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Electricity System Operator incentive schemes from 2013: disallowing costs and the efficiency in system operations reward scheme

Overview Document

Consultation

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Overview:

This paper builds on our initial proposals for incentives on the electricity System Operator (SO) from April 2013 and provides more details of our proposals relating to disallowing costs; efficiency in system operations reward scheme; model development and the forecast accuracy incentive scheme.

We seek views on all aspects of these proposals and in particular whether they will encourage the right behaviours from the system operator and provide value for money for present and future consumers.

*Responses are sought by **21 December 2012** to inform final proposals early next year.*

Context

These proposals form part of our work to regulate monopolies effectively. In our initial proposals for the electricity SO published in July, we proposed moving away from complex modelling and focussing more on establishing principles and monitoring outcomes with financial incentives consistent with this approach

Since such a move represents a significant change from the way in which we have regulated the electricity SO in the past, we considered it appropriate to consult in more detail on our proposals prior to publishing our final proposals.

This work builds on previous material published in both SO incentive schemes and RIIO-T1 documents.

Associated documents

- System Operator incentive schemes from 2013 initial proposals: Overview. 27 July 2012:
<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=306&refer=Markets/WhlMkts/EffSystemOps/SystOpIncent>
- System Operator incentive schemes from 2013 initial proposals: Supplementary appendices. 27 July 2012:
<http://www.ofgem.gov.uk/Markets/WhlMkts/EffSystemOps/SystOpIncent/Documents1/appendices%SO%2013.pdf>
- RIIO-T1: Initial Proposals for National Grid Electricity Transmission plc and National Grid Gas plc, 27 July 2012, Ref 104/12:
<http://www.ofgem.gov.uk/Networks/Trans/PriceControls/RIIO-T1/ConRes/Documents1/RIIO%20T1%20Initial%20Proposals%20for%20NGGT%20and%20NGET%20Overview%202707212.pdf>
- Decision on the concept for the implementation of the Environmental Discretionary Reward for the electricity transmission owners and system operator, 4 July 2012:
[http://www.ofgem.gov.uk/Networks/Trans/PriceControls/RIIO-T1/ConRes/Documents1/RIIO-T1%20-%20Environmental%20Discretionary%20Reward%20\(EDR\)%20decision%20letter.pdf](http://www.ofgem.gov.uk/Networks/Trans/PriceControls/RIIO-T1/ConRes/Documents1/RIIO-T1%20-%20Environmental%20Discretionary%20Reward%20(EDR)%20decision%20letter.pdf)
- System Operator incentive schemes from 2013: principles and policy, 31 January 2012, Ref 12/12:
<http://www.ofgem.gov.uk/Markets/WhlMkts/EffSystemOps/SystOpIncent/Documents1/SO%202013%20Principles.pdf>
- System Operator incentive schemes from 2013, 14 June 2011, Ref 77/11:
<http://www.ofgem.gov.uk/Markets/WhlMkts/EffSystemOps/SystOpIncent/Documents1/SO%20incentives%20from%20April%202013%20Initial%20Views%20Consultation.pdf>

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Executive summary

In our Initial Proposals, we explained that the electricity system and market arrangements in GB will go through significant changes to accommodate a more intermittent generation mix, more interconnection and a more integrated way to trade across borders with neighbouring countries. These changes will make it difficult to develop a robust cost target for the electricity System Operator (SO) which does not require regular revision. We also highlighted our concerns regarding the robustness and accuracy of the suite of models used to set the target for the electricity SO cost incentive, particularly in the context of a long term scheme. Continuing to use the current set of models could expose consumers to windfall gains and losses. Further, we also explained our view that the SO has been too focussed on short term cost reduction and on managing the regulatory relationship, and has not been sufficiently innovative or creative in seeking to anticipate and prepare for future market developments.

Recognising these problems, we proposed to move away from financial incentives based on detailed modelling of balancing costs to a broader incentive approach. We proposed to introduce incentives where outputs (renewable forecasts) or costs (possibly black start costs) can be clearly identified and measured. We also proposed to introduce a licence condition to enable us to disallow the recovery of SO costs, where these have not been incurred in an efficient or economic manner. At the same time, we wished to encourage National Grid Electricity Transmission (NGET) to “make a difference” in the way it operates the system and thereby ensure that it plays a full role in delivering a sustainable decarbonised electricity market. Consequently, we proposed that NGET should retain a proportion of any measurable net benefit to consumers resulting from the actions it takes that go well beyond “business as usual”.

Respondents to the Initial Proposals, and more generally, have emphasized to us the importance that they attach to the SO producing accurate forecasts of balancing costs, which necessarily rely on modelling. For this reason, we are now also proposing to introduce a financial incentive on the accuracy of the SO’s balancing cost forecast and a licence obligation to continue developing its models. This will allow us to consider the re-introduction of a cost incentive, similar to the one currently in place, provided that the models developed are sufficiently reliable, accurate and robust for the purpose of setting cost targets which do not require significant revision.

This document sets out further details of our proposals in both these areas, together with a draft of the licence conditions required to give them effect.

Under our proposal to disallow costs we would build on the current monitoring of outturn costs that we undertake to develop a threshold for instigating an investigation into disallowing costs. We propose setting the threshold at 0.5% of the costs of balancing services in the previous year. If outturn costs exceed our estimate of reasonable costs in any month by more than the threshold, we would first ask NGET to provide further data and an explanation for why balancing costs have been higher than seems justified. No action would be taken if the explanation was

satisfactory. We would consider only information that the SO could reasonably have had access to when the decision was made.

In the event that we were not satisfied, we would proceed to issue a formal notice specifying which costs we believe may not have been incurred (or likely to be incurred) in an efficient or economic manner. We would then undertake additional analysis to confirm our initial findings (if necessary) and would be open for representations from NGET and market participants. Having considered these representations, our recommendations would be presented to the Authority, who would decide whether any costs had been inefficiently incurred and the level of any inefficient costs. These costs would then be deducted from the costs that NGET is allowed to recover. We consider this an important mechanism in protecting consumers interests.

We would welcome views on whether there could be merit in introducing a floor on the level of costs that could be disallowed. For example this floor could be at the level of 10% of balancing costs in the previous year. However, consistent uneconomic and inefficient behaviour would remain subject to enforcement under Standard Licence Condition C16 which obliges the licensee to “co-ordinate and direct the flow of electricity onto and over the national electricity transmission system in an efficient, economic and co-ordinated manner” which if breached may be liable to a penalty of up to 10% of NGET’s turnover.

We are also proposing a scheme to award discretionary payments to the SO if it goes “beyond business as usual” in the way in which it operates the system – the efficiency in system operations reward. It would be for the SO to make the case for receiving a reward to Ofgem and an independent Expert Panel, who would recommend to the Authority whether a reward was justified. For successful projects, the reward would be equal to 25% of the net benefits of a project, calculated over an eight year period, subject to a cap of £25 million per year.

In general, we would expect the SO to come forward with evidence that projects which it had already undertaken had resulted in net benefits for consumers and for a decision on a reward to be on this basis. However, we recognise that there may be projects that require material up-front expenditure and, in these circumstances, we are proposing that the SO could apply for a reward before the project begins. If successful in its application, the SO would still receive the bulk of the reward after the project had been implemented and had provided proven benefits, but the SO would also receive funding towards the up-front costs.

Finally, we are also proposing to introduce a financial incentive on the SO in respect of the accuracy of its balancing cost forecasts. The SO would be able to earn a maximum of £5 million if its year-ahead forecast of balancing costs matched outturn costs and lose a maximum of £5 million if its forecast was more than 50% above or below outturn costs. The forecasting incentive would be coupled with a licence obligation on the SO to continue model development during 2013/14 and to provide a full audit and review of the models that it has developed during this process.



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*Consultation closes on **21 December 2012**. Responses should be sent to soincentive@ofgem.gov.uk. In January 2013 we will publish Final Proposals and consult on draft licence conditions.*

1. Introduction

1.1. We set out our initial proposals for incentives on the gas and electricity System Operators (SOs) from April 2013 in July. In that consultation, for the electricity SO, we proposed moving away from short term incentives based on detailed modelling of balancing costs in the form of the Balancing Services Incentive Scheme (BSIS) to a broader incentive approach. This broader approach included proposals to introduce licence conditions that would enable us to disallow costs that the SO has incurred if it could be demonstrated that the SO had incurred inefficient or uneconomic costs and to award discretionary payments to the SO if it was going “beyond business as usual” in the way in which it operates the system.

1.2. In this overview document we provide more details on the proposals for introducing licence conditions to enable us to disallow inefficient SO costs and to reward National Grid Electricity Transmission (NGET) for actions that go “beyond business as usual” to produce material benefits for consumers. Taking into account stakeholders’ views, we are also consulting on a new proposal to incentivise the accuracy of NGET’s forecasts and to ensure it continues to develop models for the possible re-introduction of a balancing services cost financial incentive scheme.

1.3. Recognising that our proposals represent an important change in the way the SO is regulated, we consider it appropriate to consult in further detail on our proposals in these areas before proceeding to our Final Proposals in January. To assist market participants in considering and commenting on the schemes presented we are organising a workshop on these proposals. We would also be happy to arrange bilateral meetings with stakeholders where they feel this is necessary to develop their understanding.

Where this consultation sits in the process and next steps

1.4. This document follows on from the Initial Proposals that were published in July 2012. This is part of a process that began in June 2011. Table 1 sets out the process so far and, in italics, an overview of the anticipated process from the publication of this consultation until the implementation of the SO incentives in April 2013.



Table 1: Setting incentives from April 2013: process and next steps

Date	Action
June 2011	Published consultation “System operator incentive schemes from 2013” setting out initial views on the principles that we consider should underpin longer term SO incentive schemes to apply from April 2013.
January 2012	Published consultation “System Operator incentive schemes from 2013: principles and policy” setting out proposed objectives, policy and principles for the regulation of the SOs from April 2013.
31 May 2012	The gas and electricity SOs (NGET and NGG) submitted their business plans setting out their proposed incentive schemes from April 2013
27 July 2012	Published consultation on “System Operator incentive schemes from April 2013: initial proposals”.
14 September 2012	Workshop with stakeholders to discuss our Initial Proposals
26 October 2012	<i>Consultation on disallowing costs and the efficiency in system operations reward scheme closes (this document)</i>
22 November 2012	<i>Workshop on this consultation. Please email soincentive@ofgem.gov.uk.</i>
21 December 2012	<i>Consultation on disallowing costs and the efficiency in system operations reward scheme closes. Responses should be sent to soincentive@ofgem.gov.uk</i>
January 2013	<i>Publication of Final Proposals and consultation on draft licence conditions</i>
February 2013	<i>Decision to modify the licence to be issued</i>
April 2013	<i>SO incentives in place</i>

1.5. The 22 November workshop to discuss these proposals will be held at Ofgem from 1.30pm to 4.00pm. If you are interested in attending the workshop, please email soincentive@ofgem.gov.uk stating your name, job title, and company. Please respond by 16 November 2012 and note that places are limited.

The role of the electricity SO

1.6. NGET as the electricity SO is responsible for balancing the system on a continuous basis across GB. To do this, the SO buys and sells energy and procures associated services. It also provides other services to market participants, such as forecasts of demand and has responsibility with respect to system planning. The SO is obliged under its licence to perform its role in an economic and efficient manner.

1.7. Since the middle of the 1990s, NGET has been subject to a range of different short term (one to two year) financial incentive schemes - the Balancing Services Incentive Schemes (BSIS). These have been designed to incentivise NGET to minimise the costs it incurs in undertaking its SO role.

Initial Proposals

1.8. Consistent with the approach we are taking for the transmission business price controls, we want to ensure that the incentives faced by the SO are based on the RIIO (Revenue= Incentives + Innovation + Outputs) principles for regulating monopoly energy companies. These principles ensure that sustainability and the needs of both current and future consumers are at the heart of regulation.

1.9. One of the key components of the RIIO principles is to encourage long term innovative thinking through a clear, transparent and stable regulatory framework. As with the network businesses more generally, we have concerns that the SOs have been too focussed on short term cost reduction and on managing the regulatory relationship, and have not been sufficiently innovative or creative in seeking “software” solutions rather than investing in “hardware”.¹ Innovative behaviour may also include shifting the focus from efficiently operating under current market arrangements to seeking to improve those arrangements.

1.10. In its business plan, NGET put forward proposals to use updated versions of the models currently used to determine the BSIS cost target as a basis for setting a long term incentive scheme for the period from April 2013 to March 2021. Its proposals envisaged yearly reviews of certain aspects of the models and two more fundamental reviews (after two and four years).

1.11. These proposals would not enable us to achieve the RIIO objectives. Our view is that they are focused too much on the short term (frequent reviews) and that this is likely to result in a focus on regulatory process rather than outcomes. In addition, the significant changes that are occurring to the electricity market make it challenging to derive robust cost targets for the SO. This is evident in the fact that the SO cost forecasts have been less accurate in recent years – NGET has consistently hit either the cap or the floor. The Overview section of our Initial Proposals set this out in more detail.

1.12. We recognised the problems in setting appropriate targets in 2010 and have been working with NGET to develop more reliable models. However, despite using new “bottom-up” models of balancing costs to derive target costs since 2011, it has become clear that the accuracy of the models in forecasting costs remains a major issue. NGET’s proposals for incentives from 2013 were based on models that are significantly more complex than the current models but still seem unlikely to be robust to changes in the market. Consequently, continuing to set long term financial incentives based on these models could leave consumers exposed to windfall gains or losses. More recently, the Authority accepted changes to the models and the methodologies underpinning them proposed by NGET as significant and serious flaws in both could have had the potential for a significant windfall gain to NGET.²

¹ ‘Software’ solutions broadly refer to behavioural changes and ‘innovations’ in contracting, modifications to market arrangements etc. ‘Hardware’ solutions on the other hand refer to investments in technology, networks and a focus on technical investments based on historical experiences.

² See Ofgem direction letter issued on 14 September 2012 to amend the Modelling Methodology

1.13. Therefore, in our Initial Proposals we proposed to move from financial incentives based on detailed modelling of balancing costs to a broader incentive approach except where outputs (renewable forecasts) or costs (possibly black start costs) can be clearly identified and measured. This is designed to protect consumers from inefficient or uneconomic costs and encourage more innovative behaviour while recognising the increasing challenges that are likely to be associated with balancing the system.

1.14. In particular, we proposed to monitor closely the level of balancing costs and work to increase the transparency of these costs to stakeholders. In addition, we intend to clarify and extend the current obligations relating to acting in an economic, efficient manner and proposed introducing a licence condition that will enable us to disallow the pass through of balancing costs to market participants if the costs cannot be justified.

1.15. At the same time, we wish to encourage NGET to shift its focus from short term minor improvements to “making a difference” in the way it operates the system and thereby ensure that it plays a full role in delivering a sustainable decarbonised electricity market. Consequently, we proposed that NGET could be able to retain a proportion of any measurable net benefit to consumers resulting from the actions it takes that go well beyond “business as usual”.

1.16. We are also now proposing to introduce a new financial incentive on the SO in respect of the accuracy of its forecasts of the Balancing Services Use of System (BSUoS)³ charges and a licence obligation to continue developing its balancing services cost models. The BSUoS charge forecast accuracy incentive proposal should incentivise NGET to continue the development of its models, whilst minimizing the risk that inaccurate modelling could generate windfall gains or losses. Such an incentive, in conjunction with a licence obligation to continue the development of enduring models and long term methodologies to use as a benchmark of costs, might, therefore, make it more likely that ex ante financial cost incentives could be re-introduced in due course if the developments undertaken by NGET led to more robust models. These new proposals have been developed in response to concerns raised by market participants on the need for a longer term model.

1.17. It is these proposals that are the subject of this consultation.

Amendments under the Balancing Services Incentive Scheme 2011-13, at <http://www.ofgem.gov.uk/Markets/WhlMkts/EffSystemOps/SystOpIncent/Documents1/NGET%20BSIS%202011-13%20Methodology%20Amendment%20Direction%20Letter.pdf>

³ BSUoS charges are paid by suppliers and generators based on their energy taken from or supplied to the National Grid in each half-hour Settlement Period. These charges are paid to NGET to cover the costs of keeping the system in electrical balance and maintaining the quality and security of supply.

Workshop and responses

1.18. We received six formal responses to the consultation on our Initial Proposals as well as feedback at our workshop held on September 14, 2012.

1.19. Most respondents agreed with our assessment that the models used to set the incentive scheme target are not currently fit for purpose. They were also generally in favour of the proposed discretionary reward scheme. However, they varied in the extent to which they supported our proposals on disallowing costs.

1.20. Two of the respondents were broadly in favour of a licence change to enable Ofgem to disallow inefficient costs, noting that it would shift NGET's focus to the longer term challenges of maintaining and reinforcing the network and that it could also be required to protect consumers against the pass through of inefficient costs. Three respondents were in favour of retaining some form of short term financial incentive, in part because they felt that it would be extremely difficult for Ofgem (or market participants) to identify inefficient costs. One respondent was also concerned about information asymmetries and hence did not believe that it would be prudent to rely only on monitoring costs with a backstop of disallowing costs. Finally, several respondents commented that a claw-back mechanism might make NGET more risk averse to trying innovative solutions for fear that any costs incurred could be open to challenge.

1.21. Despite the concerns raised, even those respondents who urged caution believed a change in licence to disallow costs may be necessary in light of the challenges of developing a robust model-driven scheme. However, if we progressed the proposal, they wanted Ofgem to provide greater detail and clarity on the operational and practical issues that need to be resolved before introduction, particularly on timing and the process for rolling out the scheme as well as on benchmarks for reviewing NGET's costs in the absence of any comparators in terms of costs and outputs. They also highlighted the importance of suitable governance arrangements and supported the continued development of the models in the interim, either through the continuation of the current scheme for another year to allow for further improvements through experience or in the form of a new scheme to incentivise the SO to improve the accuracy of its modelling.

1.22. On the discretionary reward, stakeholders broadly support the principle. One respondent observed that a reward scheme for positive innovations could counteract the potential risk aversion for NGET, depending on the strength of the incentive. However, several respondents commented on the importance of robust governance arrangements and were concerned about how the reward would be paid for by consumers (as an ex post adjustment) and its impact on the stability of BSUoS charges. They also urged clarity, transparency and a clear definition of what could constitute going beyond business as usual.

1.23. NGET's submission reflects similar sentiments. Its main concern is its perception that the proposal for disallowing costs exposes it to an uncapped downside. It believes that the scheme will result in a diminished real time focus on costs and would make the SO more risk averse in contracting and balancing decisions. It also fears the risk of a subjective and inaccurate assessment of what is



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considered inefficient by Ofgem and recommends that the governance and process around disallowance needs to be well identified to prevent the use of hindsight in making these decisions.

1.24. We have carefully considered the responses submitted and believe that the proposals for the discretionary reward (efficiency in system operations reward scheme) and disallowance of costs detailed in this consultation document reflect the concerns raised by stakeholders. In addition, our proposals for an incentive on the accuracy of BSUoS charge forecasts and a licence obligation to progress model developments is a response to stakeholder comments and may put us in a position to consider a reintroduction of financial cost incentives in due course should we consider it appropriate to do so.

Contents of this document

1.25. The rest of this document covers each of our major proposals, in order:

- Disallowing costs;
- Efficiency in system operations reward scheme; and
- Model development and forecast accuracy incentive scheme.

2. Disallowing costs

This section provides more detail in respect of our proposal to introduce a licence condition to allow us to disallow the pass through of costs incurred by the SO that we consider inefficient or uneconomic.

Question 1: Do you agree with the way in which we propose to monitor the SO's costs?

Question 2: Do the various steps of the process we propose to follow to disallow costs seem appropriate?

Question 3: Is the proposed threshold level, and the way in which it will be applied, proportionate?

Question 4: Please provide your views on whether it would be appropriate to introduce a limit on the maximum level of costs that can be disallowed?

Question 5: Do you agree with our examples of uneconomic or inefficient costs? If not, why not?

Question 6: Should any disallowed costs be clawed back retrospectively or prospectively?

2.1. In the Initial Proposals, we indicated that instead of having a balancing costs financial incentive, we proposed to rely on monitoring NGET's SO costs and reducing the SO's allowed pass through of costs if we find material evidence that the costs are not economic or efficient. To that end, we proposed introducing a new licence condition, which would enable us to disallow balancing costs that the Authority deems to be inefficient or uneconomic.

2.2. Stakeholders, including NGET, have asked for more information on how such a licence condition might operate in practice. In this chapter, we provide further details on the policy and process we are proposing. Annex 3 provides a draft of the licence condition that we are proposing should be used to give effect to this policy.

2.3. NGET is already obliged under Standard Licence Condition C16 (SLC C16) to "co-ordinate and direct the flow of electricity onto and over the national electricity transmission system in an efficient, economic and co-ordinated manner". However, our intention in introducing this new licence condition is to enable us to take action to protect consumers before matters have reached a point where it would be appropriate to take enforcement action for a breach of this condition. It is, therefore, a proportionate response to situations where consumers have faced unduly high costs but not on such a scale or over timescales that would warrant enforcement action. Accordingly, our proposals are consistent with the regulatory principles laid out in Section 3A (5A) of the Electricity Act. We also note that a fine for a licence breach would not lead to consumers being repaid for inefficiently or uneconomically incurred costs.

2.4. Whilst the concept of disallowing costs is new to the SO function, we have previously incorporated similar provisions in the licences of the electricity TO (Special Licence Condition D9) and the gas distribution companies as part of gas distribution price control from April 2007.⁴ In addition, as part of TPCR4, the Authority disallowed £19m of investment costs that National Grid Gas (Transco as it then was) had incurred in increasing entry capacity at the St Fergus terminal on the grounds that it was an inefficient investment.⁵

2.5. For the longer term, our preferred approach would be to consider a re-introduction of a financial cost incentive, similar to that currently in place. Until then, our proposal on disallowing costs enables us to ensure that the level of balancing costs remains efficient and economic.

Overview

2.6. Figure 1 outlines the process that we are proposing should be used to review costs and to allow only those that are efficient and economic to be passed through. We will build on the current monitoring of outturn costs that we undertake, to develop thresholds which, if breached, will indicate that there is a cause for concern over the level of balancing costs. The thresholds will be set so that they will only be breached if the level of apparently unjustified costs is sufficient to cause material detriment to consumers.

2.7. If the threshold is breached, we will ask NGET to provide further data and an explanation for why balancing costs have been higher than seems justified. If NGET is able to provide a satisfactory explanation then no further action will be taken. However, if we are not satisfied by the explanation provided by NGET, we will proceed to issue a formal notice of intent to disallow costs.

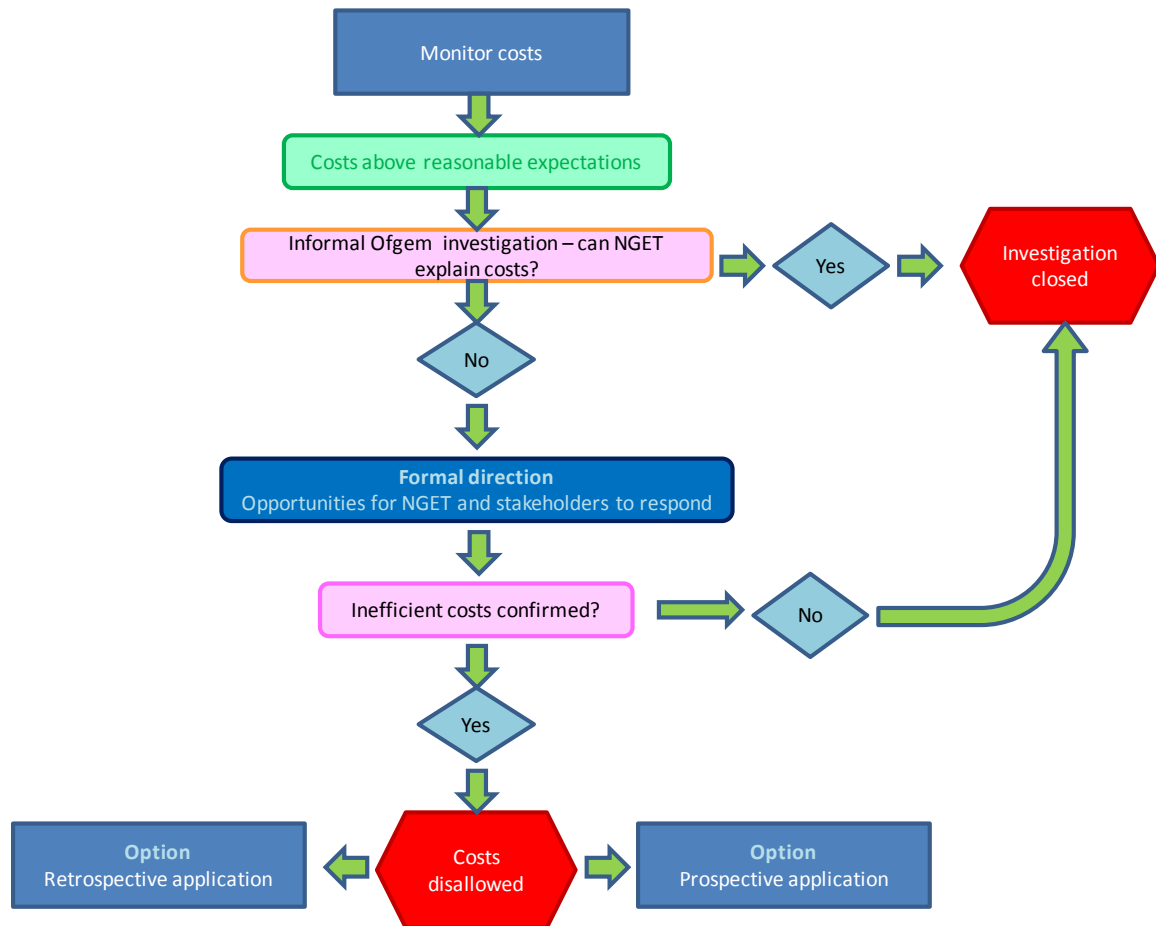
2.8. The notice will contain details of our initial findings and recommendations and will be published. We would then undertake additional analysis to confirm our initial findings (if necessary) and would be open for representations from NGET and market participants. Having considered these representations, our recommendations will be presented to the Authority, who will decide whether any costs have been inefficiently incurred and the level of any inefficient costs. These costs will then be deducted from the costs that NGET is allowed to recover via BSUoS charges.

⁴ See, for example, "Gas Distribution Price Control Review, Second Consultation Document", July 2006, Ref 123a/06 (http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?file=14670-GDPCR_2CD_FINAL19July.pdf&refer=Networks/GasDistr/GDPCR7-13)

⁵ Ofgem concluded that NGG had not provided adequate justification for the £73m of expenditure incurred to increase the entry capacity at St Fergus in the light of indications of demand for capacity arising from the long term entry capacity auctions. Specifically, NGG did not review its initial investment decision in light of important new information at the time on the location of large new sources of gas supply. This meant that NGG NTS ignored key information at the time and made questionable decisions in the context of the entry capacity regime which had recently been introduced.

2.9. Each of the steps in the process is described in more detail below.

Figure 1: Proposed process for disallowing costs



Monitoring cost outcomes

2.10. We already monitor balancing cost outcomes, using data broken down by balancing service on a weekly and monthly basis provided to us by NGET.⁶ Our intention is to develop our capabilities in this area further so that we will be in a position to identify costs that appear inexplicably high. We expect to use a variety of different techniques to monitor costs since it will be important to distinguish between costs that are high for justifiable reasons e.g. high fuel costs, seasonal variations etc., and those which do not appear justified.

2.11. At the same time, we will be looking to NGET to provide evidence, as part of its monthly reporting, as to the steps that it has undertaken to ensure that it is acting in an economic and efficient manner. One example of this additional material

⁶ Much of these data, albeit at a somewhat more aggregated level, are also available from NGET's website at <http://www.nationalgrid.com/uk/Electricity/Balancing/Summary/>



might be the analysis it had undertaken to gain board approval for new types of contracts or documentation regarding the process by which NGET had procured services.⁷

2.12. In all our analysis, we will only take into account information that the SO could reasonably have had access to at the time that it took the decision to act (or not to act) that led to the costs we are investigating. It would not be appropriate to use hindsight in determining whether costs are justified or not. At the same time, we expect NGET to have considered a plausible range of scenarios in reaching its decisions with regard to its actions.⁸

2.13. We believe that NGET's suite of balancing cost models could potentially provide a useful means of benchmarking costs, particularly if NGET continues to develop them appropriately. Using them in this way, where they will form one input to a broader assessment of costs, is very different to using them mechanistically to set a BSIS target. When using a model to set a target, any inaccuracies lead directly to windfall gains or losses. There is no such direct connection when a model result is used as one piece of evidence as to whether costs have been inefficiently or uneconomically incurred.

2.14. Moreover, such an approach will encourage NGET to continue developing the models, which, along with our proposals to introduce a financial incentive regarding the accuracy of its BSUoS charge forecasts and a licence obligation on model development, (see Chapter 4), could allow us to consider whether to reintroduce financial incentives in the future. To do this, we would need to be convinced of the reliability and robustness of the models. The proposed licence obligation will mandate NGET to set out a process and timetable to come forward with new models that have been independently validated and tested over a period of time.⁹

2.15. We intend to set the threshold that must be breached for an investigation to be instigated at 0.5% of the previous year's balancing costs. Based on balancing costs in 2011/12, this would currently equate to around £5 million. In other words, it is only when balancing costs in any month are above the level that appears reasonable by more than the threshold value, or seem likely over a two month period to exceed the reasonable level of costs by this amount¹⁰, that the threshold will be activated.

⁷ The intention of our proposal is not to impose onerous data provision requirements on NGET. However, we expect NGET to keep an appropriate level of information regarding its balancing actions and a failure to record appropriate information could be a factor that we consider in any review of the efficiency of balancing actions and costs.

⁸ This is more likely to apply to long term decisions as opposed to decisions made in the control room in real-time.

⁹ See Chapter 4 for further details.

¹⁰ For example, if NGET has entered into contracts whose availability fees we deem to be uneconomic or inefficient. In such circumstances, the extent to which the overall balancing costs appear unreasonable in one month might be less than £5 million but it would be clear, because of the duration of the contracts, that the total impact of the contracts would result in costs more than £5 million higher than we deemed reasonable.

2.16. It is important to emphasize that we will be looking at balancing costs in the round. This means that NGET's contracting strategies are likely to be an area of particular interest – by the time the Balancing Mechanism is reached, the options available to NGET are constrained to the bids and offers submitted.¹¹ We would therefore expect an efficient SO to consider carefully its contracting options and to enter into contracts which are likely (given the information available at the time of contracting) to result into cost savings as opposed to waiting to resolve the issue in question in the Balancing Mechanism. An inefficient or uneconomic contracting strategy may result in NGET either having to accept very expensive actions in the Balancing Mechanism or being committed to paying contract fees that are unreasonably high.

2.17. We recognise that there will be instances where the SO has limited options and is forced to accept expensive prices either in contracts or in the Balancing Mechanism. Whilst we would not consider such costs to be inefficient or uneconomic¹², we would expect NGET to alert us to such behaviour where it considers the prices offered are excessive, so that we can consider whether to investigate under the Transmission Constraint Licence Condition (TCLC).¹³

2.18. We have also considered whether it would be appropriate for us to review any tenders for long term balancing contracts that NGET might launch. Whilst this would enable us to veto the acceptance of any contracts that we did not consider were economic or efficient, thereby providing NGET with greater certainty, we have concluded that such an approach would be unduly intrusive, highly resource intensive and likely to slow down the contracting process. For these reasons, we propose to focus on monitoring the cost outcomes of tenders, along with other cost outcomes.¹⁴

Examples of inefficient behaviour

2.19. The examples below provide some insights into the types of costs that we would be likely to deem inefficient or uneconomic. However, this is by no means intended to be an exhaustive list.

2.20. **Example 1:** Assuming a zone with significant wind deployment: we would expect the SO to review whether the connected wind farms were participating in the Balancing Mechanism. If they were, we would expect the SO to review their bidding strategy so as to avoid the possibility of having to accept excessive prices. We would also expect an efficient SO to assess the merits of signing contracts with each large

¹¹ This does not preclude the possibility that the SO's Balancing Mechanism actions could be uneconomic or inefficient but it makes it less likely.

¹² Unless it is clear that they could have been circumvented by earlier actions by NGET.

¹³ This seeks to prevent electricity generators from obtaining excessive benefit at the expense of consumers during periods of transmission constraint.

¹⁴ Although we do not favour an approach under which we would review any tenders for long term balancing contracts that NGET might launch, it is worth pointing out that the current draft of the European Framework Guidelines on Electricity Balancing obliges the SO to procure as many reserves as possible in the short term. Any long term procurement would need to be 'thoroughly justified' to their National Regulatory Authority and related justification information shall be published.



wind farm rather than risk constraining wind off at high cost. Moreover, while a small number of instances of having to constrain wind off at high costs would be tolerable, a series of such incidences in the same zone could lead us to question the efficiency of the SO approach to managing the costs of wind.¹⁵

2.21. **Example 2:** If an interconnector that was primarily used to export surplus wind failed for some reason, we would expect that an efficient SO would contact the asset owner to find out how long it would take to come back on and to review whether to contract for the 'off period' to manage constraint costs rather than wait to manage the costs in the Balancing Mechanism.

2.22. **Example 3:** If there was a large generator behind a constraint boundary, we would expect the SO to develop a view on its likely bidding strategy based on an assessment of its technical parameters and commercial contracts (where known). We would also expect it to make a decision, based on that information, on whether to contract for constraint management or use the Balancing Mechanism to manage constraints costs.

2.23. **Example 4:** If a particular part of the transmission network had a planned outage in order to facilitate development of reinforcements, we would expect an efficient SO to assess the likely resulting constraints costs. We would expect the SO to weigh the costs of managing the situation in the Balancing Mechanism against contracting ahead of the outage to manage the constraints and also to assess whether it would be beneficial to contract with the Transmission Owner (TO), to finish the project faster.

2.24. **Example 5:** If an industry code amendment affecting the procurement of a specific energy ancillary service such as frequency response was approved, we would expect an efficient SO to keep track of its impact on balancing costs. If the amendment led to a significant increase in the short term, we would expect the SO to explore all possible ways of mitigating the risk of higher costs including where possible, proposing and leading (as soon as is practical), a change modification.

Informal inquiry

2.25. Once we are satisfied that the threshold has been breached, we would launch an informal inquiry. This would involve sharing our analysis with NGET and asking it to provide an explanation for the anomalous costs that we had identified. Again, the onus will be on NGET to prove to us that its actions have been economic and efficient.

2.26. For example, we might inquire into why NGET had or had not pursued a particular contracting strategy. In such a case, we would expect to see evidence of the type of assessment that had led to the decision – what factors had been taken into account, what scenarios had been considered etc.

¹⁵ Although the probability that the SO's actions in the control room are uneconomic or inefficient is less likely, this is an instance where we could challenge actions incurred in the Balancing Mechanism.



2.27. If NGET is able to convince us that its costs have been efficient and economic then no further action would be taken.

Formal investigation

If we remained unconvinced that some costs have been efficiently incurred, then NGET will be sent a notice stating that the Authority intends to deem certain costs inefficient and uneconomic. Ofgem would endeavour to issue any such notice as quickly as practical and within four-six months of receiving data that triggered a breach of the threshold. In the notice, we would explain what costs have been deemed inefficient and uneconomic, and the reasons why they have been deemed to be inefficient or uneconomic.

2.28. The notice will be published on Ofgem's website as well as being sent to NGET. However, any commercially confidential information used by Ofgem will be redacted from the published version of the notice.

2.29. The publication of the notice would signal the commencement of a formal investigation. During this period, we would undertake additional analysis to confirm our initial findings. This might, for example, involve expanding the original analysis to include additional data that we would formally request from NGET using our powers under Standard Licence Condition B4.¹⁶ Equally, it might involve stress testing the original analysis to understand the extent to which different views on the plausibility of particular outcomes affected the extent to which actions (or lack of action) were reasonable. NGET and market participants would have 28 days to make representations to Ofgem.

Following close of the notice period we will assess whether and to what extent any of the Balancing Services specified in the notice are inefficient or uneconomic and the representations made by market participants. We would then prepare a final report to Authority for determination and direction specifying the amount of the adjustment to the licensee's total Balancing Services Revenue. The Authority would have three months following the close of the notice period to make a determination or from the date during the notice period when we formally requested additional information.

Governance options

2.30. Stakeholders, both in their responses to the Initial Proposals and at the September Workshop, emphasized the importance that they placed on appropriate governance arrangements being developed for disallowing costs. One option that some stakeholders suggested was that the formal investigation phase of the process should be run under the auspices of one of the industry codes – the Balancing and Settlement Code or the Connection and Use of System Code.

¹⁶ Standard Licence Condition B4: Provision of information to the Authority – mandates the licensee to furnish to the Authority, such information as may reasonably be required or necessary to perform the functions conferred under the various UK and European legislation.

2.31. We do not consider that it would be appropriate to delegate the investigation process in this way. The investigation may involve reviewing bidding and contracting strategies of market participants and some of this data may be confidential. We are also concerned that such an approach would lead to conflicts of interest in carrying out an assessment – whilst all market participants pay for balancing services through their BSUoS charges, some also benefit by being paid for providing balancing services.¹⁷ Finally, the proposal to disallow costs is an extension of the SLC C16 obligation on the SO to act in an economic and efficient manner and, as such, is a matter for Ofgem.

2.32. For these reasons, we are proposing that the responsibility for the formal investigation should lie with Ofgem, as it does for other licence conditions under which costs can be disallowed.

2.33. Nonetheless, we fully agree on the importance of wide stakeholder involvement in the formal investigation process. For this reason, as described above, we would publish both the notice to disallow costs (to inform stakeholders of our intent) and a consultation document for comments from stakeholders.

Report to Authority

2.34. At the end of the formal investigation period we would prepare a report for the Authority which would:

- Explain the grounds on which the investigation had been launched;
- Describe the analysis that had been undertaken and the conclusions that had been drawn;
- Summarize the views of stakeholders, including NGET; and
- Provide a recommendation as to what costs, if any, should be disallowed.

2.35. In determining the level of costs to be disallowed, we would seek only to claw back the difference between the level of expenditure that we considered efficient and economic and the actual level of expenditure.¹⁸ Note that if we disallowed costs associated with contracts that NGET had signed, this should not render such

¹⁷ If CUSC modification CMP201 (to remove BSUoS charges from generators), which is currently under consideration, is approved the potential for conflicts of interest will change but not disappear.

¹⁸ We recognise that in some instances it would be possible to identify that an action had led to inefficient costs, but not be able to quantify the additional inefficient costs. This is likely for some contracts, where identifying that an action is inefficient would be easier than identifying the counterfactual and therefore the overall level of 'incremental' inefficient costs. This could either be because the volume or price was inefficient but not the decision to contract per se. In such cases, if we determined that the contract was inefficient in its entirety then it is likely that we would recommend that all the costs of the contract be disallowed, even if we consider that some other form of contract might have been efficient. This is because, in the absence of concrete details of an alternative contract, it is impossible to calculate what an efficient level of contract costs would have been.



contracts void (i.e. we would expect any such contractual obligations to be honoured).

2.36. Consistent uneconomic and inefficient behaviours would be subject to enforcement under SLC C16 which requires the SO to “co-ordinate and direct the flow of electricity onto and over the national electricity transmission system in an efficient, economic and co-ordinated manner”. Since the purpose of these proposals is to deal with inefficient or uneconomic costs that fall below the threshold that would be appropriate for enforcement action under SLC C16, we would welcome views on whether it would be appropriate to limit the maximum level of disallowed costs. For example the maximum level of disallowance of costs in any given year could be limited to 10% of the balancing costs from the previous year. Based on 2011/12 balancing costs, this would equate to approximately £90 million per year. We note that inefficient TO costs can also be disallowed under the terms of its licence and that there is no limit to the maximum disallowance in the TO case. We would welcome views on justifications to limit the disallowance in the case of the SO.

Recovering costs

2.37. Once the Authority has determined which costs should be disallowed, then the final step in the process will be to recover those costs from the SO. We are considering two possible options:

- **Option 1: Retrospective recovery:** The disallowed costs would be clawed back in the year they were incurred. This would involve an ex post adjustment to the balancing costs made by market participants.
- **Option 2: Prospective recovery.** The disallowed costs would be deducted from the costs that NGET is allowed to recover in the year following the Authority decision.



2.38. The advantages and disadvantages of the two options are summarized in the table below.

Recovery of disallowed costs	
Retrospective	Prospective
<ul style="list-style-type: none">• Ensures that cost reductions are made to those participants affected by the inefficient costs• More complex to implement• Stakeholders generally more concerned about the predictability of costs than the actual amount	<ul style="list-style-type: none">• Simpler to implement• Provides more certainty to stakeholders• Does not necessarily reduce the costs of the participants adversely affected by the inefficient costs

2.39. Whilst the advantages and disadvantages of the two options are relatively finely balanced, we are minded to implement the prospective recovery option as, not only is it simpler to implement and more certain, but stakeholders have also expressed a preference for this option.

3. Efficiency in system operations reward scheme

This section provides more details in respect of our proposal to introduce a scheme to reward the SO if it goes beyond “business as usual” in developing new ways of balancing the system that lead to net benefits for consumers.

Question 7: Do you agree with the proposed process for granting rewards?

Question 8: Is it appropriate to include an “ex ante” option for granting rewards, when significant up-front costs for the SO are involved?

Question 9: How should the net benefit to consumers be measured?

Question 10: Have you any views on the composition of the independent Expert Panel?

3.1. In the Initial Proposals, we emphasized the importance of the SO’s focus shifting from modelling details to actually “making a difference” in the way in which it operates the system. We considered that the introduction of an efficiency in system operations reward scheme would be an appropriate way of achieving this aim, since it should encourage the SO to think about the longer term and innovative ways of balancing the system.

Overview

3.2. Following discussions with NGET and stakeholders, and taking into account the introduction of an Innovation Stimulus¹⁹ under RIIO-T1, we are now proposing, in some circumstances, to allow the SO to recover at least some of the upfront costs associated with projects that meet the reward scheme criteria before they begin delivering benefits to consumers (the **ex ante** option). This is an alternative route to the approach outlined in the Initial Proposals, whereby no payments would be made until a project was delivering benefits to consumers (the **ex post** option).

3.3. As described in more detail below, including an ex ante option should encourage NGET, as SO, to consider initiatives that might require some initial expenditure, which it might otherwise be reluctant to explore because of the risks that it would not be allowed to recover any of the costs associated with the initiative.

3.4. Under both the ex ante and ex post options, it would be for NGET to make the case for receiving a reward. This would include explaining why the initiative went

¹⁹ The Innovation Stimulus is a package of three measures intended to incentivise network companies to innovate to address the challenges associated with the transition to a sustainable, low carbon energy sector. The three elements of the package are a Network Innovation Allowance (NIA), the Network Innovation Competition (NIC) and the Innovation Roll-out Mechanism (IRM). Further information can be found at http://www.ofgem.gov.uk/Networks/nic/Documents1/Consultation%20letter%20on%20gov%20docs_Published.pdf

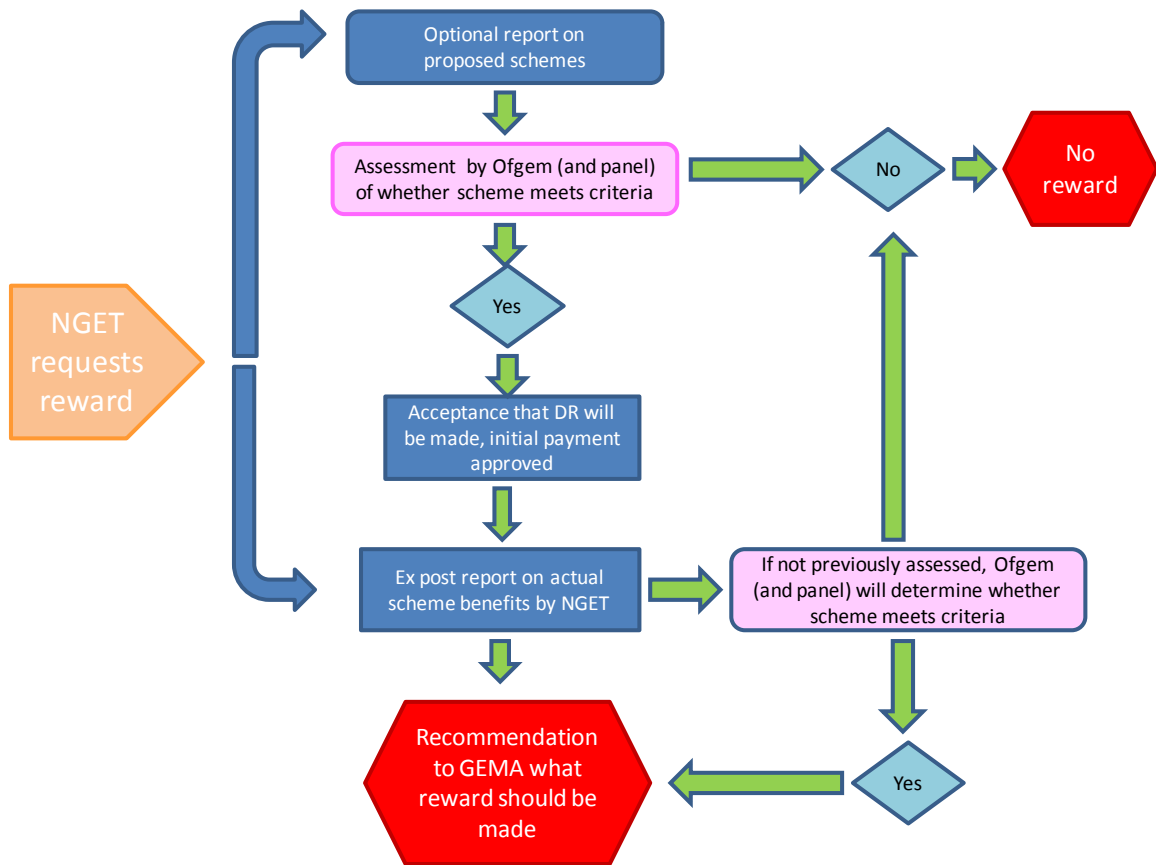
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beyond “business as usual” and demonstrating that it had (or could reasonably be expected to) deliver net benefits for consumers.

3.5. NGET’s submission would be subject to assessment by Ofgem and stakeholders (through an independent Expert Panel) and a report on their findings would be sent to the Authority, who would have the final decision on whether a reward should be made or not.

3.6. Further details of the process are discussed below and a draft of the proposed licence condition is included in Annex 3.

Figure 2: Proposed processes for approving the efficiency in system operations reward



Defining “business as usual”

3.7. An important part of the reward process is for NGET to prove that it has gone beyond “business as usual”. In the Initial Proposals, we provided some examples of initiatives that we considered would meet this criterion:

- Innovation in contracting approaches or market arrangements including, for example, new types of contracts or widening the types of market participants who can provide a service e.g. enabling new forms of demand side participation;
- Entering into arrangements with distribution network companies that enable the SO to access lower cost balancing options (for example by using distribution assets to provide balancing services);
- Reforming the regulatory and/or market arrangements and business practices so that the same level of security can be achieved at lower cost, for example taking a more probabilistic approach to system security; and
- Developing innovative approaches to balancing the system in the presence of increased levels of intermittent generation.

3.8. However, it is equally important for it to be clear what we would not consider as beyond “business as usual” (BAU). It is clear that taking actions in the Balancing Mechanism would constitute BAU. We are also of the view that contracts for balancing services that are of the same form as the current contracts e.g. Short Term Operating Reserve (STOR), black start, fast reserve, inter-trip and emergency assistance contracts with other SOs, would also form part of BAU. However, more efficient or new ways of procuring these services that are a material departure from current arrangements; widening the types of market participants, who can provide a service e.g. enabling new forms of demand side participation, would likely be considered beyond BAU.

Assessment criteria

3.9. As laid out in the Initial Proposals, the three key criteria that a project would need to meet in order to be eligible for a reward are:

- There should be little or no overlap with projects that are being funded under other schemes, including those associated with the Innovation Stimulus under RIIO-T1²⁰;

²⁰ Where a project or a pilot version of the project was previously funded by the innovation stimulus, this would not necessarily disqualify it from consideration. However we would expect the SO to report this at the time of application as it would be taken into consideration when determining the level of any subsequent efficiency in system operation reward it may request.

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- The actions represent a material departure from “business as usual”. By this we mean that they deliver innovative solutions that are relevant to the challenges faced by the SO; and
- The actions will provide enduring benefits to consumers. In this way both existing and future customers will benefit from the project.

3.10. To the extent that it is necessary to choose between projects when making an award, due to the cap on payments, our proposal is that the reward would be made in respect of those projects which seem likely (or have proved) to provide the best value for money for network consumers.

Ex ante option

3.11. Under the ex ante option, the SO would be able to come to Ofgem in advance of taking actions that it believes go beyond BAU to ask for a reward. NGET might choose to do so if its proposal involved capital expenditure and it wanted reassurance that these costs would be recoverable (at least to some extent). For example, there could be occasions when, from an SO perspective, it would be efficient to install a somewhat larger transformer than could be justified from a TO perspective, because a larger transformer would reduce constraint costs significantly. NGET might be willing to pay the difference in costs between the two sizes of transformer but would only wish to do so if it was clear that this initiative would receive funding.

3.12. If a project were assessed as meeting the criteria for a reward, then the SO would receive an up-front payment, related to the costs of implementing the project. Once the project had been implemented, it would then be eligible to receive the remainder of the efficiency in system operation reward associated with the project, subject to the normal ex post assessment process described below.

3.13. The ex ante approach is primarily intended for projects that involve significant upfront operating expenditure or capital expenditure. If NGET wished to make use of the ex ante approach in other circumstances, it would have to justify why this approach was appropriate.

Assessment process

3.14. We are proposing that once a year NGET would publish a report containing details of the projects that it wanted considered for a reward under both the ex ante and ex post options.

3.15. For projects for which it was starting the ex ante route, NGET would need to outline what it was proposing to do, why it thought it would meet the relevant criteria and an estimate of the net benefits to consumers that it would provide. Once the project had been implemented, the SO would then need to provide a follow-up report demonstrating that it had delivered the project on-time and to cost and that it had resulted, and would continue to result, in benefits to consumers commensurate with those that it had estimated at the ex ante stage.

3.16. Under the ex post option, NGET would also need to explain why the projects had met the relevant criteria as well as explaining what the project was and what benefits it had delivered thus far and what benefits to consumers it was expected to continue providing.

3.17. As under the Network Innovation Competition²¹, Ofgem would review the report and carry out an initial screening of the projects it contained against the relevant criteria. Those projects that passed the initial screening would be subject to a fuller assessment by an independent Expert Panel, who would also take into account whether the projects are relevant to the current balancing requirements and demonstrate a robust methodology and readiness for implementation.

3.18. The independent Expert Panel would provide its recommendations to the Authority and, before the start of the following financial year; a decision would be reached on whether the scheme would qualify for a reward. Additional details on the assessment process and the Expert Panel will be set out in the Efficiency in system operations Reward (ESOR) Scheme Guidelines which will be published in due course.

Size of the reward

3.19. As we discussed in the Initial Proposals, the SO would be able to receive a reward of 25% of the net benefit to consumers of any project, subject to an overall cap of £25 million per year.

3.20. Since the reward is intended to reward projects that provide enduring benefits to consumers, one issue that arises is how the enduring benefits are calculated. Our proposal is that the SO will have to demonstrate the actual benefits that have accrued over the course of a year and to estimate what those benefits are likely to be over the course of the following seven years. It will be on this basis that the size of the reward will be determined.

3.21. An alternative approach would be for the SO to have to provide evidence of the actual benefits provided by a scheme each year for eight years. The difficulty with this approach is that it may become increasingly difficult to determine a robust counterfactual (what the costs to consumers would have been without the project) as other changes to the balancing arrangements are implemented. It is for this reason that we are proposing to rely on one year's data on actual benefits and seven years estimated benefits to determine the reward.

²¹ This is an annual competition for funding which is intended to pay for development or demonstration projects that accelerate the development of a low carbon energy sector and/or deliver wider environmental benefits, whilst having the potential to deliver net financial benefits to consumers. Further information on the NIC can be found at <http://www.ofgem.gov.uk/Networks/nic/Pages/nic.aspx>

Payment of reward

3.22. Based on the assessment process outlined above, it will only be by the start of the third year that a project starts generating benefits to consumers that the payment of the reward will start. This is because we will require data on one year of actual benefits before the assessment begins in the second year. Since stakeholders have strongly expressed their dislike for any retrospective adjustment to charges, this means that payments will begin in the third year of a project. How the reward will be paid will depend to some extent on our decision on how the size of the award is calculated. Two possible options are discussed in Annex 3.

Interaction with other reward or incentive schemes

3.23. We are keen to ensure that the efficiency in system operations reward scheme complements other schemes. The two schemes that we have considered in this consultation are the Network Innovation Allowance (NIA) and the Network Innovation Competition (NIC).

3.24. The NIC and NIA are two components of the Innovation Stimulus, introduced under the new RIIO price control framework to provide funding for network companies to innovate. The benefits of innovation could include reduced network costs or improved delivery of a transmission licensee's outputs.

3.25. The NIC is an annual competition to fund large scale innovation projects with low carbon and / or environmental benefits but an unproven business case. Transmission licensees, including the SO, can submit bids for funding and they are encouraged to collaborate with a range of third parties on the projects and leverage additional external funding where possible. It is designed to encourage projects where the innovation risk warrants a limited development or demonstration project. It is expected that in some cases such projects would be replicated and rolled out into business as usual. We expect the learning gained through NIC projects to be disseminated to other network licensees in order that customers gain a significant return on their funding through the broad rollout of successful projects.

3.26. The NIA is a set allowance (between 0.5 and 1% of allowed revenues) that each transmission licensee will receive as part of its price control settlement to utilise on a use it or lose it basis on innovative research, development and demonstration projects²². Transmission licensees (including the SO) will self certify whether projects are eligible for funding under the NIA and publish a registration pro-forma setting out the details of the project before it commences.

3.27. Within the price control period, it may be that a project funded under the NIC or NIA, proves that an innovative technique or practice can lower costs or help the transmission licensee deliver its outputs more efficiently. In this case the TO

²² Up to a maximum of 90% of the project costs can be recovered through the NIA.



efficiency incentive²³ provides a strong incentive for transmission licensees to roll out these projects into business as usual.

3.28. We are of the view that the purpose of the efficiency in system operations reward proposed in this consultation is different from the purpose of the NIC and NIA. The efficiency in system operation reward is similar to the TO efficiency incentive in that it aims to encourage the SO to roll out innovative solutions into business as usual, whereas the aim of the NIC and NIA is to incentivise the transmission licensees to trial innovation solutions prior to rollout into business as usual.

3.29. There is a potential overlap in the scope of projects that could receive funding under the NIC and NIA and the efficiency in system operations reward. It would be up to the SO to consider whether more speculative projects aimed at reducing costs, could be funded, in the first instance, through the NIA or NIC to assess more carefully their potential.

3.30. Where a project or a pilot version of the project was previously funded under the Innovation Stimulus, this would not necessarily disqualify it from consideration under the efficiency in system operation reward. We recognise that there may be a case for additional reward in recognition of the risks of scaling a technology or process. If the SO did choose to rollout an innovative solution that it had previously been awarded funding for through the NIC or NIA, this would be taken into consideration when determining the level of any subsequent efficiency in system operations reward it may request to avoid 'double dipping'.

²³ The TO efficiency incentive allows a licensee to share the benefits of any reduction in spend with consumers.

4. Model development and forecast accuracy incentive scheme

This section provides more details in respect of our proposal to introduce a financial incentive on the accuracy of the BSUoS charge forecasts produced by the SO. It also covers our proposal to introduce a licence condition requiring the SO to continue developing its balancing costs models.

Question 11: Do you agree with our proposal to introduce a financial incentive on the accuracy of the SO's forecasts of BSUoS charges produced by the SO?

Question 12: To what forecasting time period should the incentive apply? (We have proposed the incentive should apply to a year-ahead forecast)

Question 13: Do you agree with the proposed parameters for the scheme?

Question 14: Do you have a preference for the timing of the submission of the forecast to the Authority? (We have proposed 14 days before commencement of the scheme year).

Question 15: Is it appropriate to require NGET to continue developing its models?

4.1. We are proposing to introduce a financial incentive on the SO in respect of the accuracy of its forecast of BSUoS charges and a licence obligation requiring the SO to continue model development. Taken together, these proposals would ensure that NGET continued to develop its models, whilst minimizing the risk that inaccurate modelling could generate windfall gains or losses. They might, therefore, allow us to consider a re-introduction of a financial incentive on balancing costs if the developments undertaken by NGET led to more robust models.

Rationale

4.2. There are a number of reasons why it is important that the SO should remain focused on improving its models:

- Stakeholders have emphasized to us the importance that they attach to NGET producing accurate balancing service charge forecasts, since they use these to determine the prices they offer in their supply contracts.
- The process of disallowing costs and for setting the efficiency in system operations reward may rely, at least to some extent, on better versions of the SO's existing models or new models that provide better estimates of a benchmark of the costs of an efficient SO. We want to ensure that any models that we rely upon are fit for purpose.
- If the accuracy and robustness of NGET's models improve, then we could consider re-introducing a financial incentive on balancing costs.²⁴

²⁴ The SO is currently developing other models for the purposes of modelling the capacity mechanism

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- A robust constraints model could also be an important component of developing SO-TO commercial arrangements (whereby NGET would offer the TOs financial incentives to make changes to their outage plans in ways that reduced balancing costs) as part of the Network Access Policy (NAP) under RIIO.

Proposed incentive scheme

4.3. There are two core aspects of this scheme:

- a BSUoS charge forecast accuracy incentive scheme; and
- a model development licence obligation to ensure that NGET maintains a focus on longer term development of the models and associated methodologies.

4.4. The two aspects of the scheme are intended to deliver different but complementary outcomes – an improvement in the accuracy of BSUoS charge forecasts (forecast incentive), and an improvement in the robustness of the balancing cost models for the longer term scheme (licence obligation).

Forecast accuracy incentive scheme

4.5. We are proposing a financial incentive on NGET's forecast of balancing charges (total external and internal balancing costs levied on market participants). Under this scheme, NGET would be expected to produce a year-ahead forecast of BSUoS charges which would be submitted to the Authority before the commencement of the scheme year, after which it would be published.²⁵ At the end of the year, the percentage deviation of the forecast from outturn charges would be measured and this deviation would determine the incentive payments.

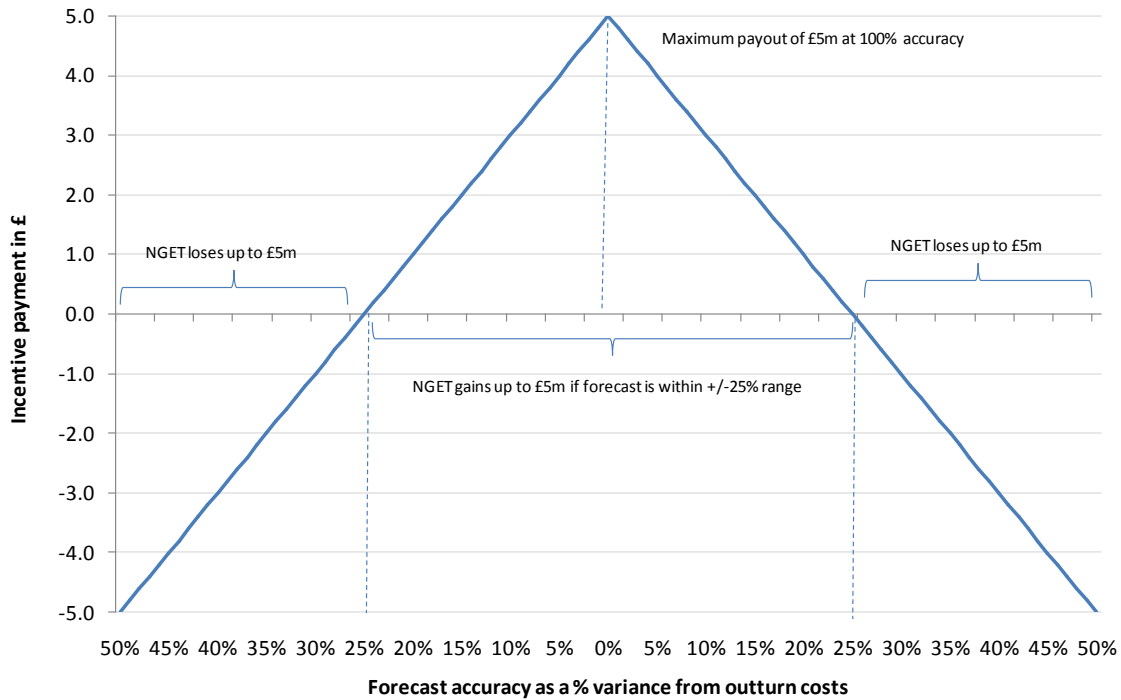
4.6. We propose to, design the scheme as a symmetrical incentive with a maximum gain of £5m for a zero forecast error. As the deviation (whether upward or downward) between the forecast and outturn charges increases, the gain would decrease until at a deviation of +/- 25% there would be no incentive payments. If the accuracy of the forecast is lower than this, then the SO would be penalised up to a maximum of £5m at a deviation of +/-50% between forecast and outturn costs. Figure 3 illustrates the proposed scheme.

under the government's Electricity Market Reform. It is likely that there will be some interactions between the two sets of models and there is scope for cross-learning which would only happen if NGET continues the development of SO models in parallel.

²⁵ NGET is currently not obliged under the CUSC to provide updates and commentary on BSUoS charges; however, it produces forecasts on a quarterly basis and provides additional commentary on charges at the Electricity Operational Forum meetings, which take place six times a year.



Figure 3: Design of the model accuracy incentive scheme



4.7. We propose to combine both the internal and external balancing costs into a single target on BSUoS charges rather than develop separate targets for each cost metric since stakeholders concerns are about the overall cost of balancing services.

4.8. We have proposed the provisional range of acceptable deviation from outturn charges based on the historic performance of NGET's external balancing cost forecasts relative to outturn costs as we have existing data on this, moreover it is the largest and most volatile component of total balancing costs). We are also aware that there have been significant changes to the system that have made forecasting over the last two years much more volatile.

4.9. As can be seen from Figure 4 which outlines the percentage deviation of the forecast target from the outturn costs, the historic accuracy of forecasts for the period 2005/6-2007/8 was reasonable, averaging 9%, but was significantly worse over the subsequent three years, as the electricity system and the market changed.

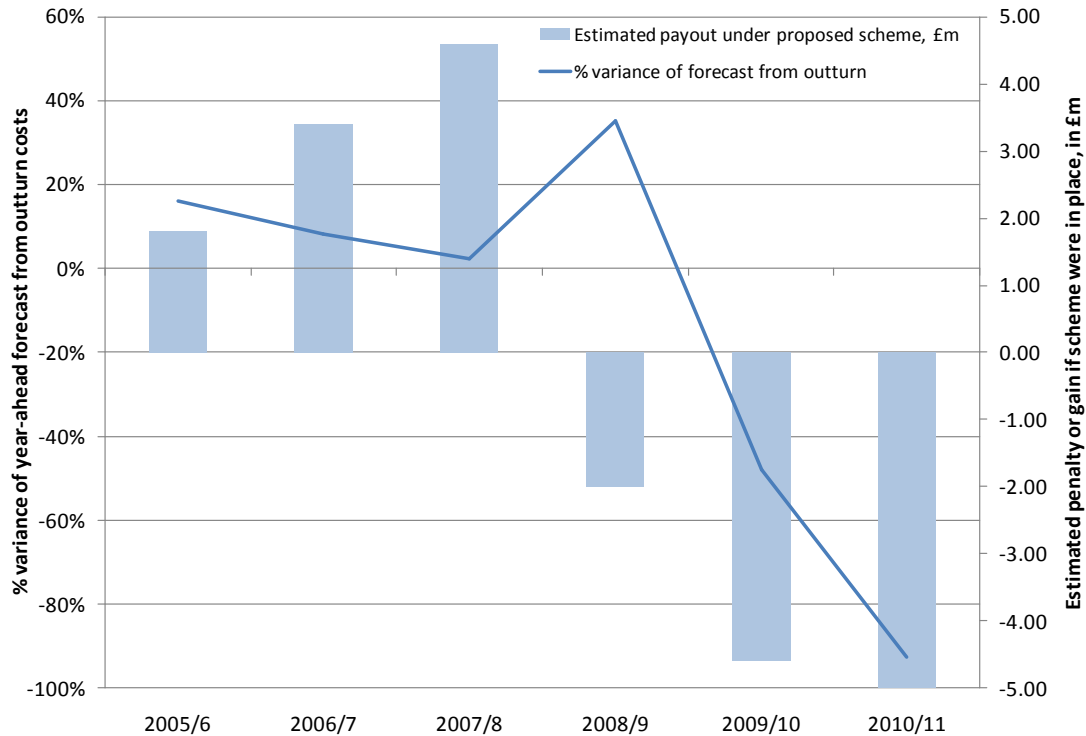
4.10. We have therefore based the zero point of the scheme around an average accuracy rate of 25%, ensuring NGET will earn an incentive payment if its forecasts are closer to outturn charges than this. Although the performance of any year-ahead forecast is likely to be affected by drivers beyond NGET's control such as fuel prices, we have designed the scheme with sufficiently wide tolerances to account for these uncertainties, whilst retaining an emphasis on NGET's forecasting capabilities. This is important as more accurate forecasting in the midst of uncertainty will be required if

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NGET’s models are to be sufficiently accurate and robust to be used to set targets for a cost incentive.²⁶

4.11. Figure 4 also shows the estimated payment or penalty NGET would have received in each year under this scheme if it had been in place since 2005/6. NGET would have received an average payout of £3.3m in the first three years and an average penalty of £3.9m over the subsequent three years.

Figure 4: NGET’s historic model/target accuracy relative to outturn costs and an estimated payout under the proposed scheme



4.12. This scheme is not intended to replace the balancing cost incentive scheme, as it is incentivising the accuracy of forecasts as opposed to the efficiency in operating the system. It is intended to run until the developments undertaken by NGET lead to more robust models that would enable us to consider a long term financial incentive scheme. However, there may be merit in retaining the incentive even after this point, to ensure that market participants continue to receive accurate forecasts.

²⁶ There is a small risk of a perverse incentive, that the SO could change its procurement strategy in order to increase its gains under this incentive. However we believe that this is unlikely as the size of the scheme is small, and the percentage deviation parameters are such that it would be expensive for the SO to do so (especially given the additional risk of potential disallowing of inefficient costs).



Interactions with Connection and Use of System Code Mod CMP208

4.13. Haven Power proposed a Connection and Use of System Code (CUSC) modification (CMP 208) in March this year to increase the frequency with which updates to BSUoS charges for the current and the next financial year are published from a quarterly to a monthly basis.²⁷

4.14. NGET is currently not obliged under the CUSC to provide updates or a commentary on BSUoS charges; however, it produces forecasts on a quarterly basis and provides additional commentary on costs at the Electricity Operational Forum meetings, which take place six times a year. This modification would therefore formalise provision of these forecasts, making it an obligation under the CUSC as well as increasing their frequency.

4.15. We see our proposal as complementing this modification (if approved) as the two proposals are pursuing different objectives. CMP208 would formalise NGET's provision of forecasts and increase their frequency, whilst our proposal is designed to incentivise improvements in the accuracy of those forecasts. We believe both would be beneficial to market participants.

Model development licence obligation

4.16. We are also proposing a new special licence condition placing an obligation on NGET to improve its models and methodologies.²⁸ This will require it to:

- develop suitable energy and constraint models, and methodology statements underpinning the models, with selected milestones and deliverables to be set out in the final proposals; and
- validate and provide independent assessment of the models.

4.17. Under this proposal, NGET will continue to have an incentive to improve the robustness of its constraints model. This should be a GB-wide fundamental model which will enable an unconstrained and constrained schedule to be derived on an internally consistent basis based on the merit order across GB. The improvements being undertaken to the existing model could be the basis of a future model for setting a target for constraint costs. However, we would need it to have been proven to be robust and accurate in order to consider the introduction of a longer term cost incentive. We would also need to be reassured that NGET had addressed other issues of importance to stakeholders such as simplicity and transparency of the models.

²⁷ The CMP208 Workgroup Report published on 18 October 2012 details the proposal, its impacts and costs, associated consultation responses and draft legal text etc, see <http://www.nationalgrid.com/NR/rdonlyres/A68EFF1E-7A75-4E39-A0C5-7292CC66735C/57060/CMP208WorkgroupReportv10.pdf>

²⁸ We have previously enacted special licence conditions to mandate the development of models and methodologies. For example, Special Condition AA5I under the current scheme was written in to require a supplementary review to develop and undertake a scheme of work to facilitate continuing model and methodology development for the purposes of setting an appropriate benchmark for the financial incentive.

4.18. NGET will also be required to conduct a fundamental review of the energy models. Unlike the existing constraint model which is based on market fundamentals, the current suite of energy models is based on statistical analysis of past events. Even in a static market, modelling the energy market in this way would be challenging; but the GB market is changing as the generation mix changes and as market arrangements change, therefore we do not believe that the current set of models can form an enduring platform for the re-introduction of a financial incentive scheme on balancing costs. Accordingly we would like NGET to conduct a review of possible approaches to developing energy models that would be sufficiently robust, to be used to set a cost incentive target. The models subsequently developed should be accurate and robust and should include clearly defined processes for updating the inputs and calculations. In addition, any such enduring models should also consider relationships within different aspects of energy spend, e.g. the allocation of margin actions between technologies and the associated prices.

4.19. Over the proposed obligation period, NGET would be expected to fully test both the constraints and energy models. We would also expect it to commission an independent assessment and validation of the models through a peer review involving both an external consultancy assessment and an industry assessment/academic panel and to fully engage stakeholders in the process as appropriate.

4.20. The final part of the obligation is the development of an enduring set of methodology statements for energy and constraints. This will include:

- A full audit and review of the criteria for assessing which inputs should be considered on an ex ante basis and which on an ex post basis for the longer time frame (taking into account NGET's near and long term ability to control and predict the various inputs). The revised criteria should be as future-proofed as possible.
- Improved methodologies for developing and calculating model inputs.

4.21. We have also set out in the annex, a proposed draft of the new special conditions in NGET's licence required to give effect to these proposals. As part of the licence condition, NGET will be required to submit to Ofgem a scheme of work by 1 May 2013, setting out a process and a timeline for reviewing, developing, testing, and validating enduring models and developing the associated methodology statements and conducting an external peer review of the models. We consider that this approach combined with the forecasting accuracy incentive will ensure that National Grid retains its focus on the models.

5. 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 section heading and which are replicated below.

1.2. Responses should be received by **21 December 2012** and should be sent to soincentive@ofgem.gov.uk for the attention of:

Giuseppina Squicciarini
Head of Regulatory Economics
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. Any questions on this document should, in the first instance, be directed to Giuseppina Squicciarini, Head of Regulatory Economics, Wholesale Markets (Ph: 020 7901 7366), email: giuseppina.squicciarini@ofgem.gov.uk or to David O'Neill, (Ph: 020 7901 3874), email: david.o'neill@ofgem.gov.uk.

SECTION: Two

Question 1: Do you agree with the way in which we propose to monitor the SO's costs?

Question 2: Do the various steps of the process we propose to follow to disallow costs seem appropriate?

Question 3: Is the proposed threshold level, and the way in which it will be applied, proportionate?

Question 4: Please provide your views on whether it would be appropriate to introduce a limit on the maximum level of costs that can be disallowed?

Question 5: Do you agree with our examples of uneconomic or inefficient costs? If not, why not?

Question 6: Should any disallowed costs be clawed back retrospectively or prospectively?

SECTION: Three

Question 7: Do you agree with the proposed process for granting rewards?

Question 8: Is it appropriate to include an "ex ante" option for granting rewards, when significant up-front costs for the SO are involved?

Question 9: How should the net benefit to consumers be measured?

Question 10: Have you any views on the composition of the independent Expert Panel?

SECTION: Four

Question 11: Do you agree with our proposal to introduce a financial incentive on the accuracy of the BSUoS cost forecasts produced by the SO?

Question 12: To what forecasting time period should the incentive apply? (We have proposed the incentive should apply to a year-ahead forecast)

Question 13: Do you agree with the proposed parameters for the scheme?

Question 14: Do you have a preference for the timing of the submission of the forecast to the Authority? (We have proposed 14 days before commencement of the scheme year).

Question 15: Is it appropriate to require NGET to continue developing its models?

Appendix 2 – Stakeholder responses from the initial proposals consultation

This section summarises the responses to the Initial Proposal consultation, published on 27 July 2012.

1.1. We received six formal responses to the consultation on our Initial Proposals as well as informal feedback at our workshop held on September 14, 2012. The full responses are available on our website:

<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=306&refer=Markets/WhIMkts/EffSystemOps/SystOpIncent>

1.2. In general, most respondents agreed with our assessment that the current models used to set the incentive scheme target are not currently fit for purpose. They were also generally in favour of the proposed efficiency in system operations reward scheme. However, they varied in the extent to which they supported our proposals on disallowing costs. Nevertheless, even those who had some concerns provided useful feedback on areas for development that we believe this consultation document captures.

1.3. We have summarised the responses below detailing specific comments on the performance of the models and stakeholders views on our proposals to disallow costs and on the reward scheme.

Performance of the current models

1.4. Most stakeholders broadly agreed with us that the current modelling approach is not working and we should explore an alternative approach, noting that:

- 'The existing incentive model for electricity balancing costs, is complex, opaque and defective'. 'Modelling an appropriate electricity balancing incentive target has become more difficult as a result of the increasing level of constraint costs.'
- 'The current form [of BSIS] does not appear to be working.'
- Despite the recent changes to methodology statements, this respondent is 'still uncertain whether the model is now capable of operating effectively within the changing nature of the market and whether it has any longevity.'
- The respondent 'understands Ofgem's concerns about the accuracy of BSIS modelling, and therefore its usefulness as an incentive for the SO to reduce balancing services costs moving forwards.'

Disallowance of costs

1.5. Stakeholders varied in the extent to which they supported our proposals on disallowing costs. Two respondents were broadly in favour of a licence change noting that they:

- Agree 'with Ofgem's proposed approach for a more widely specified, performance-based incentive.' 'A Licence Condition appears to be required to protect consumers against the pass through of the inefficient costs.'
- 'Believe that Ofgem's proposal to remove short term financial incentives in favour of a broader incentive approach will help ensure that short term financial motives do not take precedence over the longer term benefit of maintaining and reinforcing the network.'

1.6. Around half of respondents saw merit in trying an alternative approach, however they were in favour of retaining some form of short term financial incentive, commenting that:

- 'If there are serious concerns about the ability to forecast these costs going forward, then it would seem sensible that another approach is adopted. However, we would urge caution in abandoning a financial incentive entirely and suggest that the possibility of returning to the form of incentive which existed prior to the current could be explored.'
- 'Our immediate concern with removing BSIS from April 2013 is one of timing.'... 'Therefore, instead of removing the financial incentives from April 2013, we suggest that BSIS is retained for the next year until its fit-for-purpose review is completed. We would prefer to have some type of financial scheme in place rather than no financial scheme at all. In parallel, we could work towards developing a robust replacement scheme.'
- 'If an ex ante approach is no longer feasible, then an ex post incentive appears to be the only other option.'
- 'On balance, [this respondent] believes there is benefit in sticking to the existing incentives scheme.'

1.7. Despite the concerns raised, even those respondents who urged caution believe that a change in licence to disallow costs may be necessary in light of the challenges of developing a robust model-driven scheme. However, and if we progressed the proposal, they are concerned that:

- *Disallowing costs could make the SO more risk averse* – 'A claw-back on inefficient actions would push the SO to be more risk-averse.' 'There is a reasonable possibility that such an approach may make National Grid more averse to trying innovative solutions if the cost recovery can subsequently be disallowed. However, clearly having the ability to be rewarded for positive innovations can counteract this potential reluctance, depending on the strength of the incentive.'

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- *The proposal requires more clarity and transparency* – ‘Our concerns would be in relation to the level of transparency and ability to review NGET’s actions, particularly in the absence of any comparators in terms of costs and outputs.’
- *The proposal will need a robust governance process* – ‘A robust governance process must be in place before the replacement scheme can be implemented and this will take some time to develop. There are many operational and practical issues to be resolved before any such replacement scheme can be adopted.’
- *The proposal could end up relying on models* – ‘We agree with the principle of disallowing costs incurred by NGET where their behaviour can be proved to be inefficient. However, we note that this again relies on setting a benchmark which could turn out to be incorrect and possibly subject to revision.’ Other respondents noted that ‘to enable Ofgem to scrutinise NGET’s balancing costs, some sort of model to (i) provide a baseline against which costs can be determined as efficient and (ii) value of investment decisions / innovative actions would be needed. The development of this model and supporting guidance will also take time to develop.’ ‘A discretionary reward on benefits over “business as usual” would necessitate modelling of BAU that seems to take us back to modelling accuracy. The best and most cost-efficient way of improving the accuracy of the model is through using it.’
- *The strongest objection to the proposal concerned Ofgem’s ability to monitor costs* – ‘We do not believe it would be prudent or efficient for Ofgem to rely monitoring NGET’s costs with the backstop of enforcement action to ensure that these action are taken. In any case, it is difficult to see what information Ofgem (or the market) will have for this approach to work in practice.’

1.8. On the continued development of the models, stakeholders were generally supportive. Respondents either advocated for a continuation of the current scheme for another year to allow for further improvements through experience. One respondent noted that ‘the best and most cost-efficient way of improving the accuracy of the model is through using it.’ They also explicitly recommended a scheme to incentivise the SO ‘to improve the accuracy of its modelling,’ and a peer review process to enable this.

1.9. Efficiency in system operations reward scheme (discretionary reward scheme). Stakeholders broadly supported the principle of an efficiency in system operations reward scheme and saw merit in its implementation. Commenting that:

- ‘Subject to a robust definition of what constitutes business as usual, we believe that this approach should form the template for the design of all SO incentives, where the onus is on the SO to demonstrate to Ofgem how its performance has led to measurable benefits.’
- ‘In principle, we see benefits in this approach but would like to better understand how this scheme might work in practice, including its likely impact on NGET’s process for signing off investment cases.’
- ‘Conceptually, we see merits in a discretionary reward scheme and welcome further consultation to better understand how it might work in practice.’
- ‘We support the principle of a discretionary reward mechanism.’

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- 'We support the sentiment of this mechanism.'

1.10. Whilst broadly supportive of the scheme, respondents highlighted several areas where they would like to see more work:

- *Governance and the role of an independent panel* - 'We think the establishment of the assessment panel will be key, as will the introduction of robust governance arrangements for the panel.' 'A robust governance process must be in place before the replacement scheme can be implemented and this will take some time to develop.' 'As it stands, the proposed regulatory framework for the replacement scheme is not clear or transparent.'
- *Challenge of identifying the BAU and calculating net benefits for the purpose of the reward* - 'The challenges will come from identifying the qualifying behaviours taken by NGET and accurately calculating the benefit to ensure that the rewards are appropriate. That said, we recognise the work under RIIO-T1 to make discretionary rewards more objective. We believe a similar approach may increase industry and stakeholder understanding of and confidence in discretionary rewards.'
- *Clarity and transparency of the proposals* - 'The proposed regulatory framework for the discretionary rewards scheme lacks the necessary clarity and transparency. Its stability will depend on the process underlying it and the likelihood of potential challenges and appeals NGET might raise to Ofgem decisions and their consequences e.g. retrospective changes to charges. There are many operational and practical issues to be resolved before any such replacement scheme can be adopted.'
- *Impact on balancing cost charges* - 'One issue which is of concern to charge payers is the ability of significant changes in charges to be imposed after the charging year has concluded.' 'If an ex post adjustment, either up or down, can be made as proposed, it is important to payers that this does not result in another ex post adjustment to the BSUoS charges that they have to pay for the charging year concerned. Our suggestion would be that any refund or payment should be rolled over into the charges for the following year.'

Appendix 3 – Draft licence conditions

This section details our draft license conditions to enable us to disallow of costs and to introduce the efficiency in system operations reward scheme. It also includes draft licence conditions to introduce a financial incentive on the accuracy of the BSUoS charge forecasts produced by the SO and a licence condition requiring the SO to continue developing its balancing costs models.

Special Condition [X]: Balancing Services Activity Revenue Adjustment on External Costs

1. Where it appears to the Authority that the licensee may not have procured or used the Balancing Services, as specified in the notice pursuant to paragraph 3 in an economic or efficient manner, the licensee will be assessed in accordance with Part A.

Part A: Determination of Balancing Services Activity Revenue Adjustment on External Costs

2. The Authority shall notify the licensee that it will issue a Balancing Services Activity Revenue Adjustment direction where the costs of procuring and using the Balancing Services as specified in the notice pursuant to paragraph 3 appear to the Authority to not be economic or efficient.
3. Before issuing a direction, for the purposes of paragraph 6, the Authority shall issue a notice to the licensee and such parties as the Authority considers likely to be affected by a direction:
 - i. specifying which Balancing Services that appear to the Authority may not have been procured or used in an economic or efficient manner;
 - ii. explaining the reasons why the Authority considers that the Balancing Services referred to in sub-paragraph i may not have been procured or used in an economic or efficient manner; and
 - iii. specifying the date, being no less than [X] days from the date of the notice, by which the licensee and such parties as the Authority considers likely to be affected by a direction may make representations to the Authority.
4. The Authority shall have regard to any representations made by the licensee and such parties as it considers likely to be affected in response to the notice referred to in sub-paragraph 3 (iii) before making a direction as to whether the Balancing Services specified in the notice were not procured or used by the licensee in an economic and efficient manner.
5. If the Authority considers that any analysis, information or representations provided pursuant to sub-paragraph 3 (iii) above is insufficient to enable the Authority to make a determination and issue a direction, the Authority may

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request further information as it considers necessary for the purposes of this condition. Such a request shall be made in writing and shall specify the date by which information shall be provided being not less than [X] days from the date of the request.

6. The Authority shall, within 3 months from the close of the notice period referred to in paragraph 3(iii) or paragraph 5, whichever date is later:
 - i. determine which of the Balancing Services specified in the notice were procured or used by the licensee in an efficient and economic manner;
 - ii. specify the reasons why the Authority considers those Balancing Services were not procured or used by the licensee in an economic or efficient manner; and
 - iii. issue a direction specifying the amount of the adjustment to the licensee's Balancing Services Revenue as set out in [AA5A].²⁹
7. [The total amount of any adjustment directed by the Authority in respect of Relevant Year t shall not exceed 10% of the total costs incurred by the licensee in procuring and using the Balancing Services in the Relevant Year t-1.]
8. This condition shall cease to have effect from such date as an incentive payment in respect of the total costs under the Balancing Services Activity revenue restriction under Part 2 of special condition AA5A on external costs is reintroduced into this licence
9. For the purposes of this condition:
"Balancing Services" has the meaning given in Standard Licence Condition C1

²⁹ Or a successor condition to Special condition AA5A. As part of the re-structuring being proposed to the Electricity Transmission licence as part of the RIIO-T1 project, Special Condition AA5A will be split into two – one condition for SO external costs (which will be developed as part of this SO 2013 project) and one for SO internal costs (which will be developed as part of RIIO-T1).

Special Condition [X]: Efficiency in system operations Reward Scheme

1. The purpose of this condition is to:
 - i. establish arrangements, to be known as the Efficiency in system operations Reward Scheme, for determining the amount of the Efficiency in system operations Reward (ESOR) term; and
 - ii. make provision for arrangements relating to administration, governance and revision of the ESOR Scheme.

Part A: Function of the ESOR Scheme

2. The function of the ESOR Scheme is to encourage the licensee to develop the use and procurement of relevant balancing services so as to promote efficiency in system operations in a sustainable decarbonised electricity market.

Part B: Determination of the amount of the ESOR term

3. In each Relevant Year t , as provided for by the ESOR Scheme Guidance, the Authority will determine and, by direction given to the licensee, specify, in accordance with the appropriate provisions set out in the ESOR Scheme Guidance, the amount of the ESOR term for the licensee for the Relevant Year.
4. The form of the application under the ESOR Scheme, assessment, implementation of, and other relevant matters relating to, the ESOR Scheme are provided for in or pursuant to the ESOR Scheme Guidance issued by the Authority under Parts C and D below.

Part C: The ESOR Scheme Guidance

5. The ESOR Scheme Guidance is a document published, and from time to time revised by the Authority in accordance with Part D for the purposes of setting out the application requirements, assessment process and procedures, administration and governance of the ESOR Scheme.
6. The ESOR Scheme may, without limitation, make appropriate provision about or impose requirements in respect of:
 - i. the licensee's application to the Authority under the ESOR Scheme including the type of information and evidence to be provided, and the format of the submission;
 - ii. the Authority's process for assessing the licensee's submission, including assessment criteria, how benefits to consumers may be measured and the role of the Expert Panel as set out in the ESOR Scheme Guidance;
 - iii. the process and procedures by which the Authority will determine the amount of the ESOR term for each Relevant Year t including any reward allocation rules in relation to the licensee's overall level of performance;

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- iv. the procedures by which the Authority will notify the licensee with respect to any direction in relation to the amount of the ESOR term; and
- v. any other matters relating to the administration and governance of the ESOR Scheme.

To be eligible for payment under the ESOR Scheme, the licensee must follow the applicable provisions of the ESOR Scheme Guidance.

Part D: Modification of the ESOR Scheme Guidance

7. The ESOR Scheme Guidance may be modified by the Authority by direction.
8. Before issuing a direction to modify the ESOR Scheme Guidance under paragraph 7 the Authority shall:
 - i. give notice to the licensee and such parties as the Authority considers likely to be affected by the modification that it proposes to modify the ESOR Scheme Guidance;
 - ii. specify the date on which it proposes that the provisions of the modified ESOR Scheme Guidance will take effect;
 - iii. set out the proposed modifications to the ESOR Scheme Guidance and the Authority's reasons for proposing the modifications; and
 - iv. specify the time (which must not be less than 28 days from the date of the notice) within which representations may be made; and
 - v. consider any representations in response to the notice that are duly made and not withdrawn.
9. The provisions of this special condition operate without prejudice to the [ETC11 Special Condition [x] on The Network Innovation Allowance (NIA)] and [ETC10 Special Condition [x] on The Network Innovation Competition (NIC)].³⁰

10. For the purposes of this condition:

"Efficiency in system operations Reward Scheme" means the arrangements as set out in this condition and the Efficiency in system operations Reward Scheme Guidance for determining the amount of the Efficiency in system operations Reward term;

"Efficiency in system operations Reward Scheme Guidance" means the document published and from time to time revised by the Authority in accordance with Part D of this condition;

³⁰ The NIA and NIC draft licence conditions published in the July consultation can be found in 'Supporting Document 1: Draft RIIOT-T1 Electricity Transmission licence changes' at <http://www.ofgem.gov.uk/Networks/Trans/PriceControls/RIIO-T1/ConRes/Documents1/Supporting%20Document%201%20Draft%20RIIOT1%20Electricity%20Transmission%20licence%20changes.pdf>



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'NIA' means the Network Innovation Allowance as defined in ETC11 Special Condition [X] of the draft transmission licence conditions; and

'NIC' means the Network Innovation Competition as defined in ETC10 Special condition [X] of the draft transmission licence conditions.

Special Condition [X]: Requirement to conduct a review and to develop enduring balancing cost models for the purpose of introducing an enduring scheme

1. The licensee shall cooperate with and assist the Authority for the purpose of developing enduring models in respect of the costs of procuring and using Balancing Services (being the external costs of the Balancing Services Activity) and shall prepare and submit a draft Scheme of Work as to how it will fulfil this obligation to the Authority by 1 June 2013.
2. The licensee shall make any consequential amendments to the draft Scheme of Work as may reasonably be directed by the Authority by 1 August 2013 or such date as the Authority may reasonably direct.
3. Unless the Authority directs otherwise, the licensee shall undertake the activities set out in the Scheme of Work within the timescales set out in the Scheme of Work or such other timescales as the Authority may reasonably direct.
4. The licensee shall comply with all the requirements of this condition in a timely fashion and in good faith.
5. For the purposes of this condition:

“Scheme of Work” means a specification of work for the purposes of developing enduring models in respect of the costs of procuring and using Balancing Services. This includes the review, development, testing, validation and external peer review of the models as well as development of enduring methodology statements. The Scheme of Work shall comprise an approach and timetable for the development, or further development, of a methodology, including inputs, assumptions and modelling methodologies, together with an approach for the validation of models, to facilitate a decision by the Authority as to whether it would be appropriate for it to re-introduce an incentive scheme in respect of the total costs under the Balancing Services Activity revenue restriction under Part 2 of special condition AA5A on external costs is reintroduced into this licence.



Special Condition [X]: BSUoS Charge Forecast Incentive

1. The purpose of this condition is to establish a BSUoS charge forecast incentive.
2. The maximum BSUoS charge forecast incentive revenue (in £) allowed to the licensee in respect of Relevant Year t (BCFIR_t) shall be derived from the following formula:

$$BCFIR_t = \text{Max} [BCFCAP_t - \{BCFIF_t \times \text{Abs} \{BCO_t - BCF_t\} / BCO_t\}, BCFFLO_t]$$

Where:

Max [x,y] is the value which is the greater of x and y;

Abs {x-y} is the value which is equal to x-y when x>y and equal to y-x when x<=y;

BCFIF_t means the BSUoS charge forecast incentive factor in respect of Relevant Year t and shall take the value £20,000,000;

BCFCAP_t means the BSUoS charge forecast incentive cap in respect of Relevant Year t and shall take the value £5,000,000;

BCFFLO_t means the BSUoS charge forecast incentive floor in respect of Relevant Year t and shall take the value -£5,000,000;

BCO_t means the BSUoS charge earned by the licensee in respect of Relevant Year t; and

BCF_t means the forecast of BCO_t produced by the licensee in accordance with paragraph 3.

3. The licensee shall submit the BCF_t to the Authority and publish it on its website no later than [X] days before the commencement of the Relevant Year t.
4. For the purposes of this condition:

“BSUoS charge” means Use of System Charges recovered by the licensee in respect of the Balancing Services Activity (both terms defined in C1 and as set out in the Connection and Use of System Code, Paragraphs 14.29-14.32). Such charges shall comprise both the external and internal costs of the Balancing Services Activity but shall not include charges made or levied or to be made or levied for the provision of Transmission Network Services.



Appendix 4 – Payment options for the efficiency in system operations reward scheme

Payments when size of reward is partially determined by forecast benefits

1.1. If, as we propose, the reward is based on actual benefits for one year and forecast benefits for the following seven years, then our proposal is the present value of these benefits should be calculated (using the weighted average cost of capital for the SO as the discount factor). This present value will then be recovered via equal payments (allowing for the time value of money) over the next six years i.e. to the end of the period for which benefits have been forecast.

1.2. This process is illustrated in Table 2 below. This assumes that the SO requests a reward at the start of year 2 based on actual net benefits of £10 million in year 1 and estimated net benefits of £9 million per year for the next seven years. In total, this amounts to a present value of net benefits of £65.7 million, and a reward equal to 25% of that or £16.4 million. In present value terms, this amounts to an annual payment over six years of £2.74 million, which is then converted into actual payments each year by dividing by the discount factor (so that the sum of the payments equals the allowed reward).

Table 2: Illustration of payment process based partly on estimated net benefits (£m)

Year		1	2	3	4	5	6	7	8
Net benefits									
	Actual	10							
	Estimated		9	9	9	9	9	9	9
Reward requested: year 2									
WACC		4.6%							
Discount factor		1.046	1	0.96	0.91	0.87	0.84	0.80	0.76
PV of net benefit		65.7							
Reward granted		16.4							
Payments				2.86	3.00	3.13	3.28	3.43	3.59

Payments when size of reward is determined by actual benefits

1.3. Even if the reward is paid on the basis of the actual net benefits that are generated in each year, the payment process will still have to take account of the fact that there will be two years of net benefits before payments begin, as shown in the table below. Under this approach the recovery of the first two years of net benefits takes place in exactly the same way as under the previous approach and 25% of the actual benefits that are generated in years 3 to 8 are added to this value.

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Table 3: Illustration of payment process based partly on estimated net benefits (£m)

Year	1	2	3	4	5	6	7	8
Actual net benefits	10	9	9	9	9	9	9	9
Reward requested: year 2								
WACC	4.6%							
Discount factor	1.046	1	0.96	0.91	0.87	0.84	0.80	0.76
PV of first two years net benefit	19.5							
Reward for first two years	4.9							
Payments								
Accrued			0.85	0.89	0.93	0.97	1.02	1.06
Actual			2.25	2.25	2.25	2.25	2.25	2.25
Total			3.10	3.14	3.18	3.22	3.27	3.31

1.4. Given the same actual or estimated net benefits in each year, the two approaches yield the same present value for the reward although the annual profile of payments is different.

Appendix 5 –The Authority’s Powers and Duties

1.1. Ofgem is the Office of Gas and Electricity Markets which supports the Gas and Electricity Markets Authority (“the Authority”), the regulator of the gas and electricity industries in Great Britain. This Appendix 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, principally the Gas Act 1986, the Electricity Act 1989, the Utilities Act 2000, the Competition Act 1998, the Enterprise Act 2002 and the Energy Act 2004, as well as arising from directly effective European Community legislation. References to the Gas Act and the Electricity Act in this Appendix are to Part 1 of each of those Acts.³¹

1.3. 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 Appendix must be read accordingly.³²

1.4. The Authority’s principal objective when carrying out certain of its functions under each of the Gas Act and the Electricity Act is to protect the interests of existing and future consumers, wherever appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with, the shipping, transportation or supply of gas conveyed through pipes, and the generation, transmission, distribution or supply of electricity or the provision or use of electricity interconnectors.

1.5. The Authority must when carrying out those functions 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 them³³;
- the need to contribute to the achievement of sustainable development; and

³¹ entitled “Gas Supply” and “Electricity Supply” respectively.

³² 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.

³³ 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 Act in the case of Electricity Act functions.

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- the interests of individuals who are disabled or chronically sick, of pensionable age, with low incomes, or residing in rural areas.³⁴

1.6. 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 licensed³⁵ 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.

1.7. In carrying out the functions referred to, the Authority must also have regard, to:

- the effect on the environment of activities connected with the conveyance of gas through pipes or with the generation, transmission, distribution or supply of electricity;
- 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.

1.8. 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 Regulation³⁶ 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.

³⁴ The Authority may have regard to other descriptions of consumers.

³⁵ or persons authorised by exemptions to carry on any activity.

³⁶ Council Regulation (EC) 1/2003



Appendix 6 – Glossary

A

Ancillary Services

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

The Authority/Ofgem/GEMA

Ofgem is the Office of Gas and Electricity Markets, which supports the Gas and Electricity Markets Authority (GEMA), the body established by Section 1 of the Utilities Act 2000 to regulate the gas and electricity markets in Great Britain.

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 charges

Charges that NTS users pay for differences between their inputs and offtakes from the NTS and for differences between its nominated and delivered quantities.

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 include ancillary services.

Balancing Services Incentive Scheme (BSIS)

A scheme that has been applied to the SO to incentivise efficient balancing of the transmission network.

Balancing Services Use of System charges (BSUoS)

The half-hourly 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

If the electricity system experiences a full or partial shut down, isolated power stations that have black start capability (an auxiliary generating plant located on-site) are started individually and gradually connected to each other to form an interconnected system again.

C

Cap

The maximum incentive payment the SO is permitted to receive as part of an incentive scheme (this may also be subject to a 'sharing factor').

Capital expenditure (capex)

Expenditure on investment in long lived transmission assets, such as gas pipelines or electricity overhead lines.

Carbon footprint

Total amount of greenhouse gas emission caused directly and indirectly by a business or activity.

Connect and Manage

Under this regime generators can connect to the transmission network in advance of all the necessary upgrades and reinforcements to the wider transmission system being put in place.

Consumer

In considering consumers in the regulatory framework we consider users of network services (for example, generators, shippers) as well as domestic and business end consumers, and their representatives.

Constraints (also known as congestion)

A constraint occurs when the capacity of transmission assets is exceeded so that not all of the required generation can be transmitted to other parts of the network, or an area of demand cannot be supplied with all of the required generation.

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

Demand side response

The reduction of customer energy usage at times of peak usage in order to help system reliability, to reflect market conditions and pricing, or to support infrastructure optimisation or deferral of additional infrastructure.



E

[Ex ante / Ex post Inputs](#)

Ex ante inputs to National Grid's models are those whose values are set prior to the start of the scheme and are not updated as the scheme progresses (except under specific agreed circumstances). Ex post inputs are collected on a monthly basis using outturn data. Ex ante and ex post data are combined with the agreed models to determine the level of costs against which National Grid should be incentivised.

[Energy Imbalance](#)

Energy imbalance costs are those incurred by National Grid to correct for differences between the generation supplied by the market and the demand on the system (see also Market Length).

F

[Financeability](#)

Financial models are used to determine whether the regulated energy network is capable of financing its necessary activities and earning a return on its regulated asset value (RAV) under the proposed price control. This financeability is assessed using a range of different financial ratios.

[Floor](#)

The maximum loss the SO can make as part of an incentive scheme (this may also be subject to a 'sharing factor').

[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

[Gate closure](#)

Gate Closure is the point in time when market participants notify the SO of their intended final physical position. It is set at one hour ahead of real time.

H

[The Health and Safety Executive \(HSE\)](#)

A public body responsible for regulating health and safety in Great Britain with the primary function to secure the health, safety and welfare of people at work and to protect others from risks to health and safety from work activity.



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I

[Interconnector](#)

Equipment used to link electricity or gas systems, in particular between two Member States.

L

[Licence conditions \(obligations\)](#)

Obligations placed on the network companies to meet certain standards of performance. The Authority (GEMA) has the power to take appropriate enforcement action in the case of a failure to meet these obligations.

[Low carbon economy](#)

An economy which has a minimal output of greenhouse gas emissions.

M

[Margin \(in electricity\)](#)

Margin is the need for NGET to ensure that the units synchronised at any given time have sufficient spare capacity to ensure that the Short Term Operating Reserve Requirement (STORR) is met. The STORR is set such that there is a risk that total demand will not be able to be met on only 1 in 365 days.

[Market Length](#)

Market Length refers to the volume of excess demand (or supply) that exists at the point of gate closure. If generators generate more energy than they have contracted for and/or suppliers' customers consume less energy than their supplier has bought on their behalf, then the net effect is that there is a surplus of generation on the system. This is often described as a 'long' market. Conversely, if generators generate less energy than they have contracted for and suppliers' customers consume more energy than their supplier has bought on their behalf, then the net effect is that there is a shortfall of generation on the system. This is often described as a 'short' market.

N

[National Grid Electricity Transmission \(NGET\)](#)

NGET is the Transmission System Operator for Great Britain. As part of this role it is responsible for procuring balancing services to balance demand and supply and to ensure the security and quality of electricity supply across the Great Britain Transmission System.

[National Electricity Transmission System Security and Quality of Supply Standard \(NETS SQSS\)](#)



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As referred to in the electricity Transmission Licence Standard Conditions C17 and D3, this is the standard in accordance with which the electricity transmission licensees shall plan, develop and operate the transmission system.

Net Present Value (NPV)

A NPV is the discounted sum of future cash flows, whether positive or negative, minus any initial investment.

Network charges

These are charges set for the use of network services.

O

OFTO

Offshore Transmission Owner.

Operating Margin (OM) (in electricity)

A requirement to ensure that the system security can be properly managed across power exchange and Balancing Mechanism timescales, i.e. 'up to' and 'at real time'.

Outputs

What the SOs are expected to deliver, for example, the gas SO (NGG) is expected to deliver efficient and timely connections.

P

Plexos

A modelling tool for power market analysis.

Price control

The control developed by the regulator to set targets and allowed revenues for network companies. The characteristics and mechanisms of this price control are developed by the regulator in the price control review period depending on network company performance over the last control period and predicted expenditure in the next.

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.



Reopeners

A process undertaken by Ofgem to reset the revenue allowances (or the parameters that give rise to revenue allowances) under a price control or incentive scheme before the scheduled next formal review date.

RIIO-T1

RIIO-T1 is the first transmission price control review under the new regulatory framework known as RIIO (Revenue = Incentives + Innovation + Outputs). The RIIO model builds on the previous RPI-X regime, but is designed to better meet the investment and innovation challenge by placing much more emphasis on incentives to drive the innovation needed to deliver a sustainable energy network at value for money to existing and future consumers.

S

Sharing factors

For cost incentives, these describe the percentage of profit or loss which the SO will have to bear if the relevant incentive performance measure falls below or exceeds the relevant incentive target. For output incentives, these describe the percentage of profit or loss which the SO will have to bear if the relevant incentive performance measure exceeds or falls below the relevant incentive target.

Short Term Operating Reserve (STOR)

A service that provides additional active power from generation and/or demand reduction.

SO External costs

The costs National Grid incurs in relation to the operation of the gas and electricity system. These costs include contracts for balancing activities in electricity, purchasing energy to transport gas and entering into trades on the commodity market (gas) and the Balancing Mechanism (electricity).

SO Internal costs

Internal costs relate to the SO's own costs associated with its SO activities, such as building, staff and IT costs.

Stakeholder

Stakeholders are those parties that are affected by, or represent those affected by, decisions made by network companies and Ofgem. As well as consumers and companies involved in the energy sector, this would for example include Government and environmental groups.

Sustainable energy sector

A sustainable energy sector is one which promotes security of supply over time; delivers a low carbon economy and associated environmental targets; and delivers related social objectives (e.g. fuel poverty targets).



System Operator incentive schemes from 2013: disallowing costs and the efficiency in system operations reward scheme

System Average Price (SAP)

The System Average Price (SAP) is calculated daily as the sum of all gas balancing charges divided by the sum of all balancing transactions quantities in respect of that Day.

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

Third Package (Third Internal Energy Market Legislative Package)

The third package is a key step in implementation of the internal EU energy market. It recognises the need for better coordination between European network operators and continuing coordination between regulators at that level.

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.

U

Uncertainty mechanisms

Uncertainty mechanisms allow changes to be made to the base revenue during the price control period to reflect significant cost changes that are expected to be outside the company's control. Examples include revenue triggers and volume drivers.



Appendix 7 – Feedback questionnaire

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?

Please send your comments to:

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