.

1.60. We recognise there are uncertainties that may limit the beneficial impact of our proposals. We have highlighted two areas below. Please note that this is not intended to be an exhaustive list, and we expect to update this once we make decisions on our proposals.

- A role for the SO under our proposals is making sure it takes into account a whole system view in overseeing the safety and resilience of the transmission system. This would involve working more closely with TOs, DNOs, and other parties to ensure that the approach across both transmission and distribution networks is optimised to deliver the best overall outcome for consumers. The magnitude of savings for the consumer from greater transmission and

distribution interactions is dependent on the levels of embedded generation that will come on the system. Whilst there can be no way to know for certain what that level may be, National Grid's Future Energy Scenarios provides a good indication. According to its latest analysis, under the Consumer Power scenario almost 89 GW will be connected at the local level by 2040, making up 49% of total generation capacity (compared to the current level of 23%). Therefore, we consider that whilst there is an element of uncertainty, there is likely to be a net consumer benefit in this area.

- One of the uncertainties that can impact on the level of consumer benefit from onshore competition is around the pipeline of projects meeting our criteria for competitive tendering and the exact costs and benefits of the same. However, as our separate Impact Assessment shows[51], there are considerable benefits to consumers from extending competition onshore.

[51]Extending competition in electricity transmission: impact assessment https://www.ofgem.gov.uk/system/files/docs/2016/05/extending_competition_in_electricity_transmission_updated_impact_assessment_0.pdf

Appendix 3 - Feedback Questionnaire

1.1. Ofgem considers that consultation is at the heart of good policy development. We are keen to consider any comments or complaints about the manner in which this consultation has been conducted. In any case we would be keen to get your answers to the following questions:

1. Do you have any comments about the overall process, which was adopted for this consultation?

2. Do you have any comments about the overall tone and content of the report?

3. Was the report easy to read and understand, could it have been better written?

4. To what extent did the report's conclusions provide a balanced view?

5. To what extent did the report make reasoned recommendations for improvement?

6. Please add any further comments?

1.61. Please send your comments to:
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