# Future Arrangements for the Electricity System Operator: Response to Consultation on SO Separation

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**Overview:**

In January 2017, we consulted on future arrangements for the electricity System Operator's (ESO) role and structure. This document is our follow up to ESO structure part of the consultation and outlines our direction of travel on the future separation arrangements for the ESO.

# Context

National Grid Electricity Transmission plc (NGET) is the electricity System Operator (ESO) for the electricity transmission network in Great Britain. As such it is responsible for the day to day operation of the system and, in addition to its system operator role, NGET is also owner of the transmission system in England and Wales.

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 ESO to review how it procures these services. This evolution of the activities the ESO carries out means we need to carefully consider the governance of the ESO, 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 ESO functions and other business interests, such as the electricity TO and the electricity interconnectors.

The role of the ESO has grown in recent years. As part of the Electricity Market Reform (EMR), the SO has become the delivery body for the capacity market and feed-in tariffs for contracts for difference. In March 2015, the Integrated Transmission Planning and Regulation (ITPR) project concluded that the ESO should take on enhanced roles to identify the need for investment in the transmission network, and coordinate and develop investment options. The ESO is also expected to take on new functions to support the introduction of competition for onshore transmission assets.

In November 2015, Government ministers called for greater independence of the system operator to allow it to take on these enhanced roles. We have been working closely with the Department for Business, Energy and Industrial Strategy (BEIS) and NGET to consider how the ESO can be reformed to make it more flexible and independent.

# Associated documents

Future arrangements for the electricity system operator: its role and structure
https://www.ofgem.gov.uk/publications-and-updates/future-arrangements-electricity-system-operator-its-role-and-structure

Future arrangements for the electricity system operator: the regulatory and incentives framework
https://www.ofgem.gov.uk/publications-and-updates/future-arrangements-electricity-system-operator-regulatory-and-incentives-framework

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 electricity System Operator (ESO) has a central role in planning and operating the electricity system. The role and the form of the ESO needs to adapt to keep pace with a system that is going through a process of change. In January 2017, we issued a joint statement with BEIS and National Grid plc, setting out our joint aspiration for the future of the ESO and how it might be delivered.

At the same time, we issued a consultation document that was the first step towards delivering on the joint statement. This consultation invited views on our proposals for the ESO to take on new roles and the need for greater clarification relating to the way in which it carried out existing roles.

We also consulted on proposals regarding the structure of the ESO within National Grid plc and, in particular, the need to mitigate any actual or perceived conflicts between National Grid's role as ESO and other roles such as its ownership of the transmission network in England and Wales.

Stakeholders were invited to provide views on proposals to introduce increased separation of the ESO within National Grid and how this separation should be achieved. They were broadly supportive of our proposals relating to the role of the ESO. Many respondents welcomed the ESO adopting a longer-term approach and agreed that it was crucial for the ESO to work closely with industry participants in order to meet its objectives. We have since published a working paper on the regulatory and incentives framework of the ESO[1], and intend to hold further stakeholder workshops on this in the autumn.

With respect to the structure of the ESO, stakeholders generally agreed that increased separation of the ESO within the National Grid Group, with a separate licence for the transmission owner and system operator parts of the Group was a significant step forward. A key message from stakeholder responses was that the separation needed to be, and be perceived to be, as robust as possible. However there was a variety of views as to how this could be achieved. Many of the respondents encouraged Ofgem to ensure that appropriate safeguards, scrutiny and controls are implemented as the separation progresses. With this in mind we have engaged with National Grid who have developed a proposed package for separation.

Following consideration of National Grid's proposed separation package and views of respondents, our view, informed by the stakeholders' responses to the consultation, is that we proceed with separating out the ESO within National Grid. We have concluded that the package proposed by National Grid would result in a clear

[1] Future Arrangements for the Electricity System Operator: Working Paper on the Future Regulatory Framework: https://www.ofgem.gov.uk/publications-and-updates/future-arrangements-electricity-system-operator-working-paper-future-regulatory-framework

improvement on the status quo and will result in a more independent SO, which has the potential of bringing benefits.

Given that the proposed separation retains the ESO within National Grid, we recognise that it may not resolve the issues of conflict completely and that risks remain that National Grid plc could continue to exert undue influence over the ESO. There are a number of measures included within the arrangements to mitigate this risk, including the creation of an ESO board (including independent directors and ESO managers being incentivised on SO performance only). Post implementation, we will keep the arrangements under review to ensure that they are effective in addressing the conflicts between the role of the ESO and other activities undertaken by NG.

This document is our follow up on our consultation and outlines our direction of travel on the future separation arrangements for the ESO.

# 1. Future arrangements for the ESO

**Background**

1.1. Over 65% of a consumer's annual electricity bill is made up of the costs associated with producing electricity, trading it in our wholesale market and transporting it over our electricity networks. The electricity system operator (ESO) sits at the centre of this electricity system. It has a number of different roles, from the day-to-day operation of the system, through to longer term network planning. The ESO 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 plc group.

1.2. The electricity system is undergoing significant change, as we seek to decarbonise our electricity supplies and make the most of the potential of new technologies and business models. As the electricity system transforms, we believe that the role and form of the ESO needs to adapt to keep pace with this. 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.

**Future arrangements for the ESO**

1.3. In January 2017, BEIS, Ofgem and National Grid issued a joint statement[2] which stated that a more independent ESO can realise benefits for consumers by enabling a more secure, competitive and flexible system. The statement set out our joint views that the ESO should be underpinned by a governance structure that mitigates any actual or perceived conflicts of interest, and is ready to adapt further as system challenges continue to evolve.

1.4. Alongside the joint statement, we issued two parallel consultations on the future arrangements for the ESO. One on its future role and structure[3], and another on the future regulatory and incentives framework[4].

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[2] Statement on the future of Electricity System Operation: https://www.ofgem.gov.uk/system/files/docs/2017/01/statement_on_the_future_of_electricity_system_operation.pdf

[3] Future Arrangements for the Electricity System Operator: its role and structure: https://www.ofgem.gov.uk/publications-and-updates/future-arrangements-electricity-system-operator-its-role-and-structure

[4] Future Arrangements for the Electricity System Operator: the regulatory and incentives framework: https://www.ofgem.gov.uk/publications-and-updates/future-arrangements-

1.5. In the first of these consultations, we set out our belief that change is needed to the structure of the ESO to mitigate any actual or perceived conflicts of interest. We proposed that the ESO should be a separate company, within National Grid plc, with its own specific licence, and with appropriate licence modifications to ensure sufficient separation between the ESO and other NG Group businesses. This document is our follow up to this part of the consultation and outlines our direction of travel on the future separation arrangements for the ESO.

1.6. However, this is only one aspect of a set of wider reforms to the ESO arrangements. In our January consultation, we also set out our belief that the ESO's roles in the energy system need to evolve to ensure it is well placed to both respond to and facilitate the transformation of the electricity system. In particular, we highlighted four areas where we believe the ESO's role needs to evolve: acting as residual balancer; facilitating competitive markets; facilitating a whole system view and supporting competition in networks.

1.7. In our parallel consultation on the ESO's future regulatory and incentives framework, published on 7 February, we also set out our initial views on how the future regulatory framework could be designed. In particular, we considered what combination of clear obligations and enforcement, incentives (both financial and non-financial) and good governance would be able to ensure the ESO maximises consumer benefits across each of its different roles.

1.8. On 11 July 2017, we published our follow-up to these aspects of the consultations and set out our latest thinking on the design of the future regulatory framework for the ESO in a working paper.[5] We set out a high-level model for the future regulatory framework, built around the four roles that we proposed in our consultations earlier in the year. It also explains our expectations for how the ESO may fulfil these roles and comply with its licence obligations.

1.9. We are now engaging with stakeholders on the detailed design of the future regulatory framework, including the specific incentives that could be applied to the ESO to drive its performance from April 2018 onwards. Please see our July working paper for more information on our timelines and next steps.

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electricity-system-operator-regulatory-and-incentives-framework

[5] Future Arrangements for the Electricity System Operator: Working Paper on the Future Regulatory Framework https://www.ofgem.gov.uk/publications-and-updates/future-arrangements-electricity-system-operator-working-paper-future-regulatory-framework

# 2. Proposed separation arrangements

**Summary**

This chapter outlines our direction of travel on the future structure of the ESO, following our consultation in January. As part of the consultation we have considered NG's proposals for separation. This includes creating a legally separate ESO within the NG Group as well as additional measures to mitigate any actual or perceived conflicts of interest.

We believe that NG's proposals for separation are a significant step forward for consumers compared to the status quo and will result in a more independent electricity SO. However, we intend to closely monitor the effectiveness of the separation and conduct a review in 2020-21. If necessary, we will consider additional licence requirements and/or other policy options such as a fully independent SO.

## Introduction

2.1. In January 2017, alongside our joint statement with BEIS and National Grid on the future of the ESO, we consulted on proposed changes to the structure of the ESO to make it more independent.[6] Following this consultation, National Grid submitted a package of measures to separate the ESO business from the rest of National Grid, which it believes will achieve the aims set out in January. We have carefully assessed these proposals, alongside the consultation responses we received from stakeholders and continue to consider that it is in consumers' interests for National Grid to proceed with its plans.

2.2. In the sections below, we summarise our January consultation, the responses we received from stakeholders, the package of separation measures submitted by National Grid and our views on this package. A more detailed outline of the individual components of this package, and our assessment of each, is included at the end of the chapter.

## Consultation and responses

### January consultation

2.3. Our consultation sought views on a range of measures which could apply to the future ESO to make it more independent from the rest of National Grid. This

[6] As described further in Chapter 1, this consultation also covered our views on the SO's future roles. Our follow-up to this aspect of the consultation is contained in our working paper on the future SO regulatory framework, published on 11 July 2017.

included making the ESO a legally separate company within the National Grid Group, with a separate licence. We also proposed additional measures to help mitigate any actual or perceived conflicts of interest. This included minimum standards in the following areas:

- **Governance** – A separate ESO board with at least two sufficiently independent directors.
- **Financial ring-fencing and creditworthiness of the ESO** - ESO specific credit worthiness requirement and ring-fences to ensure no cross-subsidies.
- **Information ring-fencing** – National Grid TO can access information on an equal basis to other TOs
- **Employees' and physical separation** – ESO staff located physically separate to NGET staff, ESO staff incentivised on ESO performance, restrictions on staff transfers between ESO and other parts of National Grid's business.
- **Shared services** – Shared services for specific services as a cost effective option.

2.4. These separation measures were outlined at a high-level, rather than providing detailed separation measures, to allow stakeholders to share their thinking on how these separation measures could be developed early on in the process. We proposed to implement these measures by making changes to the ESO licence.

2.5. The separation can be achieved with existing legislation. Therefore, we propose that this separation be achieved via an application by National Grid plc under Section 7A of the Electricity Act 1989 (Transfer of Licences). Under this legislation, National Grid would submit an application requesting to transfer the ESO functions in NGET's existing licence to a separate legal entity within the National Grid Group. If we decided to consent to the partial transfer of the existing NGET licence to the new ESO company, would be able to modify the licence as part of this process (following consultation) and impose appropriate conditions on the transfer.

2.6. As part of the consultation, we also published the proposed costs that NGET has submitted for upfront work to set up the separate ESO operation, and enduring costs for operating the SO until the end of the RIIO-T1 price control in 2021. At the time of the consultation, these were estimated to be £46.5m one-off costs and £6.5m p.a. enduring costs.

2.7. We invited stakeholders to comment on whether greater independence of the ESO was needed, whether the high-level separation measures that we had identified were appropriate or what areas needed to be developed further, what they thought of our proposed approach for implementing these changes, and whether there was any other evidence that we should consider.

**Stakeholder responses**

2.8. The consultation on the ESO's role and structure closed on 10 March 2017 and we received 39 responses from generators, trade associations and other interested industry partners. Responses which were not marked as confidential have been published on our website[7]. In addition to the formal consultation, we also held an industry workshop with stakeholders and have met with some stakeholders bilaterally to develop further our understanding of stakeholder views.

2.9. Overall stakeholders supported our proposals. There was widespread support for further separation between the ESO and electricity TO functions of National Grid and generally stakeholders felt that our suggested minimum standards for separation were a significant step forward in terms of independence of the ESO. Some stakeholders felt that in some areas stronger separation measures were appropriate. Stakeholders were also clear that the separation would need to be robust in order to address any actual or perceived conflicts, and that there needed to be a clear cultural shift within the ESO in order to facilitate this.

2.10. Further detail on the key messages from stakeholders in response to the SO separation arrangements are detailed below and in the table at the end of this chapter.

*Implementation approach*

2.11. There was widespread support amongst stakeholders for the proposed implementation approach, both in terms of timings and processes. Stakeholders agreed that using the Section 7A of the Electricity Act 1989 licence transfer process would help to ensure that consumer benefits are realised as soon as possible.

*Separation measures*

2.12. There was widespread support across stakeholders for the separation measures proposed in the consultation document. Stakeholders broadly viewed the proposed separation measures as a significant improvement on the status quo. However, some respondents across industry expressed views that the proposals did not go far enough and called for additional separation measures to be implemented to facilitate a full 'hard' separation. There was general support amongst the Big Six and the suppliers that responded, for the proposed separation measures, with a small number of these calling for even harder separation measures than proposed. Similarly, DNOs and companies operating across generation and transmission all supported greater separation measures.

[7] https://www.ofgem.gov.uk/publications-and-updates/future-arrangements-electricity-system-operator-its-role-and-structure

2.13. However, views on which aspects of separation should be harder varied amongst respondents. Some stakeholders felt that a separate office location, rather than physical separation on the same site, was important. Others felt that there should be minimal or no shared services and some expressed support for separate branding between the ESO and the rest of NG. There was a general recognition that harder separation would ultimately increase costs for consumers, although this was viewed by some as justified to ensure the ESO's independence.

2.14. A small number of respondents commented that the costs proposed by NGET for undertaking separation looked expensive and they urged Ofgem to scrutinise the costs.

## National Grid's proposed separation package

2.15. In line with January's joint statement, National Grid agreed that greater separation of the ESO from within the National Grid Group was needed. Since the consultation closed, it has submitted a set of proposals for separation which it believes will achieve the goals and aims included in the joint statement. It has indicated that it would be prepared to submit an application under section 7A of the Electricity Act to request the transfer of SO functions in NGET's existing licence to a separate legal entity within the National Grid Group and implement the proposed package of measures.

2.16. As well as proposals to create a legally separate company within the NG Group, it has put forward a number of supporting measures to address any actual or perceived conflicts of interest. This includes measures around governance, ESO and gas SO interactions, staff transfer, physical separation, shared services and culture and branding. Overall, National Grid stresses that it is committed to creating an impartial and transparent ESO within National Grid Group.

2.17. The development of these proposals has been an iterative process and we have engaged extensively with National Grid to ensure that its proposals are appropriate.

2.18. The key elements of National Grid's package are:

- **Governance** – A separate ESO board consisting of 7 members (3 National Grid Directors, 3 Independent Directors, 1 Chair who will be the Director of the ESO)
- **Employee Separation, Incentivisation and Transfer** – In principle all ESO staff will be employed by the ESO. Managers and executives will be incentivised on ESO metrics, with the exception of a small number of 'dual fuel' staff who will work across the electricity SO and the gas SO and be incentivised on gas and electricity SO performance only. This includes some senior managers in the ESO, including the ESO Director.
- **Physical separation** – The ESO will be physically separated from other parts of National Grid's business. National Grid's Wokingham office will

remain ESO only and the ESO headquarters will be located within a newly developed, physically separate part of the existing National Grid headquarters in Warwick, accessible via a separate site entrance to the rest of the NG building.

- **Shared services** – Shared transactional services, while strategic services will be shared under a business partner arrangement. There will be separate ESO regulatory capability.
- **Culture and branding** – National Grid will develop a distinct and explicit visual identify of the new "National Grid ESO", so that it will be obvious when stakeholders are dealing with the ESO rather than National Grid plc or other businesses in the group.

2.19. National Grid have proposed one off costs of £54.8m, and enduring costs of £8.5m p.a. to implement the separation. More detail on the individual aspects of National Grid's proposals is outlined in Appendix 1.

## Our response to the ESO separation consultation

### Our approach to assessing National Grid's proposals

2.20. In reaching our decision on ESO separation, we have considered a broad range of evidence, including stakeholder feedback, comparative cases of separation, and the overall impact on consumers.

2.21. Stakeholder feedback was gathered by inviting industry representatives to a stakeholder workshop to discuss our thinking and identify key stakeholder concerns early in the process. We then built on this evidence by undertaking our formal consultation and analysing stakeholder responses. We have also met with several stakeholders bilaterally to discuss any further thoughts or concerns.

2.22. We have made our decision by considering a range of 'decision criteria' which we think need to be met in order to deliver the best possible outcomes for consumers. Some of these criteria include how the separation will mitigate any actual or perceived conflicts of interest, what the cost implications of separation are (both ongoing and one-off), what stakeholders said about separation, and whether there would be any unanticipated consequences as a result of separation. We researched other examples of separation in the energy and telecoms industries to see whether there are any lessons that could be learned. We were also mindful that any decision that we reach should not impede the shift towards a completely independent system operator in the future should government policy continue to evolve further in this area.

2.23. In order to assess the cost of separation, NGET submitted their updated cost estimates to us. We have assessed these and used additional external consultancy support in specific areas. Additionally, we have undertaken an impact assessment assessing the costs and benefits of separating the ESO, which can be found in Appendix 2.

**Our views**

2.24. We have assessed National Grid's proposals as a package, and believe this package achieves the aims and objectives set out in the joint statement while being proportionate to our aims. The package of proposals offers a robust level of separation and will enable the ESO to take on existing and enhanced roles. We see the key components of the separation as robust, including the changes to governance, physical separation of ESO staff, the shared service arrangements, and the development of a distinct culture and identity of the ESO. We believe that National Grid's proposals for separation are a significant step forward for consumers and will result in a significant improvement on the status quo.

2.25. Changes will be reflected through additional licence obligations on NG NGET and NG ESO relating to the separation. We will consult on these licence obligations separately.

2.26. We have taken on board the views of stakeholders that the separation needs to address conflicts of interest and result in a changed culture within the ESO. We consider that the proposed package is a significant step in the right direction as compared to the status quo. In particular, we consider that the proposals offer robust physical separation of ESO staff, significant improvements for governance, via the new ESO board including independent directors and a new independently chaired compliance committee. In addition, we welcome National Grid's commitment to develop a visibly distinct culture for the ESO that will be clear both to those working within the ESO and those interacting with it.

2.27. We have considered the proposed arrangements by which the gas and ESO will continue to be jointly managed and in particular the proposals for a number of dual fuel roles. During our discussions with National Grid, it changed its plans and reduced the number of these roles significantly. National Grid has proposed a number of measures to mitigate any concerns that could result from these arrangements. We also consider that there are potential benefits in retaining the close links between the electricity and gas SO and that requiring greater separation between the SOs at this point could result in adverse consequences for consumers.

2.28. We recognise that certain arrangements do not completely remove the risk that National Grid plc continues to have influence over the ESO business in some areas and that some actual or perceived conflicts could remain. We also acknowledge that, in their consultation responses, stakeholders encouraged us to ensure that we are implementing appropriate levels of scrutiny, safeguards and controls as the separation progresses. In response, we will be monitoring the separation closely and undertaking a review in 2020-21 to assess how effective the separation measures are. If we identify any areas where the separation does not meet our expectations, we will consider implementing additional licence requirements to tighten certain aspects of the separation.

2.29. More detail on our views on National Grid's individual proposals are included in Table 1 below.

**The Future**

2.30. Having carefully considered the views of stakeholders and National Grid's submission, our view is that it is appropriate to proceed with National Grid's proposals for separation. This entails:

- Implementing the legal separation of the ESO from NGET on the basis of the appropriate licence changes to underpin the separation requirements;
- Monitoring the separation closely and undertaking a review in 2020-21 to see how effective the measures are in delivering the benefits of separation; and
- Considering the implementation of additional appropriate separation arrangements that will ensure the effectiveness of separation. These include potential additional licence requirements and/or other policy options.

2.31. We have scrutinised National Grid's application to recover costs associated with the legal separation of its ESO business. Our view of the appropriate level of funding is £49.3m for one-off costs and £9.1m for annual enduring costs. More details can be found in Appendix 1.

## Assessment of specific areas of ESO separation

2.32. The table below summarises positions on the different aspects of ESO separation. This includes what we said in January in the joint statement, stakeholders' views, National Grid's proposals and our views on these proposals.

*Table 1: Summary positions on different aspects SO separation*

| **GOVERNANCE** | |
|---|---|
| **Joint Statement** | The statement of intent included some key requirements for governance, such as a separate ESO board and at least two independent directors. |
| **Stakeholder views** | There was widespread stakeholder support for the governance measures proposed in our consultation, including a separate board for the ESO with at least two independent directors. |
| **National Grid's Proposal** | National Grid has proposed having a separate ESO board consisting of 7 members (3 NG Directors, 3 Sufficiently Independent Directors, 1 Chair NG ESO Director). The Director will be appointed by NG plc and report to the NG UK Executive Director. ESO board members will not be allowed on NG plc board or boards of other NG electricity companies. Additionally, NG will establish a Compliance Committee.<br><br>The ESO Board will collectively be responsible for the long-term success of the ESO. Reserved matters will include Strategy (in accordance with |

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| | National Grid delegations), Management and Finance matters, Director and Employee issues, Corporate Governance (overall leadership of ESO and establishment of committees) and Financial and Regulatory Reporting.<br><br>A separate SO Executive Committee (SOEC) will be established to manage day-to-day operations. An independent compliance oversight committee will be established and chaired by one of the ESO Board Sufficiently Independent Directors. |
| **Our Views** | We have considered whether the 3:4 independent to executive members of the ESO board is appropriate. We think that there are incentives on National Grid to ensure the board works effectively so as not to undermine the effectiveness of the separation in the eyes of industry, the regulator and Government. We propose to include reporting requirements on National Grid to provide information to Ofgem on the operation of the board. We will also consider the extent to which it is appropriate to publish some of this information. We also think that the compliance sub-committee (which will be chaired by an independent board member) will have an important role in monitoring the effectiveness of the new governance arrangements. |
| **EMPLOYEE SEPARATION, INCENTIVISATION AND TRANSFER** | |
| **Joint Statement** | The joint statement stated that there should be restrictions on staff movement between the ESO and other parts of National Grid's business, and that staff should be incentivised on ESO performance only. |
| **Stakeholder views** | There was broad support amongst stakeholders for our proposal that employee transfer between NGSO and NGTO should be restricted but not prohibited. Stakeholders called upon Ofgem to ensure that appropriate scrutiny and controls are implemented to govern employee separation and transfer as the separation measures are further developed. A small number of stakeholders suggested that all ESO positions should be advertised externally to ensure independence.<br><br>Some stakeholders reiterated the need for ESO employees to be incentivised only on the performance of the ESO business, rather than the performance of the NG Group as a whole. A small number of stakeholders also raised concerns about potential conflicts of interest as a result of ESO employees continuing to participate in National Grid share schemes. |
| **National Grid's Proposal** | ESO staff will be employed by National Grid ESO and ESO managers incentivised on ESO metrics, with the exception of a small number of 'dual fuel' staff who will work across the ESO and the gas SO. Staff will be incentivised on the performance of SO only.<br><br>The ESO will continue to be governed by National Grid Group's HR policy, which includes advertising all vacancies internally, and some externally. National Grid will provide ongoing publication of recruitment statistics to Ofgem as part of the required annual compliance return in order to ensure transparency of staff movement and demonstrate the independence of the ESO. |

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| | All moves between ESO and NGET or Relevant Other Competitive Businesses following legal separation will be treated as "sensitive moves" and reviewed by the Compliance Officer. If ESO staff transfer to a role in NGET/ROCB businesses post separation, a "cooling off" period may be enforced. This period would be decided on a case by case basis, depending on sensitivity of role and seniority. |
| **Our Views** | We believe that in order to reflect the intention of the joint statement, National Grid's proposals will need to ensure that the majority of ESO staff work on ESO issues only and will be incentivised on ESO performance. However, we agree that there could be exceptions for a small number of 'dual fuel' staff who will work across the ESO and the gas SO.<br><br>We think that the arrangements proposed by National Grid to manage staff transfers are likely to be robust and prevent any real or perceived conflicts of interest. We recognise that the role of the compliance officer will be crucial to ensuring the effectiveness of these arrangements and we will consider whether further licence obligations are required to reinforce these commitments.<br><br>We recognise that some stakeholders preferred more stringent restrictions on staff movement across separate parts of National Grid Group. We also recognise National Grid's view that more stringent staff transfer requirements could make the ESO a less attractive place of employment compared to other components of NG Group.<br><br>Our expectation is that a large proportion of ESO jobs will be advertised externally and internally. We therefore propose to ask National Grid to provide regular information on these staff movements to both Ofgem and the wider stakeholder community to monitor this going forward. |
| **PHYSICAL SEPARATION** | |
| **Joint Statement** | The joint statement stated that ESO employees would be physically separate from other National Grid plc electricity subsidiaries. |
| **Stakeholder views** | Stakeholder views on physical separation of the ESO were mixed. Some stakeholders supported the proposal to modify National Grid's headquarters in Warwick to provide a separate wing for the ESO as the most cost-effective option while still ensuring effective separation. However, other considered it more appropriate for the ESO to move to an entirely separate building. They considered that this was necessary to ensure the ESO was perceived as a separate company and for developing a new, separate ESO culture and identity. Some stakeholders also commented that a completely separate building would facilitate the potential shift to an ISO in future. |
| **National Grid's Proposal** | National Grid has proposed locating the ESO within a physically separated wing of their existing headquarters in Warwick. This would involve modifying the headquarters so that the ESO component of the building has a separate entrance and staff facilities (including canteen, post and welfare facilities) from the rest of National Grid Group. There will be no through-access to the residual building, and main entrances to National Grid headquarters on different aspects of the building. |

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| **Our Views** | We think that National Grid's proposal is likely to significantly reduce potential conflict of interest from occurring in terms of staff and information ring-fencing, and on balance we believe this is sufficient to meet our policy goals. |
| **SHARED SERVICES** | |
| **Joint Statement** | The joint statement of intent stated that the ESO should have relevant information ring-fencing in place and appropriate shared service arrangements so that NGET staff can only access same information as staff from other transmission companies. |
| **Stakeholder views** | Stakeholder views differed as to whether there should be shared services between the ESO and NGET. There was a consensus amongst stakeholders that the ESO should have its own regulatory team independent from the regulation team from the rest of National Grid plc. Some stakeholders stated that certain strategic functions (such as Legal, Finance, Corporate Affairs and Strategy) should not be shared. However, other stakeholders were supportive of shared services as they presented a cost-effective option while still ensuring effective ESO separation and independence. |
| **National Grid's Proposal** | Shared services will be provided to and from the ESO on the same basis that they are currently provided to other National Grid group entities. More specifically, transactional services (HR, Procurement, Tax & Treasury, Investor Relations, Audit) will be shared on the same basis as they are currently provided to all National Grid Group entities.<br><br>Strategic services (Finance, Corporate Affairs) will be managed under a Business Partner (BP) arrangement. The electricity and gas SO Business Partners and their teams will provide exclusive support to the ESO and will report to UK functional directors with appropriate separation between them and their peers in the National Grid Group. Day to day the BP would sit within the SO and would be treated as an 'SO visitor' when back within the main office to interface with their function back office. Each BP will sit on the SO Executive Committee and provide advice on SO business strategy.<br><br>There will be a separate ESO regulatory capability reporting to the ESO director.<br><br>Any perceived conflicts of sharing services will be managed through system, information access controls and existing professional obligations surrounding the avoidance of any actual or perceived conflicts of interest. |
| **Our Views** | We have carefully considered National Grid's proposals for shared services. We believe National Grid's business partner model provides a robust solution to reducing risks caused by sharing of shared services while also minimising costs to consumers. We recognise that compliance will play an important role here and that it is important that protections are set out in either licence requirements or in compliance documentation.<br><br>With appropriate protections in place, we consider the risks of shared services resulting in real or perceived conflicts of interest to be low. Given the significant costs associated with duplicating these services across the ESO, we consider National Grid's proposals for shared services as appropriate and striking the right balance in consumer interests. We will continue to monitor |

| | |
|---|---|
| | the separation arrangements for shared services going forward and will consider whether further licence requirements are needed in future. |
| **CULTURE & BRANDING** | |
| **Joint Statement** | The Joint Statement had no specific mention on separate ESO culture or branding. |
| **Stakeholder views** | While no specific statement was made in the joint statement or the consultation about the development of a separate ESO culture, the need for a separate ESO culture came through strongly from stakeholder feedback. In addition, stakeholders indicated that they want ESO projects and publications to be clearly recognisable as coming from the ESO, rather than National Grid plc. |
| **National Grid's Proposal** | The ESO will be called 'National Grid Electricity System Operator'. Steps have already been taken to develop a new SO identity via the 'One SO' campaign which identified behaviours/character traits for the new organisation and set out what this would look and feel like for people.<br><br>National Grid has indicated that it will develop a distinct and explicit visual identify of the new "National Grid ESO". Once the ESO is created, National Grid will at each point in engagement with customers and stakeholders make clear that they are part of the ESO. As part of implementing legal separation, the ESO will work with corporate affairs to update their visual identify in line with the National Grid brand direction, incorporating the ESO identity across e.g. email addresses, business cards, publications, consultation responses, marketing material, event banners, web identify etc. This will also include brand protocols for the new ESO, and meeting protocols for staff.<br><br>National Grid has indicated it will embed clear Customer Principles in the NG ESO, including principles of transparency, trust, agility, value and care. |
| **Our Views** | We recognise that several stakeholders called for the ESO to have a separate culture and identity from the rest of National Grid Group, and that one way in which this can be achieved is via separate branding for ESO. We think that National Grid's proposals for developing a separate ESO visual identity, in addition to separate ESO brand protocols, is will be a positive step towards achieving this. We will continue to review these arrangements going forward to consider whether any further changes to ESO culture and branding would be in the interests of consumers. |

# 3. Next steps

**Chapter Summary**

This chapter describes the process that we will be undertaking to separate NGET's SO and TO functions.

3.1. Our consultation proposed that legal separation of National Grid SO and TO functions could be achieved using existing legal provisions. More specifically, the consultation proposed that the best route to achieving legal separation within National Grid was via a voluntary application from National Grid to separate its licence between the SO and TO via Section 7A (Transfer of licences) of the Electricity Act 1989.

3.2. This Section 7A licence transfer process was chosen as it is the only viable route to achieving a more independent system operator without primary legislation, which means that we can deliver better consumer outcomes as soon as possible. It is our expectation that later this year, National Grid will make an application for approval under the Section 7A licence transfer process. This will include the proposed licence changes needed to facilitate the licence transfer. We will then issue a consultation on the changes to inform our consideration of the application and make a decision whether to accept or reject the application.

3.3. Once the separation is made, the final changes will be confirmed through changes to the licence. Any approval of the application will be subject to acceptance of those conditions under the Section 7A process. We will also consider if additional changes are needed to both new licences to reinforce obligations relating to the separation of the new businesses. Any such licence changes would be progressed under our standard licence change route.

3.4. As part of the separation process, we proposed to split National Grid's RIIO-T1 price control settlement between the SO and TO companies. This includes 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 SO and TO. However, it should be noted that we are not intending to re-open the overall National Grid settlement in this process; rather this is about how it should be allocated across SO and TO.

3.5. We proposed to separate the National Grid SO and TO functions by 1 April 2019 (the start of the financial year) due to complexity of mid-financial period implementation. However, we proposed that National Grid should take steps to increase separation ahead of this date.

3.6. We will continue to progress our work on the enhanced ESO roles and incentives, with a final decision on 2018-21 incentives published by early 2018.

# Appendix 1 – Detailed Cost Adjustments

1.1. We carried out an assessment on the costs submitted by National Grid and used additional external consultancy support in specific areas to arrive at the economic and efficient costs. We used internal resource to review the costs in areas such as IT and finance costs, as we had staff familiar with these areas. Where we required additional guidance in areas outside of our expertise, we obtained independent specialist consultants. The external consultants used were as follows:

- Absoft – used to review the costs associated with the changes required to separate National Grid’s SAP systems
- Bridge-it Advisory Services Ltd – reviewed process readiness and code and contract changes
- Pcubed – carried out a review of the programme management and programme management office

1.2. Over the course of the project, National Grid submitted several versions of their cost submissions. The costs increased from the original £46.5m one off to £54.8m and from £6.5m p.a to £8.5m p.a for the enduring costs. National Grid explained that this was because the scope of activities increased as it became clearer what was needed to make the separation. The scope also changed to include separating staff that worked on both gas and electricity operations. National Grid stated that the cost of this work was not included in their original submission. This had only come about after further discussions with Ofgem. We clarified that the gas and electricity SO separation was also required, leading to additional costs.

1.3. This is subject to carrying out a statutory consultation on a licence modification (required to allow any such costs) and a final decision being taken on the modification, subsequent to the consultation.

1.4. For detailed cost breakdown please see Table 2 below.

*Table 2: Cost breakdown*

| Previous Category | NGET Workstream | Category | Cost | | Ofgem position | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Up Front £m | Enduring Annual £m | Up Front £m | Commentary | Enduring Annual £m | Commentary |
| Business Change | W1. SO/TO Boundary Design | | 3.1 | 0 | 2.8 | Reverted to original cost | 0.0 | |
| | W2. People & Process Readiness | People Readiness | 2.1 | 0 | 2.1 | | 0.0 | |
| | | Process Readiness | 9.1 | 0 | 6.4 | Reduction in process costs recommended in Bridget associates (consultants) review | 0.0 | |
| | W3. Regulated and Contractual Change | | 2.6 | 0 | 2.3 | Mid-point of NGET & Ofgem views | 0.0 | |
| | W7. Stakeholder & Communications | | 0.87 | 0 | 0.9 | | 0.0 | |
| | W8. Project Management & Business Assurance | Programme Management & PMO | 4.7 | 0 | 4.5 | Using figure supplied by NGET | 0.0 | |
| | | Compliance | 0.5 | 0.3 | 0.5 | | 0.3 | |
| | Business Change Sub-Total | | 23.0 | 0.3 | 19.5 | | 0.3 | |
| Information Services (IS) | W6. Technology & Data | Operational IS & Data | 2.4 | 0.1 | 2.4 | | 0.1 | |
| | | Non-Operational IS & Data | 9.1 | 0.0 | 7.6 | Absoft (consultants) recommendation on efficient costs | 0.0 | |
| | IS Sub-Total | | 11.5 | 0.1 | 10.0 | | 0.1 | |
| Buildings | W5. Property | | 9.6 | 1.5 | 8.2 | Adjustments based on benchmark info from similar office move by Ofgem | 1.5 | |
| Financial | W4. Finance, Pensions, Assets & Regulation | Finance, Funding & Tax | 0.9 | 0.3 | 0.7 | Credit facilities will transfer from TO funding, so neutral overall | 0.1 | |
| | | Pensions | 0 | 0.0 | 0.0 | | 0.0 | |
| | | Regulation & Incentives | 0.3 | 0.1 | 0.0 | Reduced costs as this is included under RIIO | 0.0 | |
| | Financial Sub-Total | | 1.2 | 0.4 | 0.7 | | 0.1 | |
| Enduring Governance | No Change | | 1 | 0.6 | 1.0 | | 0.6 | |
| Enduring Staff | No Change | Shared Services | 0 | 0.5 | 0.0 | | 0.4 | of SIDs and company secretary |
| | | SO/TO Split Operations | 6.5 | 4.7 | 5.3 | Reduction based efficiency challenges | 4.3 | efficiency challenge proposal |
| | Enduring Staff Sub-Total | | 6.5 | 5.2 | 5.3 | | 4.7 | |
| **TOTAL (excl. Business Support** | | | **52.9** | **7.9** | **44.6** | | **7.2** | |
| **Business Support** | | | **1.9** | **0.6** | **0.4** | Based on economic and efficient costs for new staff | **0.1** | economic and efficient costs for new staff p.a. |
| **TOTAL (inc Business Support** | | | **54.8** | **8.5** | **45.0** | | **7.3** | |
| **Additional ESO/GSO separation** | | | **4.8** | **1.8** | **4.3** | | **1.8** | |
| **Grand total** | | | **59.7** | **10.3** | **49.3** | | **9.1** | |

| Difference | Up Front £m | Enduring Annual £m | Total reduction £m |
|---|---|---|---|
| | 10.4 | 1.2 | 11.6 |

# Appendix 2 – Impact Assessment

| | |
|---|---|
| **Title:** Ofgem's position on separating the electricity system operator<br><br>**Division:** Energy Systems<br>**Team:** SO Regulation | **Impact Assessment (IA)** |
| | **Type of measure:** Electricity System Operator separation (governance change) |
| | **Type of IA:** Qualified under Section 5A UA 2000 |
| | **Contact for enquires:** electricitySOreform@ofgem.gov.uk |

**Summary:** Intervention and Options

| |
|---|
| **What is the problem under consideration? Why is Ofgem intervention necessary?**<br><br>At present, the electricity system operator (ESO) 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. We believe that the current structure may be leading to real or perceived conflicts of interest and consequently not delivering the most efficient and economic outcome for consumers.<br><br>We think further separation and transparency between National Grid's electricity SO and electricity Transmission Owner (TO) functions would make industry confident in its impartiality and would be in the interest of consumers. We also think that the ESO'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. |
| **What are the policy objectives and intended effects including the effect on Ofgem's Strategic Outcomes**<br><br>Policy objectives:<br>• An electricity system operator delivering real value to consumers by:<br>    o Overseeing a safe, resilient, and cost-effective electricity system.<br>    o Driving competition and efficiency across all aspects of the system.<br>    o Promoting innovation, flexibility and smart/demand-side solutions.<br>• A legally separate ESO to mitigate actual or perceived conflicts of interest.<br><br>Intended effects on Ofgem strategic outcomes:<br>• Lower bills – Increased independence of the ESO will result in market participants having more confidence in the impartiality of the ESO in discharging its obligations across a range of activities. This includes supporting the ESO's proposed role in competition for certain onshore transmission assets, which will drive savings in the costs of developing those assets.<br>• Lower environmental impacts - a more independent ESO that is working more closely with DNOs to create a whole system view can identify and help speed up connections for low carbon generation.<br>• 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.<br>• Better quality of service – limited impact (no direct relationship between ESO and consumers).<br>• Better social outcomes – limited impact (no direct relationship between ESO and consumers). |

**What are the policy options that have been considered, including any alternatives to regulation? Please justify the preferred option**

1. **Do nothing option**

Under this option, we would see the continuation of the current arrangements with NGET undertaking both the ESO and TO responsibilities. The ESO would not be created as a separate entity within National Grid Group. The new proposed roles for the ESO discussed in our consultation would not be taken forward due to perceived or actual conflicts of interest and/or lack of a clear mandate for the SO.

2. **Separation option (preferred option)**

We are recommending the following separation package across six different areas:

a) Governance:
The ESO will have its own board consisting of 7 members (3 NG Directors, 3 Sufficiently Independent Directors, 1 NG ESO Chief Executive Officer) with some reporting requirements on voting decisions.

b) Employee separation, incentivisation and transfer:
ESO staff will be employed by National Grid ESO and ESO managers incentivised on ESO metrics, with the exception of a small number of 'dual fuel' staff who will work across the ESO and the gas SO.
The ESO will continue to be governed by National Grid Group's HR policy, which includes advertising all vacancies internally, and some externally. National Grid will provide ongoing publication of recruitment statistics to Ofgem as part of the required annual compliance return in order to ensure transparency of staff movement and demonstrate the independence of the ESO.
All moves between ESO and NGET or Relevant Other Competitive Businesses following legal separation will be treated as "sensitive moves" and reviewed by the Compliance Officer. If ESO staff transfer to a role in NGET/ROCB businesses post separation, a "cooling off" period may be enforced. This period would be decided on a case by case basis, depending on sensitivity of role and seniority.

c) Physical separation:
Modify NG headquarters in Warwick to partition a separate ESO office, with separate entrance and staff facilities (including canteen, post and welfare facilities). There will be no through-access to the residual building.

d) Shared services:
Transactional services (HR, Procurement, Tax & Treasury, Investor Relations, Audit) will continue to be shared on the same basis as they are currently provided to all NG Group entities. Strategic services (Finance, Corporate Affairs) will be managed under a Business Partner (BP) arrangement. The ESO will have a separate regulatory department.

e) Culture and branding:
Electricity SO to be called 'NGSO' and have branding consistent with the rest of National Grid Group. National Grid will develop a distinct and explicit visual identify of the new "National Grid ESO". Once the ESO is created, National Grid will at each point in engagement with customers and stakeholders make clear that they are part of the ESO.

**Preferred option - Monetised Impacts (£m)**

| | |
|---|---|
| Business Impact Target Qualifying Provision | Non-qualifying |
| Business Impact Target (EANDCB) | N/A |
| **Explain how was the Net Benefit monetised**<br><br>Monetised impact not available. A switching point analysis has been undertaken. | |

**Preferred option - Hard to Monetised Impacts**

| |
|---|
| **Describe any hard to monetised impacts, including mid-term strategic and long-term sustainability factors following Ofgem IA guidance**<br><br>A major benefit of this proposal will be mitigating perceived and real conflicts of interest within National Grid, meaning that the ESO can play a greater role across a number of areas that can yield significant benefits given the ESO's expertise and knowledge. A more independent ESO would face reduced conflicts of interest that otherwise would have inhibited it from identifying interactions and synergies across different markets. This will ensure 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 the use of a flexibility resource). As a result, market participants would have more confidence in the impartiality and integrity of the ESO in discharging its obligations across a range of activities such as extending the use of competition in networks.<br><br>Overall, we consider the impact on security of supply, and on Great Britain's ability to meet national energy targets to be positive. We also consider the impact on long-term technology development and market participant diversity to be positive. |
| **Key Assumptions/sensitivities/risks**<br><br>We recognise that with greater separation of the ESO and TO functions, there is a risk current synergies may be lost or diminished. There is also a risk that the synergies from the gas and electricity SO working as one organisation may be lost through the separation proposed.<br><br>A key assumption is that the benefit from NGET SO separation greatly exceed any loss of synergy between Gas and Electricity SO functions and Electricity TO/SO interactions. |

| | |
|---|---|
| **Will the policy be reviewed?** Yes | **If applicable, set review date:** 2020 / 2021 |

| | |
|---|---|
| **Is this proposal in scope of the Public Sector Equality Duty?** | **~~Yes~~/No** |

**Summary:** Analysis & Evidence FULL ECONOMIC ASSESSMENT

| **Price base year:** 2016/17 | **Base Year:** 2016/17 | **Time Period:** 30 years | **Net Benefit (£m)** | | |
|---|---|---|---|---|---|
| | | | **Low:** | **High:** | **Best Estimate:** N/A |

| **COSTS (£m)** | **Total Transition** (Constant Price) Years | **Average Annual** (excl. Transition)(Constant Price) | **Total Cost** (Net Present Value) |
|---|---|---|---|
| **NG Estimate** | **£59.7m** | **£10.3m** | **£249.14m** |
| **Ofgem Estimate** | **£49.3m** | **£9.1m** | **£216.67m** |

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

National Grid estimates that it faces a one-off restructuring cost of £59.7m and average annual costs of £10.3m. We have validated these figures to provide our own estimate. We estimate National Grid face a one-off restructuring cost of £49.3m and average annual costs of £9.1m.

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'.**

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 a more independent electricity SO. However, from a holistic view, a more independent ESO will mitigate the risk of bias towards National Grid's other business interests.

**Other key non-monetised benefits by 'main affected groups'.**

Greater separation would give market participants more confidence in the impartiality of the ESO in discharging its obligations across a range of activities. It will also provide the ESO with a platform for adopting a more holistic approach to addressing electricity industry challenges for the benefit of consumers.

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

| **Key Assumptions/sensitivities/risks** **Discount rate (%)** | 3.5% |
|---|---|
| A key assumption is that the benefits from NGET SO separation greatly exceed any loss of synergy between Gas and Electricity SO functions and Electricity TO/SO interactions. | |

| BUSINESS ASSESSMENT (Option1) | |
|---|---|
| **Direct impact on businesses (EANCB)** N/A | **Score £m:** N/A |

**Introduction**

1.1. In November 2015, Government ministers expressed the desire to make the ESO more independent. We have worked closely with the Department for Business, Energy and Industrial Strategy (BEIS)[8] and National Grid Electricity Transmission (NGET) to consider how the ESO 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.

1.2. We consider further change is needed to the structure of the ESO, to mitigate conflicts of interest. The ESO role is currently carried out by 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.

1.3. The role of the ESO has grown over the years and it now has a more active role in transmission network development and the capacity market. The ESO is expected to take on new functions to support the introduction of competition for onshore transmission assets. This evolution of the activities the ESO carries out means we need to carefully consider the governance of the ESO, 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 ESO functions, TO functions and other business interests.

Our view on the benefits and costs of these proposals are summarised in the main body of the consultation on the future arrangements for the electricity system operator: its role and structure[9]. As part of this consultation, we submitted an initial impact assessment on the changes we were proposing to the structure and the roles of the ESO. ***This impact assessment builds upon our previous initial impact assessment, isolating and assessing the impact of the separation of the electricity SO only.*** Please refer to our response to the consultation on ESO separation for more information.

**Methodology**

1.4. We have built upon our previous initial impact assessment and produced an updated impact assessment for the separation measures proposed, using updated cost estimates. We have also drawn upon the consultation responses we received to our role and structure consultation and have included this in our analysis below. We have set out the effect we think our proposals might have on different groups, including existing and future consumers and industry participants. We have also had regard to potential social and environmental impacts and have considered the expected contribution our proposals will make toward strategic and sustainable energy objectives.

1.5. Where possible and credible to do so at this stage, we have tried to monetise the costs

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[8] And formerly the Department of Energy and Climate Change (DECC)
[9] Future arrangements for the electricity system operator: its role and structure https://www.ofgem.gov.uk/system/files/docs/2017/01/future_arrangements_for_the_electricity_system_operator.pdf

and benefits. In the responses we received to our consultations, stakeholders were keen for us to try to quantify as many of the benefits and costs as possible, whilst recognising that this is a challenging task to do. 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, as in our initial impact assessment, we have carried out a switchover analysis to assess the costs quantitatively. We have also described the benefits qualitatively for completeness, recognising that there is some overlap between what we are assessing quantitatively and what we are describing qualitatively.

**Cost benefit analysis**

1.6. Overall, we see that the main costs will result from the upfront cost to National Grid from having to separate the ESO and TO businesses. In particular, the cost (both internal and external resources) to deliver the business change activities that facilitate separation of the ESO and TO and adoption of new roles in the ESO.

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

1.8. We expand on these costs and benefits further below. In assessing these, our focus is on the proposal for separating the ESO and TO within NG Group.

**Counterfactual**

1.9. 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 ESO and TO responsibilities. NGSO would not be created as a separate entity within NG Group. The new proposed roles for the ESO discussed in our consultation 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 ESO given its current licence obligations.

1.10. A few stakeholders suggested in their consultation responses that we should consider the option of an ISO in our impact assessment (alongside considering a 'do nothing' counterfactual). However most stakeholders agreed and supported a phased approach to implementation. A move to an ISO is still possible at a later point (and arguably easier once further separation is implemented), particularly if the ESO is not performing well against our and Government's expectations of effective separation. Henceforth we have not considered a move straight to an ISO as part of this impact assessment analysis.

**Costs**

1.11. Overall, we see that the main costs will result from the upfront cost to National Grid from having to separate the ESO and TO businesses. In particular, the cost (both internal and external resources) to deliver the business change activities that facilitate separation of the ESO and TO and adoption of new roles in the ESO.

1.12. NGET has already provided its view of the cost of separating NGET into NGSO and NGTO. These costs were used to formulate our initial impact assessment for our consultation on the role and structure of the future ESO, to which industry have been given the opportunity to comment. There were some concerns amongst different stakeholders about the upfront and ongoing costs of separation proposed by NGET in the original impact assessment. Some stakeholders thought these were too high and requested that Ofgem assess these as part of our analysis. In particular, one stakeholder noted that NGET's indicative costs for altering the building, not including IT systems, were higher than they would expect given their experience.

1.13. NGET have since submitted updated cost estimates to us. **We have assessed them**

**and have provided our own cost estimates for comparison,** engaging external consultancy support in the areas where we do not have expertise. These costs are summarised in Table 1[10]. For a more detailed breakdown of costs, please refer to the appendix 1 in the associated response to consultation on ESO separation.

**Table 1: National Grid Cost Estimates for ESO separation and Ofgem's assessment (2017/18)**

| Cost Area | NGET Bid (£million) | | Ofgem estimate (£million) | |
|---|---|---|---|---|
| | Up front | Enduring | Up front | Enduring |
| *Business Change* | 23.0 | 0.3 | 19.5 | 0.3 |
| *Information services* | 11.5 | 0.1 | 10.0 | 0.1 |
| *Buildings* | 9.6 | 1.5 | 8.2 | 1.5 |
| *Financial* | 1.2 | 0.4 | 0.7 | 0.1 |
| *Enduring governance* | 1.0 | 0.6 | 1.0 | 0.6 |
| *Enduring staff* | 6.5 | 5.2 | 5.3 | 4.7 |
| *Additional ESO/GSO separation* | 4.8 | 1.8 | 4.3 | 1.8 |
| *Business Support* | 1.9 | 0.6 | 0.4 | 0.1 |
| **TOTAL** | **59.7** | **10.3** | **49.3** | **9.1** |

1.14. As part of the separation process, we will split NGET's RIIO-T1 price control settlement between the ESO and TO companies. We are not intending to reopen the overall NGET price control settlement in the process, however the ESO will be considered separately for the RIIO-T2 process. Any costs that we allow the NGSO and NGTO companies to recover will feed through to energy consumers through use of system charges.

Unintended consequences

1.15. 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.

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

1.17. There is a risk that the synergies from the gas and electricity SO working as one organisation may be lost through the separation proposed. Currently, NGET operate a 'One SO' model for a joint SO for electricity and gas, which includes a number of dual fuel staff. NGET have stated that the joint roles have delivered significant efficiency savings to date through providing an overarching perspective on customer engagement, market insights, industry strategy and business change. We recognise the joint synergies of operating a 'One SO' model as well as the increasing requirement for a joined up consideration of the interactions between the electricity and gas systems in the future. We consider our policy

[10] All figures are rounded to one decimal place.

proposals on separation and the roles of the ESO put sufficient emphasis on optimal coordination and consideration of whole system outcomes. Furthermore, we are asking NG how they can fulfil the requirements of the joint statement and the separation aims as a whole.

1.18. Similarly, we recognise that there might be some loss of synergies from separating the SO and TO functions within NG group. Currently, NGET's ownership of TO assets in England and Wales (E&W) means 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. The relationship between NGSO and NGTO will need to be contractualised in much the same way as the relationship between the ESO 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)). Furthermore, 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.

**Benefits**

1.19. While difficult to quantify, we think that, taken together, the likely benefits of our proposals will significantly outweigh the costs.

1.20. The main benefits will result from mitigating conflicts of interest within NGET, meaning that the ESO can play a greater role across a number of areas that can yield significant benefits given the ESO's expertise and knowledge. Evidence from our consultation responses and industry workshop suggests that industry perceive the current arrangements to facilitate conflicts of interest. In particular, the stakeholders that responded to our consultation generally considered increased separation within NG to be an improvement on the status quo and there was unanimous agreement that further separation was necessary. Furthermore, greater separation would give market participants more confidence in the impartiality of the ESO in discharging its obligations across a range of activities.

1.21. 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 significantly mitigate conflicts of interest within NGET. Specifically, it will:

- Create a clear, separate identity for the ESO, with its own governance structure and with ESO employee. This will mitigate the risk of bias towards NGET's other business interests.

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

- It will also provide the ESO with a platform for adopting a more holistic approach to addressing electricity industry challenges for the benefit of consumers. This would create a stronger focus for the ESO to drive change and innovation to support the transformation of the energy system in an efficient way.

1.22. We think consumers will be the ultimate beneficiaries of our proposals, principally through enabling a more secure, competitive and flexible system.

1.23. Greater separation will also support the ESO 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. NGET, in their consultation response, said that it sees the creation of a legally separate ESO within NG Group as an "enabler to the SO taking on its enhanced role". Therefore, greater separation is required in order to realise the benefits with the work on the roles of the ESO.

1.24. We discuss these benefits below against our objectives for the ESO:

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

1.25. Our proposal seeks to ensure there is sufficient independence of the ESO so that other stakeholders have the necessary confidence in the ESO taking on a whole system view. Greater independence of the ESO removes any conflict of interest that might prevent it from 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.

1.26. With greater independence, the ESO 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. This will ensure 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 the use of a flexibility resource).

1.27. We do not think we can robustly quantify these benefits, due to uncertainty over how the system will evolve. However, overall network investment costs across transmission and distribution networks are significant and any efficiency savings in this area has the potential to deliver real consumer benefits.

1.28. For instance, the three TOs' capital expenditure on network investment is currently expected to be £15.98bn[11] for the RIIO-T1 period. This equates to an annual spend of £1.997bn. For comparison, this is higher than actual spend during the TPCR4 period where annual expenditure was 0.91bn.[12]

1.29. The DNOs' total forecast expenditure on the network is expected to be £27.98bn[13] for the RIIO-ED1 Period. This equates to an annual spend of £3.498bn. For comparison, this is broadly in line with actual spend during the DPCR5 period where annual expenditure was 3.318bn.[14]

1.30. Given this scale of cost, even a relatively small efficiency saving across the Transmission and Distribution networks could deliver real benefits to consumers.

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

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

1.32. We think a more independent ESO would be better placed to provide greater transparency to market players, which should help reduce costs by giving new providers greater confidence to invest, driving efficiency.

1.33. As mentioned previously, a more independent ESO would face reduced conflicts of

[11] This figure is based on a £13.01bn forecast expenditure in 2009/10 prices inflated to 2016/17 prices using the RPI index.
[12] All prices are in 2016/17.
[13] This figure is based on a £25.84bn forecast expenditure in 2012/13 prices inflated to 2016/17 prices using the RPI index.
[14] All prices are in 2016/17.

interest that might prevent it from identifying 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.

1.34. 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 identify synergies across markets ahead of a more detailed evaluation (by the ESO). In addition, while there is anecdotal evidence that some ESO 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 £850 million 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.

1.35. In our October 2015 consultation on onshore competition[15], we said that the SO should identify the long-term needs of the system and develop and assess options to meet those needs through the Network Options Assessment Report. In our working paper on the Future Regulatory Framework[16], we said that the ESO should support introducing competition into the delivery of new, separable and high value electricity transmission projects.

1.36. We think the separation measures we propose between the ESO and the NGTO business would provide bidders with confidence in the integrity of any competitive process the ESO undertakes. It is important that prospective bidders have confidence that the ESO 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.

1.37. We consider our proposals are critical to helping unlock the prospective savings from using competition in networks.

*Objective 3: promoting innovation, flexibility and demand side solutions*

1.38. We consider that separating the ESO from the NGTO company will give it greater legitimacy to lead changes to industry frameworks. This will help the ESO to ensure there is a level playing field, which will promote innovation and provide a route for new players and business models to emerge.

1.39. We do not believe it is possible to quantify robustly 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. Overall, the potential benefits of flexibility are substantial. For 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.[17] We

[15] 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
[16] Future Arrangements for the Electricity System Operator: Working Paper on the Future Regulatory Framework: https://www.ofgem.gov.uk/publications-and-updates/future-arrangements-electricity-system-operator-working-paper-future-regulatory-framework
[17] National Infrastructure Commission: Smart Power

consider these proposals will play an important part in unlocking the full extent of these benefits.

**Aggregate consumer impact and switchover analysis**

1.40. 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 mitigating conflicts of interest and through greater industry confidence, which should encourage more investment and drive efficiency. We also expect consumers to benefit through the ESO being better able to taken on a more active view and consider the whole system holistically. There could also be other cost reductions because of improved cross-market efficiency, for example by reducing wholesale or capacity mechanism prices.

1.41. We have undertaken a switchover analysis, which aims to determine the efficiency savings that would be required in network investment and balancing costs to offset the expected costs of our proposals. We have analysed NGET's cost estimates and our estimates for completeness and for comparison. We recognise that this quantitative analysis is additional to the qualitative analysis of the benefits that we have described above and hence there may be some overlap when they are considered together. In isolation, they provide two alternative methods of explaining the costs and benefits of our proposal.

1.42. Using National Grid's cost estimate of an upfront cost of £59.7million and an ongoing annual cost of around £10.3million, NPV costs over a 30-year period would be approximately £249.14million. In order to offset this cost, the changes in structure for the SO would need to deliver a 0.26% efficiency saving in: a) combined transmission and distribution network investment; and b) balancing costs over that 30-year period.[18]

1.43. Using our cost estimate of an upfront cost of £49.3million and an ongoing annual cost of around £9.1 million, NPV costs over a 30-year period would be approximately £216.67million. In order to offset this cost, the changes in structure for the SO would need to deliver a 0.22% efficiency saving in: a) combined transmission and distribution network investment; and b) balancing costs over that 30-year period.

1.44. This emphasises that, due to the magnitude of costs faced to balance the electricity system and in network investment, only a very small efficiency saving would be required to offset the costs of our proposal and realise the benefits described above.

1.45. The switchover analysis assumes that the average annual costs remain the same for 30 years and that the annual cost of balancing the transmission system remains £850million for the next 30 years. As the transmission and distribution price controls expire in 2021 and 2023 respectively, we assume that from 2021, the transmission network investment cost will be the average annual cost between TCPR4 and RIIO T1 and from 2023 and the distribution network investment cost will be the average annual cost between DPCR5 and RIIO ED1.

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https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/505218/IC_Energy_Report_web.pdf

[18] This calculation projects forward current balancing costs and average network investment costs over the current and previous price controls.

**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 some 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, we expect that 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 individual market participant would be on National Grid. However, as stated above we intend to split NGET's RIIO-T1 price control settlement between the SO and TO companies and the ESO will be considered separately for the RIIO-T2 process.

1.49. Other industry participants will be less directly impacted.

1.50. Our desire to see the most efficient whole system outcome could involve some distributional impacts between network companies. For example, a more independent ESO is expected to reduce conflicts of interest within NGET and so we might expect to see increased coordination across transmission and distribution. This 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 ESO or TO would save.

1.51. As the ESO 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**

1.52. 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. As mentioned previously, we expect prospective bidders in any competitive processes undertaken by the ESO to have more confidence that the ESO would be acting impartially following separation.

**Strategic and sustainability considerations**

1.53. We have considered how our proposals would contribute to a sustainable and secure energy supply for GB consumers.

1.54. Separation of the ESO and TO within NG Group should give some flexibility for the ESO's role to evolve further in future without creating undue concerns about conflicts of interest. We believe that our proposals will help support the transition to a low carbon system through a number of ways:

- Helping ensure that the ESO is independent enough to undertake 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.

- Helping manage the challenges created by the uncertainty around how the system will evolve. For example, by ensuring that an independent ESO is working with others to monitor and anticipate future challenges to system operation so that it is well prepared with a range of plausible outcomes.

1.55. In addition, there may be merit in moving to a fully independent ESO 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 ESO company and regulatory framework would already have been clearly distinguished from that of the NGTO company.

**Risks and Uncertainties**

1.56. We recognise there are uncertainties that may limit the beneficial impact of our proposals. We have detailed these below.

1.57. As mentioned previously, NGET currently benefits from synergies due to its ownership of TO assets and from its 'One SO' model for a joint SO for electricity and gas. We recognise that with greater separation, there is a risk that some of these synergies may be lost or diminished. We are asking NG how they can fulfil the requirements of the joint statement and the separation aims as a whole and 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.

1.58. Moreover, separation of the SO and TO within National Grid should give some flexibility for the SO's role to evolve further in future without creating undue concerns about conflicts of interest. We envision a more independent ESO 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.

1.59. NGET also raised in their consultation response that there were a number of additional risks and uncertainties that we needed to consider. Firstly, there are regulatory and policy risks such as a change in government policy or a delay in regulatory change. This could delay any expected deliverables over the next two years. Secondly, NGET argues that the UK's withdrawal from the European Union and possible exit from the Internal Energy Market (IEM) creates a certain level of uncertainty for the GB energy system, especially whilst details of the withdrawal are negotiated. The outcome can have a significant bearing on cost to end consumers over the next few years.

1.60. Despite the risks and uncertainties described above, we consider that the likely benefits of our proposals will significantly outweigh the costs.

**Conclusion**

1.61. This impact assessment has built upon our previous initial impact assessment for the separation measures proposed, evaluating our proposal for separation against the counterfactual of continuing with the status quo. We have used updated cost information from NGET and have produced our own cost estimates for comparison, engaging external consultancy support in the areas where we do not have expertise. We have considered the stakeholder responses we received to our consultation and the feedback we received from stakeholders in our industry workshop. Due to the nature of the benefits we are describing, we were unable to robustly quantify these, but have described them qualitatively. We have used the same method as in our initial consultation to compare the impacts of this proposal; we have undertaken a switchover analysis for a quantitative analysis of the costs and a have also produced a qualitative analysis of the benefits. Despite the risks and uncertainties, we consider that a separate ESO is likely to achieve the levels of efficiencies identified to justify the change in policy. Furthermore, while difficult to quantify, we think that, taken together, the likely benefits of our proposals will significantly outweigh the costs.