

System Operator incentive schemes from 2013

Consultation

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Overview:

National Grid is the System Operator (SO) for the electricity and gas transmission systems in Great Britain (GB). This consultation document sets out our initial views on the principles that we consider should underpin longer term gas and electricity SO incentive schemes to apply from April 2013. Within this document we ask a number of questions to help develop our thinking on how the SOs should be incentivised going forward.

One of the issues we have been considering is the extent to which we should align the SO incentives with the Transmission Owner (TO) incentives being developed through the RIIO (Revenue = Incentives + Innovation + Outputs) model and due to have effect from 2013. Some of the issues consulted on in this document follow from the work set out in our transmission related RIIO (RIIO-T1) strategy decision document in March 2011.

Context

These initial views form part of our work to regulate monopolies effectively. We consider that it is important for both the electricity and gas markets that the role of the System Operator (SO) is correctly identified and that the SO has the appropriate tools available to it to undertake this role.

Any interventions in the market by the SO can lead to costs being incurred, both directly by the SO and more widely by the market. Since consumers ultimately bear these costs it is important to keep them as low as possible. Based on our experience, we consider that the best way of achieving the lowest costs to consumers is by providing the SO with commercial incentives whereby it shares some of the gains (or losses) from cost reductions (or increases).

To deliver the best overall outcome for consumers we are considering, among other things, the alignment between the SO incentives and incentives in place through the transmission price control being set from April 2013 in the current RIIO-T1 work.

The initial views expressed within this document outline how we currently consider these costs can be reduced over longer term SO incentive schemes. This work builds on the material recently released on both the SO incentive schemes for gas and electricity and the RIIO-T1 strategy consultation and decision documents.

Associated documents

- 2010/11 Electricity System Operator Review – Preliminary Conclusions from Phase 1, 5 July 2010, Reference 80/10.
<http://www.ofgem.gov.uk/Markets/WhIMkts/EffSystemOps/SystOpIncent/Documents1/Phase%201%20recomendations%20doc%204.pdf>
- National Grid Electricity System Operator Incentives from April 2011, 10 June 2011, Reference 76/11
<http://www.ofgem.gov.uk/Markets/WhIMkts/EffSystemOps/SystOpIncent/Documents1/National%20Grid%20Electricity%20Transmission%20SO%20incentives%20from%201%20April%202011%20FINAL.pdf>
- National Grid Gas System Operator Incentives from April 2011, 1 March 2011, Reference 23/11.
<http://www.ofgem.gov.uk/Markets/WhIMkts/EffSystemOps/SystOpIncent/Documents1/NGG%20SO%20Incentives%20-%20April%202011%20-%20Final%20Proposals%20Consultation.pdf>
- National Grid Gas System Operator Incentives from 1 April 2010, 26 February 2010, Reference 27/10
http://www.ofgem.gov.uk/Markets/WhIMkts/EffSystemOps/SystOpIncent/Documents1/SO%20Final%20Proposals%20Consultation%20Document_gas%20only.pdf
- National Grid Electricity Transmission and National Grid Gas System Operator incentives from 1 April 2009, 27 February 2009, Reference 14/09



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<http://www.ofgem.gov.uk/Markets/WhIMkts/EffSystemOps/SystOpIncent/Documents1/Final%20proposals%20consultation%20document.pdf>

- Decision on strategy for the next transmission price control – RIIO-T1, 31 March 2011, Reference 46/11.
<http://www.ofgem.gov.uk/Networks/Trans/PriceControls/RIIO-T1/ConRes/Documents1/T1decision.pdf>

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Executive Summary

This document sets out our initial views on the general principles we consider should be used to develop the System Operator (SO) incentive schemes to apply from 2013. We consider that these principles represent a solid foundation from which the gas and electricity SO incentive schemes can be developed and enhanced in a manner that is consistent with that set out in the RIIO-T1 (the first transmission price control based on the Revenue = Incentives + Innovation + Outputs model) strategy decision documents.

The electricity and gas SO incentive schemes have developed differently over time and separately from transmission price controls. Meeting environmental objectives and securing energy supply will require significant development of both the gas and electricity transmission networks and pose new challenges to the operation of the gas and electricity systems. It is therefore important that the Transmission Owners (TOs) and the gas and electricity SOs play a full role in delivering and operating a sustainable energy sector, and do so in a way that delivers value for money for existing and future consumers.

This consultation forms an important step in our thinking on how future SO incentive schemes from 2013 may develop. It is being developed within the context of the RIIO model that is delivering a change to the way in which the networks are regulated and incentivised.

In developing RIIO we recognised the possibility that the different type and level of incentives placed on the SOs might contribute to a non-level playing field for decisions, particularly when faced with particular issues requiring capital investment or when finding operational solutions.

We are considering the underlying requirements for an effective incentive arrangement for the SOs that should be applied when considering the design of the future schemes. In that context, we are reviewing the current arrangements and are considering the general framework of principles to apply to the SO incentive schemes from 2013.

Our initial views on the key design issues are that there may be significant benefits associated with:

- lengthening the schemes leading to improved incentives on the SOs to take longer term strategic actions and better alignment of decisions with the TOs;
- increasing the transparency of trade-offs and reducing the risk of distortions in incentives; and
- appropriately packaging the outputs of the SOs that are to be incentivised, wherever practical and efficient.

In addition, our initial view is that there is significant scope for achieving greater efficiency by better aligning of the incentives on the SOs and TOs through:



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- making the financial incentives and trade-offs more transparent and better aligning the incentives on the SO and TO where under common ownership; and
- overcoming the issue of separate ownership of the SOs and TOs through encouraging further joint optimisation of decisions and strengthening SO incentives to accompany the baseline TO policies which will be set out in the companies' RIIO-T1 business plans (as required in our March RIIO-T1 strategy decision document). This will allow the SOs to incentivise the TOs to go beyond baseline policies where the overall outcome would be efficient.

It is expected that this approach will lead to more effective decisions by the SOs, more effective interactions with the TOs (i.e. where the reduction in SO costs is greater than any incremental costs for the TO) and an overall increase in efficiency to the benefit of consumers.

1. Introduction

Chapter Summary

This chapter explains why we are reviewing the way in which we incentivise the System Operators and provides details of the context in which we are undertaking this work. It also outlines the process that we propose to follow for developing incentive schemes to be implemented from April 2013.

Question box

Question 1: Do you consider that the general principles we have used are appropriate? Are there any other principles that we need to consider?

Purpose of this document

1.1. This document outlines our initial views on the development of the electricity and gas System Operator (SO) incentive schemes to be implemented from April 2013 in Great Britain (GB).

1.2. This review of the SO incentive scheme arrangements is being undertaken within the context of a range of developments in the gas and electricity markets. In particular, meeting environmental objectives and securing energy supply will require significant development of both the gas and electricity transmission networks and pose new challenges to the operation of the gas and electricity systems. It is therefore important that the Transmission Owners (TOs) and the gas and electricity SOs play a full role in the delivery and operation of a sustainable energy sector, and do so in a way that delivers value for money for existing and future consumers.

RIIO-T1

1.3. This document is an important step in our thinking on how SO incentive schemes from 2013 should develop. It is being progressed within the context of the RIIO (Revenue = Incentives + Innovation + Outputs) approach that is delivering a change in the way in which the networks are regulated and incentivised.

1.4. In March 2011, Ofgem published its RIIO-T1 strategy decision document (the March RIIO-T1 document).¹ This document set out our decisions on the key elements of the regulatory framework for the next gas and electricity transmission price controls. It included decisions on:

- the outputs that the transmission companies need to deliver and associated incentives;

¹ Decision on strategy for the next transmission price control – RIIO-T1, Ofgem, March 2011.

- mechanisms to address uncertainty during the price control; and
- the key elements of the financial framework.

1.5. The March RIIO-T1 document also set out our intended approach to assessing network companies' business plans, including the role of proportionate treatment, and the greater role for innovation. It is now for the transmission companies to develop well justified business plans setting out how and what they will deliver for consumers which they must submit to us by 31 July 2011.

1.6. The March RIIO-T1 document also highlighted areas where we considered there are interactions between the activities of the SOs and TOs and outlined our intention to implement arrangements that would better align the incentives on the SOs and TOs. As part of this, we set out the need to develop sharper SO incentives so that taken together with the TO baseline output it would provide a basis for incentivising better overall decision making. We also stated our intention to publish this consultation document on options for longer term SO incentives including SO-TO incentive alignment.

1.7. The development of the RIIO-T1 framework has provided us with a timely opportunity to review the SO incentive arrangements that may apply from 2013 within the context of RIIO. As part of this review we will be considering the interactions between the SO and TO activities and the need for such interactions to be recognised by the incentive arrangements. We therefore intend to develop and consult on new SO incentive arrangements with a view to implementing these arrangements from 2013 alongside the first RIIO-T1 price controls.

General principles

1.8. To respond to the changing regulatory environment and the various challenges being faced, we need to ensure that the SO incentive schemes place strong incentives on National Grid Electricity Transmission (NGET) and National Grid Gas (NGG) to operate the electricity and gas systems in the most efficient manner possible. Furthermore, when setting the schemes we need to ensure that there are no unintended consequences and that the schemes reflect a fair balance of risk and reward between the SOs and consumers.

1.9. To meet these challenges we consider there are five key areas that need to be considered when determining the SO incentive schemes to apply from 2013. These are briefly discussed in the section below and are explored further in subsequent chapters.

Determination of outputs that the SOs should be incentivised on

1.10. Outputs based regulation is an effective way of promoting efficiency. By defining what the SOs are required to deliver, companies face powerful incentives to find the best way to deliver the services required by customers. Recognition of this powerful incentive was, for example, one of the key reasons behind Ofgem adopting such an approach with RIIO.

1.11. We have therefore identified outputs of both gas and electricity SOs and have identified additional outputs that may be appropriate for incentivisation compared to the current incentive schemes. More information on this issue is discussed in chapter 3.

Packaging outputs into schemes incentivising delivery

1.12. An incentive scheme can be designed such that there is a separate incentive scheme for each output of the SO or a number of outputs of the SO can be packaged together within one scheme (i.e. bundled).

1.13. We consider that there are two main factors that need to be considered when determining whether it is appropriate to bundle an SO incentive scheme: the level of interactions between the outputs; and the impact on the managerial focus of the SO.

1.14. We consider that one of the benefits of a bundled incentive scheme is that it allows greater freedom to the SO to decide how to meet a single performance target – a target that reflects the sum of the performance of different aspects within a particular incentive package.

1.15. Based on our thinking to date, our initial view is that wherever practical and efficient SO outputs should be packaged together and incentivised through a bundled scheme. More information on this issue is discussed in chapter 4.

SO incentive scheme length

1.16. One of the key elements of RIIO is the encouragement of longer term thinking and setting current decisions in a long term context. Part of the way this is to be delivered is through a move to an eight year control for the TOs. Other elements emphasise sustainable delivery beyond those eight years. Addressing the opportunities that may be lost through continuing with short term SO schemes is therefore central to our consideration of aligning the SO and TO incentives.

1.17. We consider that the short duration of many of the current SO incentive schemes do not incentivise the SO to consider actions that may have higher upfront costs and which may require a relatively longer cost recovery period. This may result in the SO not taking the widest range of possible actions that could increase efficiency in system operation over the long term, which would be to the ultimate detriment of consumers. We are therefore considering what length the SO 2013 schemes should be. More information on this issue is discussed in chapter 5.

Achieving better alignment between SO and TO activities

1.18. We consider that consumers could be expected to receive the greatest benefit where the SO and TO interact in such a way as to optimise the aggregate impact of each of their actions. This will occur where there are incentives on the SO and TO to act together to maximise consumer benefit.

1.19. We also consider that there are features of the current SO and TO regulatory framework and incentive arrangements that do not encourage overall efficiency. That is, there are aspects of current arrangements that can result in misalignment between the incentives on the SO and TO which mean that they do not make jointly optimised decisions. These barriers arise in cases where the decisions of the SO and TO interact with each other, in particular where the action by the TO leads to an impact on the SO (and vice versa). We consider that this situation is to the ultimate detriment of consumers.

1.20. In designing the SO schemes to be in place from 2013 our initial view is that:

- interactions between the SO and TO are given appropriate consideration;
- relevant trade-offs are considered in any SO-TO decision making process;
- trade-offs and interactions are transparently assessed in the decision making process; and
- where trade-offs between the SO and TO are not possible we allow the SO to manage its relationship with the TO proactively through the use of financial incentives.

1.21. We consider that by addressing these issues greater alignment between SO and TO activities will be achieved, to the ultimate benefit of consumers. More information on this issue is discussed in chapter 6.

Increasing transparency

1.22. Running through all the issues outlined above is the theme of increased transparency. Our initial view is that through the application of the principles outlined in this document transparency, with respect to how decisions are made and what the costs of those decisions are, will be increased.

Next steps

1.23. Interested parties are requested to provide views on the issues set out in this document. We would especially welcome views on the general principles discussed and the specific questions set out at the beginning of each chapter. Details of how to respond can be found in appendix 1.

1.24. In October 2011, following consideration of responses to this document, we intend to publish a document confirming our views on the framework of general principles for the gas and electricity SO incentive schemes from 2013.

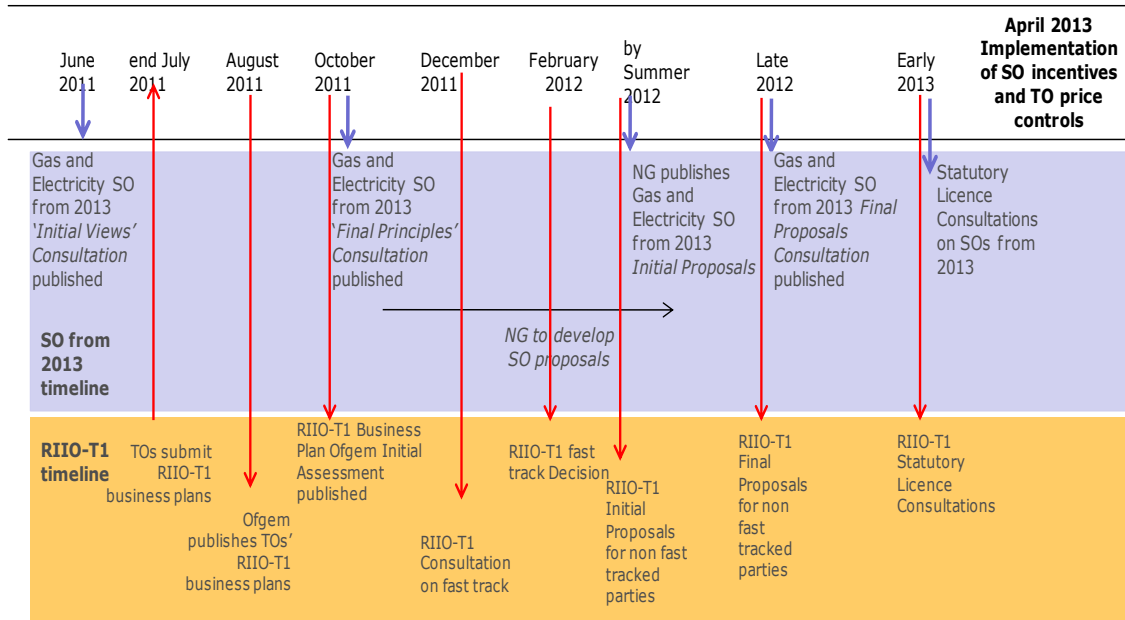
1.25. We consider that there may be merit in holding an industry workshop in Autumn 2011 to discuss the development of some of the issues raised in this consultation. We would welcome the views of interested parties on this.

1.26. We will then follow the same process for the development of SO incentive schemes as in recent years. That is, we will expect National Grid, as gas and

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electricity SO, to take the lead in developing specific proposals. It is expected that National Grid will publish its Initial Proposals by summer 2012 – see figure 1.1.

Figure 1.1: Timeline for the SO 2013 schemes



2. Context

Chapter Summary

This chapter provides background on the gas and electricity SO roles and incentive schemes.

Question box

There are no specific questions in this chapter.

Role of the System Operators

2.1. NGG, a subsidiary of National Grid plc (NG), is the SO for the high pressure gas National Transmission System (NTS) in Great Britain (GB).² It has responsibility for the residual balancing activities on the NTS and its transportation licence requires it to act in an efficient, economic and co-ordinated manner in performing its role.

2.2. NGET, also a subsidiary of NG, is the SO for the high voltage electricity transmission system in GB.³ It is responsible for making sure that electricity supply and demand stay in balance and the system remains within safe technical and operating limits. NGET's transmission licence also requires it to act in an efficient economic and co-ordinated manner in performing its role.

2.3. In addition to their licence requirements, the SOs must perform their roles⁴ to deliver minimum standards and meet their obligations which are set out in legislation and a range of other documents.⁵

2.4. SOs also have to work with the TOs to ensure that together they can deliver the overall network and operational services to customers. The current relationship between the SOs and the TOs is shown in figure 2.1. Importantly, while some areas of the TOs' and the SOs' roles are discrete, there are various levels of interactions.

² NGG also owns the high pressure gas NTS in GB.

³ NGET is also the owner of the high voltage electricity transmission network in England and Wales, whilst in Scotland the transmission network is owned by Scottish and Southern Energy and Scottish Power. The high level relationship between the SO and the TOs is defined in the System Operator-Transmission Owner Code (STC). The STC is supported by a number of procedures (SO-TO Code Procedures or STCPs) that set out in greater detail the roles, responsibilities, objectives and rights of the relevant parties.

⁴ The role of the SO in gas and electricity is generally similar, although there are some differences. Throughout this document, as far as possible we discuss both gas and electricity SOs together and in such cases the reader should be made aware that the terminology used may be more appropriately applied to one or the other.

⁵ For example, SO obligations are included in primary and secondary legislation, various industry codes, NGG's Safety Case, National Electricity System Security and Quality of Supply Standard (SQSS) and supporting documentation.

2.9. The SO incentive schemes are, in general, risk sharing arrangements as the extent of risk sharing between the SO and consumers is determined by the level of upside and downside sharing factors.⁶ However, some of the gas SO incentive schemes are performance incentives where the users' appetite for improved performance is ascribed a financial value, e.g. gas demand forecasting.

2.10. Caps and floors are also generally used within the SO incentive schemes to provide upper and lower bounds on the risk/reward that the SO is exposed to. Consumers then bear the full benefit (or cost) if the cap (or floor) on incentive payments is reached.

2.11. Based on our experience in recent years we remain of the view that the best way to achieve the lowest costs to consumers is to provide the SO with commercial incentives whereby it shares some of the gains (or losses) from cost reductions (or increases). We consider that the SO schemes that have been in place to date have played an important role in ensuring such an outcome.

2.12. However, as outlined in chapter 1, we consider there are a number of wider industry developments that mean it is now an appropriate time to:

- review the current structure of the incentive schemes; and
- consider how best the SOs should be incentivised such that they can fully perform the key roles they will have in ensuring that these necessary wider developments come to fruition. In particular, the new schemes will need to consider the interactions between the SOs and the TOs.

2.13. The following sections summarise the current position regarding the external SO incentive schemes for electricity and gas.⁷

Electricity schemes

2.14. Since 2001, when the New Electricity Trading Arrangements (NETA) were introduced, electricity SO incentive schemes have taken the form of a single target for the Incentivised Balancing Cost (IBC) with sharing factors, a cap and a floor.⁸

⁶ "Sharing factor" and "efficiency incentive rate" are used interchangeably in this document.

⁷ In addition, the gas and electricity SOs are incentivised in respect of their internal costs (e.g. staff, IT costs). These schemes from April 2013 are being considered within the RIIO-T1 process.

⁸ If NGET's external costs are below (or above) the IBC target, NGET receives a percentage of the saving (or pays a percentage of the excess cost) determined by the sharing factor. The cap and floor are the respective maximum payment and loss that NGET is permitted to receive (or pay) as a result of the SO incentive scheme. A deadband has also been used in recent years to manage the uncertainty associated with an agreed ex ante forecast of incentivised costs. The electricity SO also has a volume target on losses within its bundled scheme. This works by converting any under or over performance against a volume target into a cost that is added to the overall balancing cost.

2.15. In recent years, and particularly since the introduction of the British Electricity Trading and Transmission Arrangements (BETTA) in 2005, electricity SO costs have generally risen and become more volatile. As a result, it has become increasingly difficult to set an appropriate target and parameters for the SO incentive scheme. At the same time, it has become ever more important to provide appropriate incentives on NGET to manage SO costs efficiently in the face of new challenges giving rise to potentially higher and more volatile SO costs.

2.16. As part of setting the 2010 electricity SO incentive scheme, a special licence condition (AA5I) "Review of methodology and requirement to develop a balancing services activity revenue restriction on external costs covering two or more years" (the SO Review) was therefore placed on NGET.⁹

2.17. As part of the SO Review and the RIIO-T1 price control, we highlighted the need to improve the interactions between the SO and the TOs. In particular, to enhance the TOs' incentives to take account of SO issues, e.g. potential constraint costs when planning outages and investments. We also asked NGET to take forward work on interactions between the SO and the TOs and to consider ways in which outage planning can be improved under the SO-TO Code (STC).

2.18. In June 2011, we published our final proposals for the electricity SO scheme to apply retrospectively from April 2011. In this document we proposed a bundled two year SO incentive scheme with a number of improvements that we consider will be to the ultimate benefit of consumers. This scheme is based on a new methodology which we consider will enable the further development of longer term SO schemes. This document concluded the SO Review and we expect that the conclusions of the SO Review (subject to consideration of respondents' views and NGET consenting to the associated licence modifications for the incentive schemes to apply from April 2011) will provide the groundwork for developing the electricity SO incentives from 2013.

Gas schemes

2.19. In recent years, NGG has been subject to a number of different incentives relating to its SO activities. These incentives have been developed over a number of years through a more ad hoc approach and have targets which are set in different ways. For example, some have performance measures, e.g. percentage demand forecast error, some schemes have volume targets, e.g. Unaccounted for Gas (UAG), and some have direct cost targets, e.g. NTS Shrinkage. Each scheme also has its own parameters defining the level of risk the SO will share with consumers in undertaking these activities as well as caps and floors on the SO's exposure.

⁹ The SO Review had three objectives: (1) in terms of the methodology: to develop an appropriate methodology for an SO incentive scheme suitable for application to multi year incentive schemes; (2) in terms of the modelling: to develop NGET's modelling tools to provide reliable analysis to support setting scheme parameters for the given methodology; and (3) in terms of the application: to develop a workable approach for the application to an SO incentive scheme for implementation on 1 April 2011.

2.20. These incentives have been set for periods of between one and five years. Two of these incentive schemes¹⁰ will expire on 31 March 2013. All other gas SO incentives will expire on 31 March 2012.¹¹ Table 2.1 summarises the current schemes and their duration.

Table 2.1: Current gas SO schemes and their duration

Incentive scheme	Duration	Objective
NTS Shrinkage	3 years	Minimise costs of purchasing gas and electricity for shrinkage
NTS Unaccounted for Gas	3 years	Reduce volumes of unaccounted for gas
Residual Gas Balancing	2 years	Target any costs of NGG's actions due to participants' imbalance, whilst minimising the impact of its trades on the market
Demand forecasting	2 years	Minimise the error in NGG's demand forecast
Website timeliness and availability	2 years	Encourage timeliness and availability of published information
Greenhouse Gas (GHG) Incentive	2 years	Minimise GHG emissions due to venting of compressors
Operating Margins (OM)	2 years	Minimise availability and utilisation costs within a bundled incentive scheme
Operational buyback scheme	5 years ¹²	Minimise capacity constraints for existing capacity
Incremental buyback scheme	5 years	Minimise the capacity constraints due to late delivery of newly released Entry Capacity

2.21. In May 2011, Ofgem published an open letter setting out the process for the review of the gas SO incentives that are due to expire in April 2012. In that letter we asked NGG to develop proposals for the roll over of these incentives until March 2013 to facilitate alignment with the other gas SO incentives.¹³ This will facilitate an in depth review and the development of new gas SO incentive scheme(s) to apply from 1 April 2013 that are aligned with RIIO-T1 principles and implementation of the new TO regulatory framework.

¹⁰ Those relating to OM gas and GHG emissions from compressor venting.

¹¹ These incentives were designed to enable new incentives to be put in place for the start of the new transmission price control period which was planned to be 1 April 2012. However, with the introduction of RIIO, the start of the next transmission price control period has since been postponed until 1 April 2013.

¹² The form of this incentive was set for five years, although the parameters were reviewed partway through.

¹³ The SO capacity buy back incentive scheme have been set within the transmission price control process. The rollover of these schemes to 31 March 2013 is also being taken forward with the rollover of the transmission price control.

3. Determination of outputs to be incentivised

Chapter Summary

This chapter highlights the outputs of the electricity and gas SOs and discusses which of these it may be appropriate to incentivise.

Question box

Question 2: Do you consider that we have identified all the relevant outputs for the electricity SO? Should we consider any other outputs?

Question 3: Do you consider that we have identified all the relevant outputs for the gas SO? Should we consider any other outputs?

Question 4: Please provide your views on which of the outputs of both the electricity and gas SOs should be incentivised.

Question 5: Do you agree that it may be more appropriate to place licence obligations (funded through the internal gas SO incentive scheme) with respect to UAG and /or Information Provision?

Question 6: Is there a need for greater incentivisation of NGET and NGG with respect to customer satisfaction? If yes, what form should this incentivisation take?

Determination of outputs

3.1. The RIIO approach to regulating networks is an outputs led regulatory framework. Clear identification and encouragement of what needs to be delivered for consumers and stakeholders can also be of use in SO incentives.

3.2. An outputs led approach is an effective way of promoting efficiency. By defining what the SOs are required to deliver, companies face powerful incentives to seek the best sustainable and efficient solutions to delivering the services required by customers.

3.3. In designing the SO schemes arrangements from 2013, we will set clear and comprehensive outputs that the SOs will have to deliver to benefit from the incentive schemes that we set.

3.4. In addition to considering the current gas and electricity outputs (explored below) in developing our thinking on the SO incentive schemes from April 2013, we will also need to take into account any new outputs that may arise as a result of any possible change to the SO role. For example, as a result of the Electricity Market Reform, the SOs' roles and or/responsibilities may change. We would therefore need

to consider the potential implications on the SO incentive schemes and their interactions with the TOs' price control.

Electricity SO outputs

3.5. To date, the electricity SO has been incentivised on its total balancing costs and to minimise transmission losses. However, there are a number of other outputs that the SO is required to deliver as part of its role. We consider that NGET's SO outputs are listed below but we would be interested in respondents' views as to the completeness of this:

- maintaining the statutory minimum standards for system voltage and frequency, which it achieves by:
 - maintaining energy and system balance by:
 - procuring energy in the balancing mechanism;
 - procuring (via contracts) other balancing services (e.g. in respect of frequency response and reserve);
 - procuring other ancillary services (e.g. reactive power and black start);
- minimising the volume of transmission losses;
- forecasting demand;
- continuous monitoring of generation and demand levels;
- minimising energy not supplied following a loss of supply event;
- provision of information to stakeholders;
- maintenance and operational planning;
- production of the Seven Year Statement;
- responsibility for certain management processes – for example, the Grid Code and the Connection and Use of System Code (CUSC);
- carrying out its role in a manner that offers customer satisfaction;
- providing a wide range of information relating to the transmission system in GB;
- protecting the safety, health and welfare of its employees and its responsibility to conduct operations in ways that are most protective of public safety;
- consideration of its environmental impacts; and
- communicating to parties who may be interested in providing balancing services.

Outputs currently incentivised

3.6. As part of the SO Review that we have undertaken we considered what electricity SO outputs should be incentivised. We consider that the outputs that should be incentivised following implementation of the electricity incentive scheme from April 2011 should, at minimum, continue to be incentivised from 1 April 2013. Consideration of other outputs to be incentivised is discussed later in this chapter.

Gas SO outputs

3.7. As the gas SO outputs have not (to date) been subject to as comprehensive a review as in electricity, in this section we consider the SO outputs that are currently incentivised and consider whether it is appropriate to continue to incentivise these outputs. We then consider other SO outputs (that are currently not incentivised) and whether it is appropriate to incentivise these.

3.8. Under the terms of its Safety Case, NGG is required to operate the gas transmission system safely, maintaining safe pressures through undertaking its balancing role, managing network capacity and ensuring it has access to sufficient levels of gas reserves to maintain NTS pressures. The system has to be designed and operated to meet the Safety Case, being able to safely manage the system for a variety of events (e.g. supply losses, pipe breaks, compressor failure, etc). A quantity of gas is also procured to manage the orderly rundown of the system following the declaration of a Gas Supply Emergency.

3.9. The obligations identified above therefore lead to a number of identifiable outputs:

- ensuring NTS entry and exit capacity is made available, including incremental and interruptible capacity;
- specification of entry and exit requirements, including in respect of gas quality;
- production of demand forecasts;
- monitoring inputs and offtakes to and from the NTS to ensure safe pressures are maintained;
- maintaining system balance in terms of volume of gas inputs and offtakes;
- calculation of daily quantities of gas, imbalances and reconciliation;
- procuring options for the utilisation of operating margins gas;
- maintenance and operational planning;
- calculation and purchase of gas and electricity to meet shrinkage requirements;
- publication of information in respect of the NTS;
- carrying out its role in a manner that offers customer satisfaction;
- responsibility for certain management processes;
- consideration of its environmental impact; and
- production of the ten year statement.

Outputs currently incentivised

3.10. Table 3.1 summarises our views in respect to the ongoing incentivisation of the current incentivised outputs.

3.11. As table 3.1 illustrates, our initial view is that it is appropriate to incentivise NGG with respect to the majority of the outputs currently incentivised. With respect to the information provision output and potentially the UAG output, our initial view is that it may be more appropriate to place direct licence requirements into NGG's licence to carry out certain activities relating to these outputs and to fund these activities via NGG's internal SO incentive schemes.

Table 3.1: Outputs currently subject to SO incentive schemes

Output	Discussion	Initial view: incentivise output?
GHG emissions – vented from NTS compressors	There are currently no environmental taxes or incentive schemes applying on a GB wide basis on emissions of methane. An SO incentive scheme is required to provide a financial incentive on NGG with respect to minimising these emissions.	Yes
Residual Gas Balancing	Residual balancing and management of linepack are key roles for the SO. Incentives are required to incentivise the SO to act efficiently in these roles and to minimise impact on market operation.	Yes
Demand forecasting. Accuracy of the daily (13:00 D-1) forecast for total system demand of gas	Accurate demand forecasting is central to the effectiveness of the gas market. Incentive necessary to ensure SO continues to provide good quality forecasts.	Yes
Information publication – making key data available to the market	This incentive has delivered significant improvements in the provision of information by NGG. We consider that it may be appropriate to replace this incentive with a licence requirement on NGG relating to this information provision. In this situation, we propose funding this information provision via NGG’s internal SO incentive scheme.	No
NTS Shrinkage – minimise costs of shrinkage energy	It is important that NGG continues to be incentivised to minimise overall cost of NTS Shrinkage.	Yes
Unaccounted for gas (UAG) – incentivises reduction in gross level (either positive or negative) of UAG ¹⁴ volumes	Ofgem is currently considering an appropriate way forward with respect to the regulation of NGG’s UAG role from 1 April 2012. ¹⁵ As part of this, we are considering whether it is appropriate to place direct licence obligations on NGG with respect to this role instead of an incentive scheme. The outcome of this consultation will inform the setting of incentives from April 2013. ¹⁶	See results of 2012/13 consultation.

¹⁴ UAG is gas that is unallocated after accounting for all measured NTS inputs and outputs.

¹⁵ See Open Letter concerning the rollover of NGG’s SO incentives that are due to expire on 31 March 2012, Ofgem, 17 May 2011. This is available at: www.ofgem.gov.uk/Markets/WhlMkts/EffSystemOps/SystOpIncent/Documents1/Open%20letter%20rolloverB.pdf

¹⁶ Note our initial view is that the cost of procuring UAG should be continue to be incentivised.

Output	Discussion	Initial view: incentivise output?
Capacity buyback – minimise costs of buying back capacity for network management (incremental capacity buybacks and operational capacity buybacks)	Incentives are central to the arrangements by which the SO can provide incremental and operational capacity. The effectiveness of the arrangements relies on existence of incentives.	Yes
OM – minimising costs of procuring OM gas.	Important that NGG continues to be incentivised to minimise costs of OM.	Yes

Incentivisation of other electricity and gas SO outputs

3.12. As outlined above, we have identified a number of other electricity and gas SO outputs and we are considering the appropriateness of placing incentives on NGET and NGG with respect to these outputs for the 2013 schemes. We discuss three of these potential new incentives below:

- Incentive on NGET as electricity SO in respect of energy not supplied:** the SO has a role in minimising energy not supplied by coordinating the supply restoration process following an electricity loss of supply event. The March RIIO-T1 document suggested that the TOs should only be responsible for energy not supplied until the point at which they declare their assets available for service. Costs incurred during the time between that declaration and the restoration of supplies would then be attributable to the SO. Currently, the SO is not incentivised on the output of energy not supplied and we would be interested in respondents' views as to whether this should be the case going forward.
- Incentive on NGG as gas SO for maintenance scheduling:** The transmission network maintenance schedule is set by NGG in consultation with shippers.¹⁷ During previous gas SO incentive consultations, shippers have suggested that it may be appropriate to incentivise NGG to take into account the costs incurred by shippers pursuant to the maintenance schedule. We would welcome views on the materiality of this issue and how any incentive could be structured.
- Incentive on NGET and NGG in respect of customer satisfaction:** We are considering whether it is appropriate to include a customer satisfaction incentive on the SOs. Such an incentive would be designed to enable a level of payment to the SO in response to a set level of satisfaction from customers. This might be similar to the RIIO-T1 customer satisfaction output and financial incentive as described in the March RIIO-T1 document and being developed as part of RIIO-T1. As in that case, an incentive on NGG/NGET as SO to ensure that it is responsive to its customers' requests may be beneficial in reflecting performance

¹⁷ The process is set out in the UNC and within network entry and exit agreements.

that cannot easily be measured through any other output. However, the situations for SOs relative to TOs are different and might impact on how issues of design affect the effectiveness of the approach. Consideration of any such incentives would need to look at potential unintended consequences, such as the risk of strategic answering by customers whereby they might deliberately give lower satisfaction scores to reduce the payments that the industry has to make to the SO under the incentive scheme. There may also be a danger of double-counting, since the variables which drive the customer satisfaction may include variables which Ofgem is separately rewarding under other incentive schemes. We therefore welcome views on whether such an incentive is appropriate with respect to the SO role. A potential alternative to an incentive scheme may be a licence requirement on NGG/NGET to collect prescribed feedback from customers.

3.13. We will be developing our thoughts on incentives on these three outputs and the other outputs of the SOs during the next phase of the consultation. We would welcome views on which outputs should be incentivised and the possible form of such incentives.

4. Packaging outputs into schemes incentivising delivery

Chapter Summary

In this chapter we discuss possible ways to package incentive schemes. It considers the merits of continuing with the current electricity SO scheme design and how any additional outputs could be packaged. It also considers further packaging of the incentive schemes for the gas SO and the ways in which this can be achieved.

Question box

Question 7: Do you consider that the reasons we have proposed for bundling are reasonable? If not, please provide your views as to why.

Question 8: Do you consider that the options for bundling are reasonable? Are there any additional options that we should be considering?

Question 9: Do you consider that, based on the current outputs that are incentivised, continuing to bundle the electricity SO scheme is appropriate?

Question 10: If you consider that the electricity SO should be incentivised on additional outputs, should these be part of the same bundled scheme? If not, how should the incentives be packaged?

Question 11: Do you consider that there is merit in increasing the number of gas outputs incentivised through a single scheme?

Question 12: How do you consider the outputs of the gas SO should be incentivised?

Question 13: How do you consider that the incentives on the gas SO should be packaged?

Background

4.1. An SO incentive scheme can, in general, be designed in two ways, with it either having:

- a separate incentive scheme for each output of the SO; or
- a number of different SO outputs which are packaged together within one scheme – that is, the scheme is bundled.

4.2. A bundled scheme has a single target that reflects the sum of the expected performance against all of the outputs contained within the package. The effect is that performance against the individual outputs within the package is aggregated in

the evaluation of the SO's performance such that gains in one area are offset against losses in another.

4.3. The level of bundling that is currently found in the SO schemes are:

- in the final proposals for the electricity SO incentive scheme to apply from 1 April 2011, we proposed a single bundled cost minimisation incentive scheme covering all incentivised cost categories.
- for the gas SO outputs, although they are incentivised through nine separate incentive schemes, there are some elements of bundling within the schemes, e.g. the shrinkage incentive takes into account three different volumes (compressor fuel usage (also referred to as Own Use Gas (OUG)), CV (Calorific Value) shrinkage and UAG).

Reasons for packaging schemes

4.4. We consider that there are two main factors that need to be considered when determining whether it is appropriate to bundle an SO incentive scheme: the level of interactions between the outputs; and the impact on the managerial focus of the SO. Each of these factors is explored below.

4.5. There are a number of potential interactions between different SO incentive schemes and these can represent either:

- a 'double impact', whereby an action under an incentive scheme has the potential also to improve performance under another incentive scheme; or
- a trade-off, where an action under one incentive scheme has the potential to undermine the performance in another area.

4.6. As a bundled scheme has a single target that reflects the sum of the expected performance against all of the outputs contained within the package, the double impact and the trade-off effect can be more readily captured within a bundled scheme relative to an unbundled scheme.

4.7. There could also be instances where there is difficulty in measuring related outputs – for instance, it might be difficult to separate out electricity SO external costs which relate to energy imbalances from those which relate to constraint management, given the inter relationships between the two. In situations such as this, it may be simpler and more transparent to measure both outputs in combination, thus avoiding the need for arbitrary allocation of costs between the two.

4.8. However, a combined measure constructed from unrelated outputs is likely to be less intuitive to stakeholders than measuring outputs separately. Combining outputs also makes the incentive schemes less transparent as stakeholders will be unable to identify where the SO is performing well and in which areas it is performing badly.

4.9. There are also general interactions between incentive schemes related to management focus. Senior management within the SO are likely to focus their time on those incentive schemes where the marginal rewards or penalties are greatest compared to the marginal costs of improving performance. Setting each scheme in isolation could lead to unintended consequences whereby the SO management focuses its attention on aspects of performance which do not provide the greatest benefits to consumers.

Options for packaging outputs

4.10. There are a number of options that could be used to incentivise separate outputs within an incentive scheme. Each of these options can be carried out to a greater or lesser degree:

- **No bundling:** where each incentive scheme is set in isolation and trade-offs are not expected or encouraged. This could be useful to apply a particular focus on a narrow performance issue.
- **Alignment of the sharing factors across incentives, while maintaining separate targets, caps and floors:** in this case, the financial trade-off between schemes is more transparent. The unbundled target, cap and floor can lead to distortions in the case where the cap or floor is reached in one scheme but not in the other. This may lead to behaviour to favour one action over another because profits could still be made in that scheme which could lead to increased overall costs for the consumer.
- **Financial bundling:** seeks to address the above distortions by providing a total financial reward or penalty that the SO can earn across the bundled outputs being subject to an aggregate cap or floor (instead of separate caps and floors for each output). This maintains separate targets for individual outputs, but overcomes some of the distortions that occur if we were to align sharing factors only.
- **Full bundling:** where the different outputs are combined into a single measure and a single incentive scheme is set which provides rewards or penalties for out-turn performance around a target for this combined measure. This creates the most transparent mechanisms to the SO for efficient trade-offs. This requires the target and effect of performance against all of the bundled outputs to be translated into a 'common currency', e.g. SO costs, as with the current electricity SO incentive scheme.

4.11. Each of the options outlined above are discussed further below. In each case, consideration is given to the level of interaction between different outputs. In any decision reached, further consideration would need to be given to the management focus issue mentioned above.

No bundling

4.12. An SO incentive scheme with no bundling has the advantage of allowing each incentive scheme to be designed to address any specific issues that arise for the output in question. This approach may be particularly suitable for incentive schemes based on outputs which cannot easily be measured in the same units as other

outputs (e.g. this may be appropriate for demand forecasting). While a monetary value could be placed on any output, in practice it may be difficult to place a robust monetary value on improved/worsened performance.

4.13. The main disadvantage of having no bundling in an SO incentive scheme is that it would fail to address interactions between incentive schemes, which could lead to inefficient outcomes. For instance, suppose the SO has a choice between taking two different actions to meet a system operation output. If these actions fell under different incentive schemes, and the SO was exposed to a different percentage of the cost of the actions under the two schemes, then the action which was least costly for the SO might not be the action which is the least costly for consumers.

Alignment of sharing factors

4.14. The main advantage of aligning sharing factors (without packaging the schemes) is that this would help to address interactions between incentive schemes.

4.15. For example, consider the case where the gas SO may be able to address a system constraint either through buying back capacity or by buying energy. These actions currently fall under different SO schemes; the capacity buyback and the residual balancing. If the incentive schemes have identical sharing factors then the SO will face an aligned incentive to identify the least costly action to meet its output, provided that it is within the cap and floor for both schemes.¹⁸ It should be noted that in the situation where the parameters are not aligned, trade-offs that are of benefit to consumers will still occur. However, there may be instances where the incentive does not result in an efficient decision.

4.16. A disadvantage of this approach is that it may be difficult to apply in practice in the case of outputs where the benefits to society of improvements in performance cannot easily be valued (e.g. demand forecasting).

4.17. A more general disadvantage is that it only resolves interactions while the SO remains within the caps and floors of the relevant schemes. Once the SO reaches the cap or floor of a scheme it faces no further incentive at the margin for that particular output. Hence, if the SO reaches the cap or floor of one scheme but not another, there is a potential for distortions to arise again because a sharing factor would continue to apply at the margin for one output but not the other. This issue can be addressed with the removal of all caps and floors, however, we recognise that there may be reasons for the inclusion of caps and floors in the scheme parameters, for example to limit the risk exposure of the SO.

Financial bundling

4.18. An advantage of bundling at a financial level, when applied alongside alignment of sharing factors, is that it would further help address interactions

¹⁸ The effect of being outside of the cap or floor is that the incentive rate becomes zero.

between incentive schemes. This is because it would avoid situations in which a distortion arises because the SO has reached the cap or floor in one incentive scheme but not another. Bundling at the financial level, without aligning sharing factors could enable the SO to be in a position to benefit from the overall caps of the bundled scheme, without the most efficient trade-offs being made.

4.19. If schemes are bundled at a financial level, with aligned sharing factors, the SO would either be performing within the cap and floor of the incentive scheme or it would have reached the combined cap or floor of the scheme. In either case, the SO would face the same incentive at the margin under all the schemes, and hence its choice as to which output it should seek to improve is not distorted by interactions between the incentive schemes.

4.20. Another advantage of bundling at a financial level is that it would reduce the likelihood of the SO ceasing to have a financial incentive at the margin in relation to some outputs because it had reached individual caps and floors.

4.21. However, a corresponding disadvantage of financial bundling is that it may increase the risk exposure of the SO, as the financial bundled scheme is likely to have a higher cap and floor than the separate schemes. Therefore, individual caps and floors may be more likely to be triggered than a combined cap and floor, thus meaning that individual caps and floors provide greater protection to the SO against risk. This is particularly the case if the SO's performance moves substantially away from the target for one output, such that the one output may result in the SO reaching the combined cap or floor of the scheme. This would also mean that the SO may no longer have a financial incentive for the other outputs that it is being incentivised on within the same scheme.

4.22. In considering financial bundling, with aligned sharing factors, there are therefore trade-offs that need to be considered. Where interactions between two incentive schemes are very strong, then the least distortionary outcome may be to bundle financially so that marginal incentives apply either to both outputs or neither. On the other hand, where interactions are weaker, there may be a case for not bundling financially to ensure that the marginal incentive to keep improving all outputs remains even if a related output has reached the cap or floor of its particular incentive scheme.

Full bundling

4.23. There are limited circumstances in which full bundling will yield further benefits over and above the benefits of alignment of sharing factors and financial bundling.

4.24. Full bundling may, however, be beneficial in some situations. In particular, where there is difficulty in measuring two related outputs separately, full bundling may be appropriate as this avoids the need for arbitrary allocation of costs between the measures. This can, for example, be seen with respect to the electricity SO costs that relate to energy imbalances and to constraint management – in this case, specific action undertaken by the SO to address either issue resolves both issues.

Similarly, where outputs are so inherently correlated that the incentives would necessarily be nested, bundling may be appropriate.

Electricity SO incentive scheme package from 2013

4.25. As we have indicated previously, recent electricity SO incentive schemes have been fully bundled as several NGET system operation activities affect, to some extent, several cost categories and can be a substitute for one another, e.g. one action in the balancing mechanism may resolve both a constraint and an energy imbalance. We consider that a bundled scheme provides NGET with perspective across its SO activities to enable it to create additional benefits that can be passed on to consumers.

4.26. Going forward, our initial view is that the SO electricity schemes from 2013 should remain bundled. We consider that the analysis we undertook as part of the recent SO Review provides a strong rationale for keeping the current bundled arrangement for the outputs currently incentivised. That said, an issue we will need to consider alongside the RIIO-T1 price controls is the extent to which overall efficiencies may be enhanced as a result of trade-offs between SO internal and external costs.

4.27. If we were to consider placing incentives on additional electricity SO outputs we would, however, need to consider whether they should be included within the existing scheme framework, or whether additional schemes would need to be implemented. The appropriate form of packaging would need to be considered in light of the outputs that were to be incentivised.

Gas SO incentive scheme package from 2013

4.28. For the gas SO incentive scheme we are considering the potential benefits of greater bundling between performance measures. We have concerns that the existing fragmented approach to incentivisation, which has developed over time, may not always ensure the most effective signals to the SO.

4.29. Our initial view is that we consider that there may be merit in increasing the number of outputs incentivised through a single scheme where:

- there are interactions between the outputs;
- the inclusion of more than one output within a scheme mitigates the risk of the scheme parameters being reached; and
- the existence of separate schemes could prevent management attention from being focussed in areas where most savings can be delivered.

4.30. We have given consideration to potential ways of packaging the gas SO incentive schemes based on the current measurement of incentivised outputs. We have also considered an option for packaging the schemes based on an alternative way of measuring these outputs. These are discussed below.

Packaging given current structure of the schemes

4.31. In considering the appropriate level of packaging for gas we have given consideration to whether there are interactions between the gas outputs currently incentivised. Although the interactions are not as obvious as in electricity, we consider that there are some material interactions between these schemes which could impact the SO's behaviour. These interactions include:

- **Minimise GHG emissions from compressor venting and NTS shrinkage:** at certain times, depending on flows on the system, NGG makes decision to stand down compressor units. When standing down compressors, natural gas is vented into the atmosphere and this venting feeds into the volumes measured under the GHG emissions incentive. An alternative to standing down a compressor would be to keep the compressor running. However, to keep a compressor running NGG needs to procure energy to run the compressor, which feeds into its NTS shrinkage incentive. It is therefore important that these incentives are aligned to ensure NGG is not incentivised to take inefficient actions.
- **Capacity buyback and residual balancing:** under certain circumstances the SO can achieve the same result by buying back capacity or by taking an action in the On-the-day Commodity Market (OCM). For example, to resolve a within day balancing issue where the system is long, NGG can either buyback capacity (resulting in less gas coming into the network) or make a balancing trade. As such, the incentives should work together to encourage the most efficient action.
- **Residual balancing and demand forecasting:** demand forecasting informs shippers of the amount of gas that will be used by their non daily metered (NDM) portfolio. If shippers balance to this forecast and the forecast is wrong they will be out of balance, which could cause the SO to have to take balancing actions.
- **NTS shrinkage and residual gas balancing:** the quality of the shrinkage estimate can affect the quality of the estimate of gas volumes allocated to shipper NDM portfolios. NGG uses shrinkage estimates (among other things) to determine the amount of gas that will be used by shippers' NDM customers. An incorrect shrinkage estimate could result in shippers putting in an incorrect amount of gas for NDM customers and being out of balance.
- **SO internal and external incentive schemes:** a further issue for consideration alongside the RIIO-T1 price controls is the extent to which overall efficiencies may be enhanced through trade-offs between SO internal and external schemes.

4.32. We have also considered the extent to which options for bundling (as described above) could be applied to the current gas SO incentives. If the schemes are kept in their current form, the level of bundling could be increased, including by:

- applying financial bundling via combined sharing factors, cap and floor but keeping all incentives separate, with corresponding separate targets;
- bundling of cost minimisation outputs. For example, a single cost minimisation scheme could be introduced covering current incentive schemes for Operating Margins, NTS shrinkage and GHG emissions. All other incentives schemes could remain separate; and
- financial bundling of all incentives. Cost minimisation outputs could be bundled as above with all other incentives being subject to separate targets, but all

incentives could be 'financially bundled' and therefore subject to overall scheme parameters.

Packaging under an alternative scheme structure

4.33. We have developed a proposal for consultation based on the creation of a new energy cost minimisation incentive to replace existing incentivised outputs. Under this option, a common measure is identified which would enable the SO to be incentivised under one mechanism.

4.34. Under this proposal, summarised in table 4.1, the gas SO outputs would be translated into energy volume minimisation outputs. The incentive would specify volumes of gas and electricity (for powering electric compressors) that the SO is responsible for managing, which could be given a price (or prices) to accommodate the inclusion of a carbon dioxide premium for relevant prices. We welcome views on this table and any alternative packaging arrangements.

Table 4.1: Possible volume/cost minimisation incentive scheme

Incentive	Energy/volume based form of incentive	Unit cost
Shrinkage	Volume of shrinkage energy (OUG, UAG and CV shrinkage).	Cost of SO energy plus premium for elements that relate to carbon dioxide emissions, i.e. from burning of gas
Demand forecast	SO responsible for residual imbalance due to demand forecast error – absolute volume	Cost of SO gas
Green house gas (venting)	Volume of gas vented based on a conversion of cost per tonne to volume using density (kg/m ³) of natural gas.	Cost of SO gas, plus premium for carbon dioxide emitted
Linepack	Volume aspect can be used in absolute terms to minimise change in line pack as existing incentive	Cost of SO gas
OM gas	Volume of OM gas contracted and utilised	Cost of OM gas
Operational buy back	Not energy/volume measure, but potential substitute for residual balancing actions	Buyback tender price
Residual balancing	Move from current price performance measure to cost of achieving balance (adjusted for market imbalance volume)	OCM price

4.35. A volume minimisation bundled incentive such as the one outlined above could be modified if certain outputs were considered to have value over and above the volume minimisation output. For example, one option would be to supplement this bundled incentive with the existing residual balancing price performance measure for NGG's actions within the market. This would allow NGG to minimise the volume of all its needs for volumes of gas while maintaining the incentive to minimise the impact of its trades on the market. The other existing incentives on incremental entry and exit capacity buyback schemes could remain as individual incentive arrangements and be subject to the RIIO-T1 single efficiency incentive rate as set out in the March RIIO-T1 document.

5. SO incentive scheme length

Chapter Summary

In this chapter we describe the benefits of longer term schemes. We discuss possible forms of longer term arrangements and potential risk sharing arrangements.

Question box

Question 14: Have all the benefits associated with moving to longer term incentive schemes been captured? Should any additional issues be considered?

Question 15: Can longer term SO schemes be implemented through the different approaches discussed, year by year incentives and multi year block incentives? What do you consider are the relative merits (or otherwise) of each approach?

Question 16: Is our proposed treatment of uncertainty and risk associated with longer term schemes reasonable? If not, please explain how this can be improved.

Benefits of moving to longer term schemes

5.1. There are a number of benefits of moving to longer term SO incentive schemes. These benefits, which are discussed below, include those associated with: contract costs; capital and operating expenditure; outage optimisation; industry code changes; information revelation and administrative costs.

5.2. The potential benefits available under longer term schemes are an important factor in our proposals to align the SO and TO incentives. One of the key elements of RIIO is the encouragement of longer term thinking and setting current decisions in a long term context. Part of the way this is to be delivered is through a move to an eight year price control for the TOs. Other elements emphasise sustainable delivery beyond those eight years.

5.3. Importantly, the extension of the length of the SO schemes, and SO and TO alignment are not dependent on each other. However, we consider that the benefits associated with extending the schemes would be maximised if this was the case.

5.4. We do recognise that there will be challenges associated with introducing longer terms schemes, most notably in how to deal with future uncertainty. The final proposals for the electricity SO incentive scheme to apply from 2011 highlighted the need for longer term schemes to allocate and manage risk appropriately and accommodate uncertainty over the length of the incentive period.

Longer term actions – contract costs

5.5. NGG and NGET enter into contracts to procure services, such as Operating Margins for gas and fast reserve and constraint management for electricity. While the

length of these contracts can vary from less than one month to multiple years, we consider there is greater scope for contract costs just to be passed through to consumers in a short term scheme relative to a longer term scheme. This is because under shorter term schemes more contracts have been tendered for or signed prior to the SO incentive scheme target being established. When longer term schemes are in place more contracts are agreed during the scheme duration, hence ensuring the SO is incentivised to reduce the costs associated with such contracts, to the ultimate benefit of consumers.

Longer term action – capital and operating expenditure

5.6. There may be cases where the SO could incur costs to improve efficiency that has a payback period (the time taken to recoup the costs and earn a reasonable profit) greater than the length of the incentive scheme – this is particularly the case with respect of capital expenditure, which can have a life measured in decades, but also applies to operating expenditure.

5.7. However, we consider that the relatively short length of many of the current SO incentive schemes limits the probability of such action being undertaken by the SO as its ability to recover its costs or make reasonable returns prior to the end of the scheme is limited.

5.8. Our initial view is that by setting a longer scheme, the SO could capture greater benefits as more actions would be possible within that extended time frame.

Longer term action – outage optimisation

5.9. During the development of the electricity SO final proposals for 2011 (which was also the concluding phase of the SO review), we identified that the period between 6–18 months ahead of the start of the outage programme may offer the greatest opportunities for optimising outages to allow SO and TO trade-offs to be made.

5.10. We consider that the ability of the SO to fully benefit from optimising outage planning over and above the TOs' baselines will be dependent on lengthening the SO schemes. In shorter term schemes, the SO may request the TOs to change their outage programme to reduce constraint costs, however, the SO's incentive target would then be set for the next period having taken into account the expected reduced level of constraint costs. For longer term schemes, the target would already have been set, thereby the SO would benefit from such changes to the outage plans.

5.11. While the benefits of outage optimisation are particularly relevant to electricity, we also consider that longer term SO schemes in gas will also ensure that outage planning is optimised to ensure the most efficient overall outcome.

Longer term action – industry code changes

5.12. A longer term incentive scheme could also strengthen the incentive for the SO to put forward changes to industry arrangements which make operating the system more efficient. The process for achieving change to policies, standards and codes can take significant time, where issues are complex and/or contentious it is not uncommon for a process to take two years.¹⁹ The current duration of the SO schemes means that the effect of an industry change may not be realised within the current scheme and therefore the SO may be more reluctant to pursue such a change as it would not see the benefit through its current incentive scheme.²⁰ Furthermore, the resources required to renew the SO schemes on such a regular basis may also limit the resources available to pursue such changes.

5.13. A longer scheme could help change this and may encourage the SO to take a longer term view. That is, it would create a stronger incentive to examine current arrangement and propose (and then implement) changes to industry arrangements. Consequently, there could be changes to the way in which responsibilities are allocated between the SO and market participants, which could lead to an improvement in the SO's ability to manage the system efficiently. This in turn would be to the ultimate benefit of consumers.

Longer term change – information revelation

5.14. Information asymmetry between the regulator and industry and the SO is a challenge regulators face in setting incentives. Industry will always be in a better place compared to the regulator to judge the efficient level of costs, although the regulator is often required to do so to ensure the best outcome for consumers.

5.15. A short term scheme may discourage the SO from making optimal cost savings. If the SO considers that the cost savings would be temporal it may be concerned that cost reductions could result in the regulator setting a lower target for the following year which would not be achievable.

5.16. A longer term incentive scheme would, however, reduce this concern as the target(s) for the duration of the scheme would be set ex ante which would mean that any saving that the SO did manage to generate would be kept by it for the duration of the scheme. While this benefit will largely accrue to the business, this will nonetheless provide greater understanding as to the level of efficiencies that are possible – that is, this could result in valuable information about the efficient level of costs being revealed, with the benefits passed to consumers over the longer term.

¹⁹ Examples of this include the BSC, CUSC, STC, SQSS, UNC, Safety Case.

²⁰ Again, assuming that the scheme was reset including the efficiency savings.

Longer term change – administrative costs

5.17. Moving to a longer term scheme would reduce the resources required to develop and implement the various schemes. It would allow these resources to be redirected to other areas where additional benefits could be achieved, which would be to the ultimate benefit of consumers.

5.18. The amount of resources that are required by Ofgem, SOs and the industry can perhaps be seen via examples of where significant resources have been required on a regular basis to develop the incentive schemes. For example, in 2009 as part of the development of the 2010/11 incentive schemes, NGET issued three mini consultations and its initial proposals, whilst NGG issued three consultations and an initial proposals document seeking to set five of the seven gas SO schemes.

Incentive scheme structure and parameters

5.19. We consider that longer term incentive schemes will allow the SO to retain the benefits (costs) associated with outperforming (underperforming) the target for a longer period. However, the scope and extent for this will depend on the design of the incentive scheme.

5.20. We consider that longer term schemes can be applied through two different approaches, namely year by year incentives and multi year block incentives. For each approach all the relevant scheme parameters would be set prior to the start of the scheme period. Each of these approaches is outlined below.

Year by year incentive scheme

5.21. A year by year incentive scheme comprises separate incentive targets, and potentially different scheme parameters for each year of the scheme, i.e. year 1 would have its own target, sharing factors, profit cap and loss floor, as would year 2 etc. For example, an eight year, year by year incentive scheme would have a target in each year of £100 million, rather than a single £800 million target across the whole period (as would be the case with a multi year block incentive). The existing longer term gas SO incentives take this form.

5.22. As the incentive parameters are set for each individual year of the scheme this approach ensures that there is an incentive in place for each year of the scheme. That is, using the same example as above, if the yearly target is only £100 million in any one year, even where the SO performs particularly well/badly in any one year it is limited in its exposure and will face another incentive in other years of the scheme.

5.23. There are, however, limitations associated with a year by year incentive scheme, these include that it:

- may create a limit on the scope of opportunities for which pay back is within the cap on the SOs share of benefits; and

- does not enable performance in one year to be offset against performance in another year.

Multi year block incentive scheme

5.24. Under a multi year block incentive there would be just one set of scheme parameters (target, sharing factors, profit cap and loss floor), for the whole period. Using the example illustrated above, under a multi year block incentive the target for an eight year scheme would be £800 million. The final proposals for the electricity SO incentive scheme from April 2011 take this form.

5.25. A multi year block incentive with one set of scheme parameters has the advantage of being simple and provides the SO with a large amount of flexibility in how to manage its activities along with the ability to offset variations in performance from year to year and hence, within limits, to manage its overall risk.

5.26. However, the downside of this approach is that the SO and consumers have a greater exposure to risk resulting from a large one-off shock, with the potential for the SO to incur the full benefit or cost for the entire longer term period in one year. While there are some mechanisms that can be used to help address this situation if it is outside of the SO's control, such an occurrence could weaken the financial incentive on the SO to operate efficiently for the remainder of the period.

Treatment of uncertainty and risk in longer term schemes

5.27. We consider that the volatility of costs experienced by the TOs and SOs are quite different. In general, we consider that the SO will be subject to greater volatility relative to that which the TO would experience. Specifically, we consider that the SO is more exposed to changing market conditions and factors outside of its control but which impact on its costs. We also consider that moving to longer term SO schemes may increase the risk that the SO is exposed to.

5.28. In developing the SO schemes we consider that there is a need for an appropriate uncertainty framework to reduce the scope for windfall gains and losses, while maintaining a strong incentive on the SO to manage risks within its control.

5.29. Consistent with the proposals for RIIO-T1, we are considering an appropriate framework for managing uncertainty over longer periods, including: uncertainty mechanisms; the potential for disapplication of the incentive; and a tightly defined mid-period review of output requirements.

Uncertainty mechanisms

5.30. Uncertainty mechanisms adjust the incentivised cost target or the incentivised output for unpredictable and uncontrollable external factors. This reduces the scope for windfall gains and losses, while incentivising the SO to more actively manage the

costs within its control. We have considered a number of uncertainty measures with respect to the electricity SO schemes as part of the SO Review.

5.31. We will need to give further consideration to appropriate equivalent measures with respect to the gas SO schemes (recognising that some uncertainty measures already apply). Uncertainty measures that will be considered include ad hoc automatic adjusters and automatic adjustment of the overall output or cost target.

5.32. Uncertainty measures have also been considered as part of RIIO-T1. The March RIIO-T1 document noted that TOs, in their business plans, have the option to suggest additional/alternative uncertainty mechanisms. In doing this, the TOs are, however, being required to provide evidence to justify their positions and they must also meet the RIIO criteria of providing value for money to consumers.

5.33. Another mechanism to deal with uncertainty under a longer term scheme is to consider a mid-period review. In the RIIO-T1 March document, we outlined that the scope of the mid-period review for the transmission price controls would be quite limited. We consider that application of similar restrictions would also be appropriate for any mid-period review of the SO schemes from 2013. Potential re-openers should be limited to:

- changes to outputs justified by clear changes in Government policy; and
- the introduction of new outputs that are needed to meet the needs of consumers and other network users.

5.34. We also consider that the current income adjustment provisions already provide an effective mechanism by which the SO schemes could be re-opened.

5.35. Finally, there could be scope for a mechanism to allow the disapplication of the incentive scheme. While we would expect that this would not be a concern it is a risk that has to be considered. Under this approach, we would need to determine arrangements for responding in the event that a company experiences deteriorating financial health. In the event that the SO experience financial distress beyond its control there may be merit in re-opening the scheme to relieve any financial distress it may be experiencing in a timely manner.

Risk sharing

5.36. Using uncertainty mechanisms to manage exogenous risk factors within an incentive scheme would result in the SO only facing the risks that it is considered able to best manage on behalf of consumers. The SO's exposure to these risks would then be defined by the incentive scheme parameters. In general, the SO schemes work by rewarding or penalising performance that moves away from a set target. However, the exposure to this risk is generally mitigated by the scheme parameters – the sharing factors, caps and floors and deadbands.

5.37. In a longer term incentive scheme there may also be additional risks associated with the performance of the incentive. For example, there may be a

greater likelihood of the SO hitting the profit cap or floor loss thereby dulling the incentive to outperform. This may be particularly visible where factors outside of the SO's control cannot be adequately captured through uncertainty mechanisms. Options to mitigate the performance risk associated with longer terms schemes include reducing the sharing factors, removing caps and floors or allowing a scheme re-opener if performance is significantly outside of the expected level.

5.38. The use of a scheme re-opener does create the potential for distorting the incentive to perform, where the SO would seek to hold back efficiencies in the event that it came close to the re-opener limits (either to preserve future efficiencies or seek to recoup losses). It would be important that the approach to a re-opener was set ex ante such that it maintains an appropriate incentive to outperform.

6. Achieving better incentive alignment between SO and TO

Chapter Summary

In this chapter we discuss alignment of incentives where the SO and TO is under the same ownership and where there is separate ownership of the SO and TO. We describe the different interactions between the SO and TO and how aligning incentives and allowing the SO to incentivise the TO to deliver enhanced levels of service could create benefits for consumers.

Question box

Question 17: Do you consider that it would be of overall benefit to consumers to better align the incentives of the SOs and the TOs?

Question 18: Please provide your views on the extent to which better alignment can be achieved through the alignment of the incentive schemes under the same and separate ownership.

Question 19: Please provide your views on the economic incentives to drive SO-TO interactions (“payment mechanism”). In what areas could this principle be usefully applied?

Background

6.1. System operation activities can be affected significantly by factors that may be outside of the SO’s control. Changes in TO activity fall into this category. For example, when a TO changes its plans the SO may not be able to identify and fully evaluate the potential impact of TO activities on its costs. This issue is compounded where the SO may be able to identify action that the TO could take that would promote overall system efficiencies.

6.2. In the March RIIO-T1 document we outlined the approach to setting the baseline level of service that would be funded through the TO price control. The transmission companies are now required to consider how they work with the SO and propose the baseline level of service through their business plans. In that document we made clear that we expect this process to result in greater consideration of the impact on the SO of decisions made by the TOs, as the SO is an important stakeholder. The process will enable the SO to ensure that its requirements are incorporated within the baseline policies that determine the investment plans of the TOs and enable any efficient behavioural and capital expenditure requirements by the SO already identified to be included within the TOs’ business plans.

6.3. In the March RIIO-T1 document we also highlighted areas where we believed that there were interactions with the SO, particularly in reference to creating greater

alignment between the SO and TO that would deliver better overall outcomes for consumers.

6.4. To ensure that the TO and SO work together to maximise efficiencies across the system where action identified by the SO to promote overall system efficiencies has not been incorporated within the baseline policies set under RIIO-T1, there needs to be mechanisms by which the TO can be incentivised to modify its behaviour during the price control period. The potential mechanisms to deal with these areas are considered below.

6.5. Importantly, the mechanisms outlined in this chapter should not result in the TOs putting forward a level of outputs that are lower than the baseline that they will have proposed in their business plans. Rather the mechanisms outlined in this chapter should be seen as delivering a level of service **over and above** the agreed baseline level.

6.6. We currently consider that there are two general types of interaction between the TO and SO:

- **Behavioural:** where the decisions taken by the TO and the SO relate to short term behavioural actions and do not generally involve investment decisions. In particular, where decisions taken by the TO affect the costs incurred by the SO. For example, in electricity, outage planning that may result in transmission constraints.
- **Capital expenditure:** where the SO might be best placed to identify capital expenditure needs but where in some cases the investment is best delivered by the TO. For example, in gas, new compressors that are more efficient leading to reduced operating costs.

6.7. However, we currently consider that the interactions between the SOs and the TOs are not explicitly taken account of in the existing regulatory framework. This is as a result of the combination of the separate incentives, the separate process for setting the incentives and the different timeframes involved (particularly in respect of one year SO incentives).

6.8. The lack of consideration of this interaction is perhaps best explained by means of an example. Consider the case where the gas TO has two possible options for replacing a compressor:

- the first is to replace the compressor with a standard compressor; and
- the second is to replace the compressor with a more expensive, but more fuel efficient, compressor.

6.9. If the TO procures the more expensive asset there is a risk that this may cause it to overspend the allowance it has been provided with via the transmission price control, which would mean that it would then have to bear a proportion of that cost. On the other hand, the SO may prefer the more expensive option if it considered that it would be able to capture the financial gain of future reduced fuel

consumption. The different financial incentives that the TO and SO face would result in the TO selecting the lower cost compressor while the SO would prefer the more expensive option as it would reduce its fuel use in operating the system.

6.10. In the case where the SO and the TO are commonly owned there is however scope for these different incentives to be traded off internally – that is, if the proportion of the retained savings by the SO exceeds the proportion of cost to the TO it will make the trade-off. However, differences in the efficiency incentive rates will lead to lesser or greater hurdles for that trade-off to be made as these rates control the proportion of the cost and the benefit to the company. For example, where the sharing factor is much lower in the SO function, the savings by the SO would have to be much higher than the incremental costs incurred by the TO for the trade-off to be beneficial to the company as a whole (even though there may be a net benefit for consumers).

6.11. As the example above demonstrates, the current arrangements already encourage trade-offs where the SO and the TO are commonly owned. However, it remains unclear if those trade-offs are actually being made or, in the case where they may be occurring, if they are being made for the long term benefit of the consumer or more for a shorter term profit motivation. That is, there is a lack of transparency in this process. Furthermore, it is not clear the extent to which the current incentive misalignments and the short term incentive schemes have led to missed opportunities or simply the wrong decisions being made. We consider that this is not optimal and that this situation could be improved.

6.12. The alignment of incentive parameters would not overcome the barriers to making the trade-offs between the incentive schemes where the SO and TO are not under the same ownership. Where separate ownership is present interactions may not be optimised as any trade-off between decisions is likely to lead to one party 'losing', by incurring all of the incremental cost (or reduced revenue), while the other party 'wins', seeing all of the cost reduction or increased revenue. This will prevent these trade-offs from being made willingly.

6.13. This situation exists, for example, in the electricity industry where there is separate ownership of the SO and the TOs in Scotland (and Offshore TOs). In this situation, it would be expected that current arrangements would lead to independent decisions being taken in line with the two parties' individual regulatory incentives. The lack of consideration of the costs imposed by one party on the other is that there may be higher overall costs to consumers.

6.14. Our initial view is therefore that the lack of an effective mechanism to facilitate the trade-offs between separately owned SO and TOs represents a missed opportunity for greater overall efficiency. The effect of this has been increasingly apparent and has led to us considering new regulatory structures to better facilitate these interactions and deliver best value for consumers.

6.15. We consider that in designing the SO incentive schemes to be implemented from April 2013 we will therefore need to:

- ensure that the interactions between the SOs and the TOs are taken into account;
- ensure that the relevant trade-offs are considered in the decision making process;
- ensure that the trade-offs and interactions are transparently assessed; and
- in cases where the trade-offs are not endogenously solved in the decision making process, enable the SOs to financially incentivise the TOs.

6.16. We note, however, that we do not consider that greater interaction between the TO and SO would deliver significantly more efficient outcomes in relation to transmission losses. Our initial view is that the SO and the TOs are able to optimise the impact of their actions or investment decisions on losses independently. Therefore, we do not see there being any significant alignment issues if we put an output measure on the TOs and retain separate incentives on the SO as is currently the case. We do, however, consider it is appropriate to apply a reputational incentive to this output on the TOs.

6.17. In the following sections we outline our initial thoughts on how interactions between the SO and TO, and the trade-offs between the SO and TO, can be addressed.

Alignment of incentives

6.18. Where the SO and TO are commonly owned it may be possible to achieve SO-TO alignment via the alignment of the incentive parameters, in a similar way to separate SO incentive schemes discussed in chapter 4. As with separate SO incentive schemes, where there are caps and floors these trade-offs may cease to be efficient when these limits are reached as the consumer is exposed to 100% of the incremental costs (or benefits).

6.19. However, where the TO and SO are under the same ownership, we consider that alignment of only the incentive parameters may not result in both parties acting in a transparent way to maximise the overall efficiency for the consumer. We discuss reasons for this below.

6.20. We note that NGET/NGG have the same owner for the electricity SO and TO for England and Wales and gas SO and TO respectively. We consider that this situation may encourage the SO and TO to cooperate to address behavioural and capital interactions where their incentives are aligned. That is, under the existing regulatory arrangements, there may be an incentive to make trade-offs between the SO incentive schemes and TO price control revenue, within incentive scheme periods.

6.21. The ability for the SO and TO under the same ownership to make efficient trade-offs between incentive schemes is likely to be most effective where the SO incentive schemes are set for a sufficiently long period and the efficiency incentive rates between the SO and TO are aligned. In these circumstances, the incentive to optimise longer term actions and capital investments would be strongest and have the greatest potential for net benefits to consumers. Where the incentive period is not sufficiently long, such that either the SO is unable to gain sufficient benefit or the

investment is delivered beyond the incentive period, the incentive to optimise its actions with the TO may be lost, even though it could result in a net benefit to consumers.

6.22. As the current incentives on NGET and NGG for SO and TO are set for different durations and have different efficiency incentive rates, there are potential distortions in the overall incentives to maximise overall system efficiency. For example, consider a situation where the efficiency incentive rate on external cost savings (the upside sharing factor) made by the SO is 15%, whereas the TO's efficiency incentive rate is 100%.²¹ Under this scenario, if the TO incurred £1m on operating expenditure to reduce the SO's external costs by £5m, the company as a whole would experience a £1m TO cost but only a £0.75m benefit (15% of £5m) through the SO incentive scheme. The overall incentive for the company would therefore be to not incur the expenditure, even though the reduction in SO external costs that would have materialised would have benefited consumers. Under the same example, but with the same efficiency incentive rates (e.g. 15% for both TO and SO) the cost to the TO would be £0.15m while the benefit to the SO would be £0.75m. Therefore the overall incentive for the company would be to incur the expenditure, which would be to the overall benefit of consumers.²²

6.23. Our initial view is that it is appropriate to use incentive alignment to encourage the SO and TO to act consistently to the overall benefit of consumers where they are under the same ownership. However, we note that incentive alignment may not be practical in some circumstances. Where such alignment is not possible, there is a need for a mechanism to encourage the parties to act together such as to maximise overall system efficiency. In particular, there may be merit in using the payment mechanism approach to further sharpen the incentives for a commonly owned SO and TO. However, there are risks associated with this approach which would need to be mitigated.

Economic incentives to drive SO–TO interactions

6.24. We have developed an approach where it would be possible for economic incentives to drive SO–TO interactions. In particular, we consider that there may be merit in allowing the SO to pay the TO to undertake certain actions where it would promote overall system efficiency.

6.25. Importantly, the mechanisms outlined in this section should not result in the TOs putting forward a level of outputs that are lower than the baseline proposed in their business plans. Rather the mechanisms outlined in this chapter should be seen as delivering a level of service **over and above** the agreed baseline level.

6.26. We consider that this proposed payment mechanism is beneficial as we consider that the SO is in the best overall position to:

²¹ An efficiency rate of 100% means the TO incurs the entire operating cost. A rate of below 100% means that some of this cost is passed on to industry.

²² These figures are for illustrative purposes only.

- identify potential behavioural or capital expenditure interactions between the SO and the TO; and
- evaluate the efficiencies that would arise from certain actions of the TO relating to these interactions.

6.27. We therefore consider this mechanism will enable the SO to manage its relationship with the TO proactively.

Behavioural interactions

6.28. While a payment mechanism already exists under the STC arrangements for the electricity SO to pay the TOs to change their outage plans,²³ our initial view is that this mechanism could be extended to other behavioural aspects. Specifically, we consider that extending the use of such a mechanism will create incentive arrangements that allow the trade-off of costs under the TO price control against benefits in the SO incentive scheme to occur. We consider that such arrangements will permit net benefits to be realised for the benefit of consumers irrespective of the ownership of the SOs and TOs.²⁴

6.29. Our initial view is that under such a payment mechanism that the SO could pay the TO its costs for changing its plans (to provide a level of service over and above the baseline policies set in RIIO-T1, e.g. the network availability policy) plus an incentive payment. We consider that the SO is best placed to do this as it has a limited capacity to influence investment decisions that the TO will actually make. This mechanism is, however, best explained through the use of an example – in this case the interaction between the electricity TO's role in maintaining the network and the SO's role in managing constraint costs.

6.30. In our example, the TO (in line with its business case which has taken into account costs the SO will incur in managing constraints) has a four week outage planned on the network. If the constraint costs that will be incurred are higher than expected it is possible that it would be in the interests of overall efficiency for the TO to reduce the duration of the outage. However, in shortening the duration of the planned outage the TO would incur additional costs such as overtime payments. The use of a payment mechanism would, however, enable the SO to make a payment to the TO covering the additional costs it incurred in shortening the maintenance schedule, plus an additional incentive payment. Provided that the payment made by the SO to the TO is less than the constraint cost savings that arise from the increase in network availability there would be a net benefit, which would be to the ultimate benefit of consumers.

²³ An allowance of £1m (in 2004/05 prices) is currently available to the SO to make outage change payments to the TOs.

²⁴ It may be appropriate that the mechanism for enabling the trade-offs may be different between situations where the TO is owned by the same company as the SO, however, the aim is to deliver a similar financial incentive in either case.

6.31. Importantly, under this example, the payment made by the SO to the TO would feed through into the SO external cost scheme to allow the SO to consider the TO costs against the other costs it incurs in undertaking its role as SO.

6.32. With the introduction of a payment mechanism, and where the SO and TO are under the same ownership, we consider that the owner could benefit from payments made by the SO to the TO depending on the relative efficiency incentive rates of the two incentive schemes. To ameliorate this risk we consider that a safeguard would need to be established to ensure that any decisions and payments made through this mechanism would lead to benefits to consumers.

6.33. While the above example illustrates the problem and the potential benefit this may bring it is but an example of what may happen. In practice we expect that a payment mechanism is more likely to bring more effective SO-TO discussions that might lead to earlier warning from the SO to the TO of a potential problem rather than such explicit trade-offs. However, in either case, we consider that the presence of such a mechanism would be to the ultimate benefit of consumers.

6.34. Our initial view is therefore that the introduction of a payment mechanism will lead to greater alignment of behavioural interactions where regulatory arrangements are appropriately set and both the SO and TO are able to benefit from jointly optimising their activities. We also consider that this will facilitate the TO delivering a level of service **over and above** the agreed baseline level.

Capital expenditure interactions

6.35. The SO and the TOs have different overall objectives for capital investments:

- TOs have an incentive to minimise the costs of investment;²⁵ and
- SOs may benefit from higher levels of capital expenditure that may result in reduced operational costs (e.g. a new compressor is likely to be more efficient and therefore reduce the running costs incurred by the SO).

6.36. Importantly, this situation occurs even when the SO and the TO are commonly owned as incurring higher TO costs cannot be offset against benefits in the SO scheme due to the frequency of resetting the SO target (see the lengthening of the SO scheme in chapter 5).

6.37. As outlined above, a payment mechanism would allow the SO to pay the TO its costs for incremental investments above those expected to be undertaken within the RIIO-T1 defined baseline investment policy. This mechanism would be used where the SO identifies capital investments that could be made within the price control period that would have benefits for overall system efficiency. Importantly, the

²⁵ Under the RIIO framework, TOs will also be encouraged to think of different solutions to meeting their required outputs. As part of this, they should be looking at making better use of the existing network and this may require them to work with the SO.

rationale for the investment should be considered against the expected benefits over the full duration of the life of the asset.

6.38. Our initial view of how this would operate is that the SO would act in a similar way to other users or prospective users of the energy networks. The SO could therefore apply for some additional network capacity or capability (e.g. a change to substation design to increase flexibility) and the TO would have an obligation to respond to the application.

6.39. We also consider that any payments to the TO should be funded from the SO external cost scheme to allow the SO to trade-off these costs against other services it procures. The approach would also need to allow the TO to receive and retain (through the RIIO-T1 efficiency incentive rate) the SO payments and the SO to be able to retain a share of the benefits of its actions within the pay-back periods of a longer term scheme. Consideration would also need to be given to the appropriate pay-back period that would need to be taken into account.

6.40. Our initial view is therefore that we consider that this approach will lead to greater alignment of interactions where incentive parameters are appropriately set and both the SO and TO are able to benefit from delivering these incremental investment activities. We also consider that this will facilitate the TO delivering a level of service **over and above** the agreed baseline level.

Appendices

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Appendix 1 – Consultation Response and Questions

1.1. Ofgem would like to hear the views of interested parties in relation to any of the issues set out in this document. We would especially welcome responses to the specific questions which we have set out at the beginning of each chapter heading and which are replicated below.

1.2. Responses should be received by 26 July 2011 and should be sent to gb.markets@ofgem.gov.uk for the attention of:

Ian Marlee
Partner, GB Markets
Ofgem
9 Millbank
London
SW1P 3GE

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

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

1.5. Next steps: Having considered the responses to this consultation, Ofgem intends to publish a document in October 2011 outlining our views on the framework for the gas and electricity SO incentive schemes from 2013. We may also hold an industry workshop in Autumn to discuss the development of some of the issues raised in this consultation. Any questions on this document should, in the first instance, be directed to Giuseppina Squicciarini, Head of Regulatory Economics, GB markets (Ph: 020 7901 7366, email: giuseppina.squicciarini@ofgem.gov.uk).

CHAPTER: One

Question 1: Do you consider that the general principles we have used are appropriate? Are there any other principles that we need to consider?

CHAPTER: Two

There are no specific questions in this chapter.

CHAPTER: Three

Question 2: Do you consider that we have identified all the relevant outputs for the electricity SO? Should we consider any other outputs?

Question 3: Do you consider that we have identified all the relevant outputs for the gas SO? Should we consider any other outputs?

Question 4: Please provide your views on which of the outputs of both the electricity and gas SOs should be incentivised.

Question 5: Do you agree that it may be more appropriate to place licence obligations (funded through the internal gas SO incentive scheme) with respect to UAG and /or Information Provision?

Question 6: Is there a need for greater incentivisation of NGET and NGG with respect to customer satisfaction? If yes, what form should this incentivisation take?

CHAPTER: Four

Question 7: Do you consider that the reasons we have proposed for bundling are reasonable? If not, please provide your views as to why.

Question 8: Do you consider that the options for bundling are reasonable? Are there any additional options that we should be considering?

Question 9: Do you consider that, based on the current outputs that are incentivised, continuing to bundle the electricity SO scheme is appropriate?

Question 10: If you consider that the electricity SO should be incentivised on additional outputs, should these be part of the same bundled scheme? If not, how should the incentives be packaged?

Question 11: Do you consider that there is merit in increasing the number of gas outputs incentivised through a single scheme?

Question 12: How do you consider the outputs of the gas SO should be incentivised?

Question 13: How do you consider that the incentives on the gas SO should be packaged?

CHAPTER: Five

Question 14: Have all the benefits associated with moving to longer term incentive schemes been captured? Should any additional issues be considered?

Question 15: Can longer term SO schemes be implemented through the different approaches discussed, year by year incentives and multi year block incentives? What do you consider are the relative merits (or otherwise) of each approach?

Question 16: Is our proposed treatment of uncertainty and risk associated with longer term schemes reasonable? If not, please explain how this can be improved.

CHAPTER: Six

Question 17: Do you consider that it would be of overall benefit to consumers to better align the incentives of the SOs and the TOs?

Question 18: Please provide your views on the extent to which better alignment can be achieved through the alignment of the incentive schemes under the same and separate ownership.

Question 19: Please provide your views on the economic incentives to drive SO-TO interactions ("payment mechanism"). In what areas could this principle be usefully applied?

CHAPTER: Seven

There are no specific questions in this chapter.

Appendix 2 – Glossary

A

Ancillary Services

Mandatory, necessary or commercial services used by the electricity System Operator to manage the system and to meet their license obligations.

B

Balancing and Settlement Code (BSC)

Sets out the rules for governing the operation of the Balancing Mechanism and the Imbalance Settlement process and also sets out the relationships and responsibilities of all electricity market participants.

Balancing Mechanism (BM)

The mechanism by which the electricity System Operator procures commercial services (Balancing Services) from generators and suppliers post gate closure, in accordance with the relevant provisions of the Balancing and Settlement Code (BSC) and the Grid Code.

Balancing Services

The services that the electricity System Operator needs to procure in order to balance the transmission system.

Balancing Services Use of System charges (BSUoS)

The daily charge, levied by the electricity System Operator on users of the transmission system, in order to recover the costs of operating the transmission system and procuring and utilising Balancing Services.

Black Start

The ability to start a generating plant without external power supplies.

British Electricity Trading and Transmission Arrangements (BETTA)

The arrangements for the trading and transmission of electricity across Great Britain which are provided for by Chapter 1 of Part 3 of the Energy Act 2004, which have replaced the separate trading and transmission arrangements which existed prior to 1 April 2005 in Scotland and in England and Wales. BETTA introduced a single GB-wide set of arrangements for trading energy and for access to and use of the transmission system which came fully into effect at BETTA go-live (1 April 2005).

Buy Back

The process of compensating users if National Grid Gas (NGG) is unable to deliver entry capacity which is sold on a financially firm basis.

C

Compressor Station

An installation on the National Transmission System (NTS) that uses gas turbine or electricity driven compressors to boost pressures in the pipeline system; it is used to increase transmission capacity and move gas through the system.

Connection and Use of System Code (CUSC)

Constitutes the contractual framework for connection to, and use of, National Grid's high voltage electricity transmission system.

D

Deadband

The range of costs on either side of the target which the SO neither incurs or receives payment under an SO incentive scheme.

F

Fast Reserve

The fast provision of reliable power via increased generation or reduction in demand which can be provided within 2 minutes, at a delivery rate of less than or equal to 25MW/minute. The reserve needs to be sustainable for 15 minutes.

Frequency Response

The electricity SO has a statutory obligation to maintain system frequency between +/- 1% of 50 hertz. The immediate second-by-second balancing to meet this requirement is provided by continuously modulating output through the procurement and utilization of mandatory and commercial frequency response.

G

Gas Transporter (GT)

Formerly Public Gas Transporter (PGT). GT's, such as Northern Gas Networks, are licensed by the Gas and Electricity Markets Authority to transport gas to consumers.

I

Incentivised Balance Costs (IBC)

This refers to the external Balancing Services Incentive Scheme costs that are incurred by NGET in order to balance the electricity system.

L

Linepack

The volume of gas within the National or Local Transmission System at any time.

Loss Floor

The maximum loss that the SO will pay as a result of an incentive scheme.

N

National Grid Gas (NGG)

The licensed gas transporter responsible for the gas transmission system, and four of the regional gas distribution companies.

National Transmission System (NTS)

A high pressure system consisting of terminals, compressor stations, pipeline systems and offtakes. Designed to operate at pressures up to 85 bar. NTS pipelines transport gas from terminals to NTS offtakes.

O

On the day Commodity Market (OCM)

Enables anonymous financially cleared on the day trading between market participants.

Operating Margin (OM) (in gas)

Gas used to maintain system pressures under circumstances including periods immediately after a supply loss or demand forecast change before other measures become effective and in the event of plant failure, such as pipe breaks and compressor trips.

Operating Margin (OM) (in electricity)

A requirement to ensure that the system security can be properly managed across Power Exchange and Balancing Mechanism time-scales, i.e. 'up to' and 'at real time'.

Own Use Gas

Gas used by system operators to operate the transportation system, this includes gas used for compressor fuel, heating and venting.

P

Profit cap

The maximum payment that the SO is permitted to receive as part of an incentive scheme.

R

Reactive Power

Power generation creates background energy which absorbs or generates reactive energy as a result of the creation of magnetic and electric fields. Reactive power needs to be provided to assist in balancing the system and retaining its integrity.

S

Safety Case

Is a document required by the Gas Safety (Management) Regulations 1996. No person may convey gas without having a safety case accepted by the Health and Safety Executive.

Sharing factors

Describe the percentage of profit or loss which the SO will be subject to if the relevant incentive performance measure falls below or exceeds the relevant incentive target.

Shrinkage

Shrinkage is a term used to describe gas either consumed within or lost from a transporter's system. For example shrinkage can result from gas transmission companies using gas within their transportation systems to fuel gas compressors. At the distribution level, the majority of shrinkage results from gas escaping from old iron gas mains during transportation. Shrinkage also occurs when gas is stolen or not charged for in error.

System Operator (SO)

The entity charged with operating either the GB electricity or gas transmission system. NGET is the SO of the high voltage electricity transmission system for GB. NGG is the SO of the gas NTS for GB.

T

Transmission losses

Electricity lost on the GB transmission system through the physical process of transporting electricity across the network. The treatment of transmission losses is set out in the BSC.

Transmission Owner (TO)

There are three separate high voltage electricity Transmission Owners in GB. National Grid Electricity Transmission (NGET) owns and maintains the high voltage electricity transmission system in England and Wales. Scottish Hydro-Electric Transmission Limited (SHETL) is the electricity transmission licensee in Northern Scotland and Scottish Power Transmission Limited (SPT) is the electricity transmission licensee in Southern Scotland.

There is one gas Transmission Owner in Great Britain. National Grid Gas (NGG) owns and maintains the National Transmission System in Great Britain.

Appendix 3 – The Authority’s Powers and Duties

1.1. This description summarises the primary powers and duties of the Authority. It is not comprehensive and is not a substitute to reference to the relevant legal instruments (including, but not limited to, those referred to below)

1.2. The Authority's powers and duties are largely provided for in statute (such as the Gas Act 1986, the Electricity Act 1989, the Utilities Act 2000, the Competition Act 1998, the Enterprise Act 2002 and the Energy Acts of 2004, 2008 and 2010) as well as arising from directly effective European Community legislation.

1.3. References to the Gas Act and the Electricity Act in this appendix are to Part 1 of those Acts.²⁶ Duties and functions relating to gas are set out in the Gas Act and those relating to electricity are set out in the Electricity Act. This description must be read accordingly.²⁷

1.4. The Authority’s principal objective is to protect the interests of existing and future consumers in relation to gas conveyed through pipes and electricity conveyed by distribution or transmission systems. The interests of such consumers are their interests taken as a whole, including their interests in the reduction of greenhouse gases and in the security of the supply of gas and electricity to them.

1.5. The Authority is generally required to carry out its functions in the manner it considers is best calculated to further the principal objective, wherever appropriate by promoting effective competition between persons engaged in, or commercial activities connected with:

- the shipping, transportation or supply of gas conveyed through pipes;
- the generation, transmission, distribution or supply of electricity; and
- the provision or use of electricity interconnectors.

1.6. Before deciding to carry out its functions in a particular manner with a view to promoting competition, the Authority will have to consider the extent to which the interests of consumers would be protected by that manner of carrying out those functions and whether there is any other manner (whether or not it would promote competition) in which the Authority could carry out those functions which would better protect those interests.

²⁶ Entitled “Gas Supply” and “Electricity Supply” respectively.

²⁷ However, in exercising a function under the Electricity Act the Authority may have regard to the interests of consumers in relation to gas conveyed through pipes and vice versa in the case of it exercising a function under the Gas Act.

1.7. In performing these duties, the Authority must have regard to:

- the need to secure that, so far as it is economical to meet them, all reasonable demands in Great Britain for gas conveyed through pipes are met;
- the need to secure that all reasonable demands for electricity are met;
- the need to secure that licence holders are able to finance the activities which are the subject of obligations on them²⁸; and
- the need to contribute to the achievement of sustainable development.

1.8. In performing these duties, the Authority must have regard to the interests of individuals who are disabled or chronically sick, of pensionable age, with low incomes, or residing in rural areas.²⁹

1.9. Subject to the above, the Authority is required to carry out the functions referred to in the manner which it considers is best calculated to:

- promote efficiency and economy on the part of those licensed³⁰ under the relevant Act and the efficient use of gas conveyed through pipes and electricity conveyed by distribution systems or transmission systems;
- protect the public from dangers arising from the conveyance of gas through pipes or the use of gas conveyed through pipes and from the generation, transmission, distribution or supply of electricity; and
- secure a diverse and viable long-term energy supply, and shall, in carrying out those functions, have regard to the effect on the environment.

1.10. In carrying out these functions the Authority must also have regard to:

- the principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed and any other principles that appear to it to represent the best regulatory practice; and
- certain statutory guidance on social and environmental matters issued by the Secretary of State.

1.11. The Authority may, in carrying out a function under the Gas Act and the Electricity Act, have regard to any interests of consumers in relation to communications services and electronic communications apparatus or to water or sewerage services (within the meaning of the Water Industry Act 1991), which are affected by the carrying out of that function.

²⁸ Under the Gas Act and the Utilities Act, in the case of Gas Act functions, or the Electricity Act, the Utilities Act and certain parts of the Energy Acts in the case of Electricity Act functions.

²⁹ The Authority may have regard to other descriptions of consumers.

³⁰ Or persons authorised by exemptions to carry on any activity.

1.12. The Authority has powers under the Competition Act to investigate suspected anti-competitive activity and take action for breaches of the prohibitions in the legislation in respect of the gas and electricity sectors in Great Britain and is a designated National Competition Authority under the EC Modernisation Regulation³¹ and therefore part of the European Competition Network. The Authority also has concurrent powers with the Office of Fair Trading in respect of market investigation references to the Competition Commission.

³¹ Council Regulation (EC) 1/2003.

Appendix 4 – Feedback Questionnaire

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

1. Do you have any comments about the overall process, which was adopted for this consultation?
2. Do you have any comments about the overall tone and content of the report?
3. Was the report easy to read and understand, could it have been better written?
4. To what extent did the report's conclusions provide a balanced view?
5. To what extent did the report make reasoned recommendations for improvement?
6. Please add any further comments?

1.15. Please send your comments to:

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