

Electricity System Operator Incentives: Final Proposals

Consultation

Reference: 86/13
Publication date: 31 May 2013
Response deadline: 28 June 2013

Contact: Lewis Heather
Team: Wholesale Markets
Tel: 020 7901 7362
Email: soincentive@ofgem.gov.uk

Overview:

National Grid Electricity Transmission (NGET) is the electricity system operator (SO) for Great Britain (GB). As SO, NGET plays a fundamental role in the functioning of the GB electricity market as it is responsible for balancing the electricity system on a continuous basis.

This document sets out our final proposals for an incentive scheme on the electricity SO. This will incentivise the SO to act economically and efficiently with regard to the costs that it incurs to balance the system, thus protecting the interests of consumers. The previous incentive scheme expired on 31 March 2013. The scheme set out in these final proposals will be applied retrospectively from 1 April 2013 and will expire on 31 March 2015.

In addition to the balancing services incentive scheme we set out our final proposals for incentives on the SO to continue to improve its performance in specific areas such as the information that it provides to the market and its modelling capability.

Context

National Grid Electricity Transmission (NGET) is the electricity system operator (SO) for Great Britain (GB). As SO, NGET plays a fundamental role in the functioning of the GB electricity market. It is responsible for balancing the electricity system on a continuous basis by ensuring that generation on the national electricity grid matches demand in real time. To do this, NGET buys and sells energy and procures associated balancing services. It also provides information to market participants such as forecasts of wind generation.

Ofgem regulates the actions of the SO to ensure that it is encouraged to minimise the costs of balancing the system for market participants. In addition to licence conditions which require the SO to act economically and efficiently, we achieve this through setting financial and reputational incentives. This consultation sets out our final proposals for incentives to cover the period from 1 April 2013 to 31 March 2015.

Associated documents

- Electricity SO Incentives 2013 section 11A notice. 31 May 2013:
<http://www.ofgem.gov.uk/Markets/WhIMkts/EffSystemOps/SystOpIncent/Documents1/Electricity%20SO%20incentives%202013%20section%2011A%20notice.pdf>
- Electricity System Operator Incentives: consultation on a scheme for 2013. 6 March 2013:
<http://www.ofgem.gov.uk/Markets/WhIMkts/EffSystemOps/SystOpIncent/Documents1/BSIS%20Consultation%20Document.pdf>
- RIIO-T1: Final Proposals for National Grid Electricity Transmission and National Grid Gas. 17 December 2012, Ref 169/12:
http://www.ofgem.gov.uk/Networks/Trans/PriceControls/RIIO-T1/ConRes/Documents1/1_RIIOT1_FP_overview_dec12.pdf
- System Operator incentive schemes from 2013: disallowing costs and efficiency in system operations reward scheme. 26 October 2012:
<http://www.ofgem.gov.uk/Markets/WhIMkts/EffSystemOps/SystOpIncent/Documents1/DAC%20and%20ESOR%20Consultation%20Document.pdf>
- System Operator incentive schemes from 2013 initial proposals: Overview. 27 July 2012:
<http://www.ofgem.gov.uk/Markets/WhIMkts/EffSystemOps/SystOpIncent/Documents1/IP%20SO%202013.pdf>

Contents

Executive Summary	4
Final proposals: scheme overview	4
Next steps	5
1. Introduction and Overview	6
System Operator Incentives	6
Setting incentives for 2013	7
Summary of final proposals	8
Application of the scheme retrospectively	10
Process to licence implementation	11
2. Setting the target	12
Setting the target	12
Methodology changes	14
Update provisions	14
Transmission limits mid scheme update input	17
Constraint target discount factor	20
Balancing mechanism pseudo prices	23
Black Start	25
3. Parameters of a Balancing Services Incentive Scheme	28
Scheme length and structure	28
Dead-band	29
Sharing factor and cap and floor	29
Income adjusting event provisions	30
4. Additional Incentives	32
SO Innovation Roll-Out Mechanism	32
Wind Generation Forecasting Incentive	34
Transmission Losses Reputational Incentive	38
Model and Methodology Development Licence Conditions	39
Balancing Services Use of System Charge Forecasting Incentive	41
Appendices	42
Appendix 1 - Consultation Response and Questions	43
Appendix 2 – Notice under Section 11A of the Electricity Act 1989	44
Appendix 3 - Glossary	45
Appendix 4 - Feedback Questionnaire	52

Executive Summary

National Grid Electricity Transmission (NGET) is the electricity system operator (SO) for Great Britain (GB). As SO, NGET is responsible for balancing the electricity system on a continuous basis. The costs that NGET incurs in carrying out this role are passed through to users of the system via balancing services use of system (BSUoS) charges). Consumers see these costs reflected in their electricity bills. In recent years, the annual cost to consumers has been approximately £850 million.

We place incentives on NGET to operate the system as cost-efficiently as possible. The previous incentive scheme expired on 31 March 2013. In this document we set out our final proposals for electricity SO incentive schemes to apply retrospectively from 1 April 2013 to 31 March 2015. We consider that our final proposals represent a fair balance of risk and reward between NGET and consumers, and provide a strong incentive for NGET to operate the system efficiently in the interests of consumers.

In developing our final proposals, we have looked, where possible, to apply the principles and timescales of RIIO (Revenue = Incentives + Innovation + Outputs). This regulatory framework was applied to the transmission owners through RIIO-T1 which came into effect on 1 April 2013 and is intended to expire on 31 March 2021. At this time we do not consider it beneficial to consumers to fully align the length of electricity SO incentives with the RIIO-T1 timescales. This is due to significant uncertainty regarding the cost and appropriate role of the SO arising from expected market developments such as Electricity Market Reform and European Network Codes as well as projects such as our own Future Trading Arrangements.

Instead, we are putting in place an interim incentive scheme broadly similar to that included within our consultation published on 6 March 2013. Responses to our consultation were supportive of this approach so long as there was sufficient confidence in the models that would underpin a scheme. Having engaged closely with NGET on its modelling work, we consider the models to be sufficiently robust to use for an interim scheme. We also include a number of measures within our final proposals to mitigate any remaining risk of modelling shortcomings and place a requirement on NGET to review and further develop the models.

Final proposals: scheme overview

Under our final proposals, the costs of the actions taken by NGET will be compared against a target which is defined through a process that we set out in this document. Within bounds of return and loss known as the 'cap and floor', NGET will retain a share of any under or over spends. The remainder of these costs will be passed on to users of the electricity transmission system through BSUoS charges. This approach provides clear incentives for NGET to take actions which are as efficient as possible and ensures that customers benefit from improved efficiencies through lower BSUoS charges. The cap and floor provide a way of managing uncertainty and avoiding excessive windfall gains or losses for NGET.

Chapters 2 and 3 set out how our scheme would work. We make use of two NGET models to define a scheme target for the energy balancing and constraint management costs incurred by NGET. We combine this with a target for the costs of procuring black start services to identify an overall scheme target.

Chapter 4 sets out a number of additional incentives that would sit alongside our incentive scheme for the two year duration. These additional incentives focus on specific activities undertaken by the SO where its performance is valued by market participants. These are summarised below:

- **SO Innovation Roll-out Mechanism:** A mechanism to provide funding for the roll-out of SO innovation which will have longer term benefits for consumers;
- **Wind Generation Forecasting Incentive:** A financial incentive on the accuracy of NGET's day-ahead wind generation forecasting;
- **Transmission Losses Incentive:** A requirement for NGET to publish historic and forward looking information on the level of transmission losses on the system and on the actions it takes with regard to transmission losses;
- **Model Development Licence Condition:** A requirement for NGET to review and continue to develop models to ensure they meet a number of objectives.

We believe a two year target based scheme coupled with these additional incentives will place strong incentives on the SO to act efficiently and improve its performance to the benefit of the market. Hence, we consider these proposals to best protect the interests of consumers.

We continue to believe that there are a number of additional behaviours which the SO is currently not incentivised to demonstrate (such as more longer term thinking about the best way to balance the system) that could have significant benefits for consumers in the future. The two year scheme length will provide an opportunity to review our approach towards incentives as greater certainty develops regarding the changes to the market expected in the coming years. We will consider the level of clarity with regard to these developments in deciding on the most appropriate timing for introduction of an enduring approach.

Next steps

Subject to any responses to our statutory consultation, the Authority will direct modification to NGET's electricity transporter licence to apply retrospectively from 1 April 2013. Following a Direction from the Authority, relevant parties will have 20 working days in which to appeal our decision to the Competition Commission (CC).

1. Introduction and Overview

Chapter Summary

In this chapter we summarise the process we have followed to develop our final proposals, we present our final proposals to apply the scheme retrospectively from 1 April 2013 and we set out the expected next steps to licence conditions taking effect.

Question box

Question 1: Do the draft licence conditions published alongside this document appropriately reflect our final proposals?

System Operator Incentives

1.1. National Grid Electricity Transmission (NGET) is the system operator (SO) for Great Britain (GB). As SO, NGET plays a fundamental role in the functioning of the GB electricity market as it is responsible for balancing the electricity system on a continuous basis. To do this, NGET buys and sells energy and procures associated balancing services. It also provides information to market participants such as forecasts of the levels of renewable generation on the system. This provides market participants with a greater level of information against which they can consider the actions that they take, thus increasing market efficiency.

1.2. We have been setting incentives¹ on the electricity SO in broadly their current form since 2001. These schemes have lasted one to two years and incentivise NGET to operate efficiently through setting a target² for its balancing actions. NGET is then accountable for a percentage of any under or overspend against this target with the remainder being passed on through balancing services use of system (BSUoS) charges. In the period 1 April 2011 to 31 March 2013, the costs passed through to BSUoS charges was approximately £1700 million³.

¹ These incentives focus on the external costs of the SO which includes the actions it takes in the balancing mechanism and contracts that it signs in order to manage constraints or procure ancillary services for example. Incentives for the internal costs of the SO (staff and other resource costs) are developed as part of the price controls set on the transmission owners (RIIO-T1).

² Recent schemes have not set an overall target at the commencement of the scheme. Rather, NGET's performance against a target at the start of the scheme for certain cost components is combined with updated actual data to generate an overall target which is only known at the end of the scheme.

³ NGET may apply for income adjusting events up until three months after the expiry of the scheme. Any approved income adjusting events could affect its performance against the incentive and thus the costs to consumers.

Setting incentives for 2013

1.3. We started the process of developing an incentive scheme with our consultation on electricity and gas SO incentives schemes published on 14 June 2011. This document set out our initial views on the principles that could underpin a longer term incentive scheme from 1 April 2013. We included considerations of the extent to which we should align SO incentives with the RIIO⁴ principles including the length of the scheme and the potential for output based incentives.

1.4. Our principles and policy consultation was published on 31 January 2012. In this document, we consulted on our proposed objectives, policy and principles for aligning an electricity SO incentive scheme to the RIIO regulatory period. We also set out our preliminary views on a combination of outputs and costs based incentives.

1.5. Following the submission of NGET's business plan which set out its proposed approach towards incentives, we published our initial proposals for an incentive scheme on 27 July 2012. This included an alternative approach to incentivising the SO through a cost disallowance and discretionary reward methodology. This alternative was developed as a result of concerns with the performance of NGET's models which would underpin a target based financial incentive approach.

1.6. In response to requests from industry for more information on how a cost disallowance and discretionary reward would work, we published a follow up consultation focussing on this approach on 26 October 2012.

Return to a balancing services incentive scheme approach

1.7. In addition to consultation responses, some of which continued to raise concerns with our cost disallowance approach, a number of developments led us to reconsider our proposals⁵. The most important of these was evidence provided by NGET in early 2013 to demonstrate significant improvements to its models.

1.8. We subsequently engaged with stakeholders on the relative merits of returning to a BSIS at an industry workshop that we held on 21 January 2013. NGET then held a modelling workshop to demonstrate modelling developments to industry on 20 February 2013. As a result of the improved confidence provided in the models, we published a consultation on a BSIS on 6 March 2013 (our consultation)⁶. We set out that proceeding to implementation of a BSIS would be subject to NGET providing us with evidence to demonstrate that the models were sufficiently robust.

⁴ RIIO (Revenue = Incentives + Innovation + Outputs) is our new regulatory framework used for regulating the gas and electricity transmission and distribution networks. As NGET also own one of the three electricity transmission networks, there are important interactions between RIIO-T1 (the first transmission price control under the RIIO framework) and electricity SO incentives. These are considered in this final proposals document.

⁵ More information regarding the developments which led us to reconsider our approach is provided in our consultation on a BSIS published on 6 March 2013.

⁶ This is the consultation referred to throughout this document unless stated otherwise.

1.9. Since publishing our March consultation on a BSIS we have continued to engage closely with NGET on its modelling developments. NGET has provided us with evidence that the accuracy of the models has improved markedly. We have also carried out an internal quality assurance process in which we have taken the inputs for the scheme and processed them through NGET’s models to ensure that they are working and the information provided by NGET is accurate.

1.10. As a result of this close engagement, and given the improved level of confidence that we have been provided to demonstrate that NGET’s models⁷ are sufficiently robust for an interim BSIS, we set out our final proposals in chapter 3 of this document. In addition to our BSIS proposals, we also set out final proposals for a number of additional incentives in chapter 4. This includes a licence condition on NGET to review and improve its models to ensure that these can reflect market developments and meet a number of objectives. Our draft licence conditions, which would enable these proposals to take effect, are published alongside this document.

Summary of final proposals

1.11. Since publishing our consultation on a BSIS on 6 March 2013, we have taken account of respondents’ views and have received further information from NGET in order to develop our final proposals. A summary of our final proposals is provided alongside the approach taken in the previous scheme in table 1 below:

Table 1: Summary of final proposals

Characteristic	Description	Previous scheme approach	Final Proposals for 2013-15 scheme
Scheme parameters			
Application of scheme in 'interim period'	How the SO’s costs will be treated in the period where no incentive scheme is in place	Licences took effect on 19 July 2011. Retrospectively applied from 1 April 2011	Licences expected to take effect in September 2013. Retrospectively applied from 1 April 2013
Scheme length and structure	Length and structure of scheme	Two years	Two year scheme with one year update of target and other key parameters
Dead-band	Under/overspend around the target in which costs are fully passed through to consumers	Dead-band of ±£5m around target	No dead-band
Sharing factor	Percentage of under/overspend that the SO retains within the cap and floor bounds	25%	25%

⁷ We continue to note that no forecasting models are immune to inaccuracies resulting from error or real-world developments. In addition to our greater scrutiny of the models, we have designed our scheme to mitigate risk of modelling shortcomings to the extent possible.

Characteristic	Description	Previous scheme approach	Final Proposals for 2013-15 scheme
Cap and floor	Maximum return/loss that the SO can derive	±£50m over two year period	±£25m in each year of scheme
Income adjusting events (IAEs)	Provisions to apply for changes to the target to account for events beyond NGET's control and ability to predict which lead to costs exceeding a materiality threshold	Materiality threshold of £2m	Raise materiality threshold to £10m.
Methodology			
Update provisions	Provisions for NGET to update model inputs, apply for changes to methodology which governs the models and correct model or model input errors	Provisions for ad hoc amendments to the methodologies following consultation with the industry	Provisions for NGET to update specific model inputs and apply for methodology changes at mid-scheme point. Requirement to correct errors at earliest opportunity
Constraints model discount factor	The discount applied to the output of the constraints model to reflect the actions outside of the balancing mechanism that we would expect NGET to take as 'business as usual'	41%	38% based on updated analysis
Balancing mechanism (BM) 'pseudo' prices	Treatment of the volume weighted average balancing mechanism (BM) prices to resolve imbalance that NGET inputs into the models	Modelled on an ex ante basis	Ex post in order to remove potential for windfall gains or losses
Transmission limit inputs	Timing at which NGET will input transmission limits into the models	Scheme commencement (up to two years ahead of real time)	Mid-scheme update – inputs up to one year ahead of time
Black start ⁸	How the cost incurred by NGET in order to procure sufficient black start capability is treated	Target set up front and incentivised. This target is built up from the different costs which NGET can be expected to incur over the scheme period	Target set up front and incentivised. Target built up from the different costs NGET are expected to incur over the scheme period. Some cost items included in the mid-scheme update provisions

⁸ Black start refers to the requirement for NGET to be able to 're-boot' the system following a partial or total loss of energy on the electricity transmission system. In order to do this, certain generators must have the ability to self-start and then re-energise the system. To meet this requirement, NGET procures black start services from some generators who are able to provide such a service.

Characteristic	Description	Previous scheme approach	Final Proposals for 2013-15 scheme
Additional Incentives			
SO innovation roll-out mechanism	Funding for roll-out of proven innovation (Technology Readiness Level 9 ⁹) where benefits go beyond the scheme period	No funding in place	Up to £10m available for roll-out of up to three projects in second year of scheme, funded through BSUoS charges
Wind generation forecasting incentive	Incentive on the accuracy of the SO's day ahead wind generation forecasting	No incentive	A maximum of ±£250k each month based on NGET's day ahead forecast accuracy
Transmission losses incentive	Incentives for the SO to reduce transmission losses where possible and report on transmission losses	Target costs included within BSIS and subject to financial incentives	Remove financial incentive to reduce risk on NGET in an area which is likely to be outside of its control. Requirement for NGET to report on system transmission losses
Model development licence condition	Requirement for the SO to develop the models which are used to set a target under a scheme	Licence condition to develop the models to enable incentive scheme to be set based on the models from 1 April 2013	Licence condition to continue developing models. Focus on working with stakeholders and enabling enduring models to meet a number of objectives
Balancing Services Use of System forecasting incentive	An incentive on NGET to accurately forecast the charges that system users will incur for balancing services	No incentive in place	No incentive in place. Considered unnecessary and inappropriate for use alongside BSIS

Application of the scheme retrospectively

1.12. The previous BSIS expired on 31 March 2013. In our March consultation, we set out our intention to retrospectively apply the amended licence conditions from 1 April 2013 and for this to possibly take effect from the date at which we publish the notice to modify the licences 56 days before these licences take effect. We considered this the most effective way to ensure that NGET continued to act efficiently in the period between expiry of the previous scheme and the date at which licence conditions would be formally modified.

1.13. We noted that retrospective application is generally unpopular with industry participants. In our consultation, we suggested that the impact on charges would be relatively limited and could be implemented to take effect prospectively.

⁹ Technology Readiness Level (TRL) refers to the stage of innovation of a technology. A TRL of 9 indicates the roll out stage of development

1.14. In consultation responses, NGET agreed with our proposal to apply the scheme retrospectively. A number of industry participants cited their objection to retrospective application in principle but agreed that it was a sensible approach in this case, particularly given the minor impacts on charges. One respondent disagreed with retrospective application if it would lead to a re-statement of costs.

1.15. We note industry's concerns with retrospective application. We do not consider retrospective application to be in line with our general principles given the lack of effectiveness of applying incentives to actions that have already been taken. However, in this case we continue to consider retrospective application to be the optimum approach to protect consumers as it ensures that NGET has continued to be incentivised since 1 April 2013. We consider this beneficial on the basis that our March consultation set out proposals for a scheme which included retrospective application and were generally in line with our final proposals. Therefore, NGET has had a good idea of the incentives which are likely to come into effect and is expected to have been taking actions in line with these incentives.

1.16. To minimise the impact on industry, we are continuing to work with NGET on the possibility of applying charging which incorporates performance under the incentive scheme from the date at which we publish the decision to modify the licences; 56 days before they formally take effect. In addition, rather than retrospectively applying the scheme by re-stating the BSUoS charges that system users must pay, NGET intends to prospectively apply charges so that no re-statement of costs is required. This will involve correcting for NGET's performance against the incentives¹⁰ over a number of months following scheme implementation or in such a way so as to minimise the administrative burden on BSUoS customers.

Process to licence implementation

1.17. Appendix 2 contains a statutory notice of our proposal to modify NGET's electricity transmission licence under Section 11A of the Electricity Act 1989. Subject to any responses to the statutory consultation, we will direct the modification to NGET's electricity transporter licence to be implemented in September (at least 56 days after the date of direction). The licence changes will be retrospectively applied from 1 April 2013. The changes to the licence modification process as a result of the implementation of the Third Package¹¹ mean that NGET's consent is no longer required for us to implement the modification. However, following publication of the Decision to modify the licences from the Authority, relevant parties have 20 working days in which to appeal our decision to the Competition Commission (CC).

¹⁰ As we set out in our consultation on a BSIS, at a maximum we would not expect this to exceed approximately 5% of the overall costs which are passed through to BSUoS charges in this period.

¹¹ The term "Third Package" refers to Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 (Gas Directive) and Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 (Gas Directive) and Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 (Electricity Directive), concerning common rules for the internal market in natural gas and electricity respectively.

2. Setting the target

Chapter Summary

In this chapter we explain our approach towards setting the target for NGET's costs of balancing the system under a balancing services incentive scheme. We include our final proposals on proposed changes to the methodology which NGET has raised.

Setting the target

2.1. In our March consultation we set out how a scheme target was identified under the BSIS that was in place from 1 April 2011 and 31 March 2013 (the 2011-13 scheme). We continue to propose a target defined using a broadly similar approach.

2.2. The overall scheme target would be a combination of three separate targets:

- A target for NGET's energy balancing costs;
- A target for NGET's constraint management costs;
- A target for the costs incurred in procuring black start services.

2.3. The calculation of NGET's energy balancing and constraint management cost target will continue to be made up of two aspects; the methodologies which govern how a cost target is generated, and the models used in accordance with these methodologies to generate an energy balancing and constraint management target. We will set a target for the costs of procuring the required black start services at the commencement of the scheme based on historic costs and expected developments.

2.4. The methodologies which set out how a target is generated are defined in three methodology statements¹². One of these methodologies determines how the variables that NGET must input into the models are treated. Under our proposed scheme there would be three types of inputs as follows:

- *Ex ante inputs*: These are variables that are input and **fixed at the commencement** of the scheme or ahead of real time.
- *Ex post inputs*: These are variables that are input at commencement of the scheme but **updated at the end of each month with actual cost data**.

¹² These are the Constraint Cost Target Modelling Methodology, the Energy Balancing Cost Target Modelling Methodology and the Ex Ante or Ex Post Treatment of Modelling Inputs Methodology.

- *Mid-scheme update inputs:* We propose this sub-set of ex ante inputs as an addition for the 2013-15 scheme. These variables will be input into the model at the commencement of the scheme. They will be **fixed for the first scheme year** but NGET will be able to **update them with revised information** taking effect from 1 April 2014. We will be able to veto any updates if we conclude that they have not been applied appropriately.

2.5. We have previously separated the inputs between ex ante and ex post to ensure that the incentives on NGET are focused on areas where this can add benefit. In short, we use ex ante inputs to incentivise NGET where it has some influence over costs and should be incentivised to keep these to a minimum. We also use ex ante inputs to place incentives on NGET where it has some ability to forecast variables and where the market benefits from this forecast being as accurate as possible.

2.6. We use ex post inputs where a variable is largely outside of NGET's control and is difficult to forecast. In this case, the benefit of applying incentives is reduced and there may be a risk of windfall gains or losses resulting from factors unrelated to the actions of the SO.

2.7. As a sub-set of ex ante inputs, we have identified some variables where NGET should have some ability to forecast inputs with reasonable accuracy over a one year period but where this ability may deteriorate beyond the one year time horizon. In addition, we may consider that incentives set against a one year forecast provide benefits to market participants. We will include these variables as a mid-scheme update input within our update provisions (more detail below).

2.8. Two sets of models are used by NGET in accordance with the agreed methodologies to generate a scheme target. These are the energy models that forecast the energy costs (costs of balancing the system and of ancillary services) and the constraints model that forecasts the costs of managing transmission constraints. The two sets of modelling architecture take the variables input by NGET and process these to forecast the system balancing and constraint management costs that NGET will incur.

2.9. As a number of variables are updated with actual data post event, the estimation of costs made by the models at the start of the scheme is a forecast rather than a final target. The overall cost target against which NGET's out-turn costs are measured will not be known until those inputs defined as ex post are updated with all actual information at the end of each year of the scheme.

Methodology changes

2.10. We set out our final proposals on a number of methodology changes that we considered in our March consultation below.

Update provisions

Position in our previous consultation

2.11. We consulted on provisions for within scheme updates in respect of a number of aspects of the methodology in our March consultation. These provisions were as follows:

- **Mid-scheme update inputs:** We presented our proposals for a sub-set of ex ante inputs that NGET will be able to update to take effect from 1 April 2014 in the previous section.
- **Ability for NGET to apply for methodology changes:** We propose to allow NGET to apply for changes to the methodologies which govern how a scheme target is generated. Any changes would be subject to our approval and would apply on a prospective basis only from 1 April 2014. We would remove the ability for NGET to apply for methodology changes outside of this provision.
- **Corrections to model or model input errors:** Where model or model input errors are identified that result in the agreed methodologies not being correctly applied, we would expect these to be brought to our attention and corrected at the earliest opportunity. **There will be no requirement for NGET to wait until the mid-scheme point to correct these errors.** We would be able to veto any error corrections if we concluded that they had not been applied appropriately.

NGET's views

2.12. NGET agrees with our update provisions and has identified a number of inputs into the model which it considers could be included within the mid scheme update of model inputs. These are discussed in our final proposals.

Industry views

2.13. Those respondents who commented on our proposals for update provisions were supportive. Respondents requested more clarity on the processes in place.

Final proposals

2.14. Our final proposals are to introduce provisions for NGET to update certain model inputs and to apply for methodology changes at the mid-scheme point to take effect on a prospective basis. NGET will be required to notify us of any updates it

makes and the Authority will retain the discretion not to allow these updates if they are considered not to appropriately comply with the update provisions.

2.15. In developing our final proposals in this area we have been mindful of our intention to maintain a two year scheme and to tie the majority of NGET’s incentives to this time period. We have only classed a variable as a mid-scheme update where the risks of retaining a two year incentive are considered to outweigh the benefits.

2.16. Table 2 presents the variables that NGET has suggested for consideration as mid-scheme input updates and our final proposals for which inputs will be considered as mid-scheme updates:

Table 2: Mid-scheme update inputs

Input	Description	Mid-scheme update?	Rationale
Transmission Limits	The limits of the transmission system that NGET input into the model in order to forecast constraint costs.	Yes	NGET’s ability to forecast the system transmission limits reduces with time. A one year time horizon is considered to represent the appropriate balance between risk of windfall gains or losses and the incentives on NGET to accurately forecast and coordinate these limits to the benefit of the market ¹³ .
Demand Level	Update of demand forecast data for 2014/15.	No	NGET is best placed to forecast the levels of demand on the system and there is benefit to the market in setting incentives on NGET to do this as accurately as possible over a longer timeframe.
NDD (Nodal Demand Data)	Update of the allocation of national demand to each node within the model.	No	NGET is best placed to forecast the distribution of demand on the system and there is benefit to the market in setting incentives on NGET to do this as accurately as possible over a longer timeframe.

¹³ This is discussed in more detail in the following section.

Input	Description	Mid-scheme update?	Rationale
Voltage Rules	The rules applied to specific generators to ensure that the modelled costs reflect real system conditions.	Yes	These voltage rules are largely outside of NGET's control and are subject to change at relatively short notice possibly leading to windfall gains or losses. A mid-scheme update will help to minimise this effect.
Network topology / New generation connections	Update of new boundaries and nodes captured within the model (e.g. to capture new offshore wind connections).	No	NGET is best placed in the market to forecast new boundaries and should have information available to it to do this with relative accuracy over a two year timeframe.
Heat rates, variable operation and maintenance costs, start-up and shut-down costs	Update of these inputs to reflect observed generation patterns.	Yes	These variables are outside of NGET's control. While NGET has some ability to forecast based on historic data, changes are possible and can impact on costs against the target.
Reserve/response requirements (positive operating reserve variable)	Update of NGET's reserve and response requirements to reflect system changes e.g. as a result of an increase to largest loss.	No	NGET should have a reasonable forecast available two years ahead of time and has some control. Updates in this area would have wider impact on the models than a change to one input only.

2.17. In terms of applications for revisions to the methodologies, we would expect these to be relatively limited and justified by market developments or changes to future projections which have significantly impacted on the ability of the methodologies to reflect system conditions. The process for NGET to apply for methodology changes would be as follows:

- NGET would need to submit any applications for revisions to the methodologies to Ofgem by 31 December 2013.
- NGET would be required to provide a copy of any proposed revisions to the Authority and to any other party that requested one.
- The Authority would make its determination based on a consideration of the justification for the requested changes and of the resulting balance between the accuracy of the methodologies and the incentives they place on NGET.

- Once the Authority has made its determination it would direct NGET to make any agreed revisions to the methodology to take effect from 1 April 2014.
- NGET would be required to publish any methodology revisions on its website.

2.18. We continue to consider that model or model input errors which lead to the agreed methodologies not being appropriately applied should be treated separately from the mid-scheme update provisions. This will allow these errors to be corrected at the earliest opportunity and will ensure that the information provided to us and industry in respect of the target for NGET's costs is accurate.

2.19. Where it identifies model errors, NGET will be required to provide us with a notice setting out what the error is and how it will be treated. We would expect NGET to then correct this error as proposed unless directed to do otherwise by the Authority.

Transmission limits mid scheme update input

2.20. In order to define a target for the costs of managing system constraints, NGET need to input the physical transmission limits of the network into the constraints model. Under the 2011-13 scheme, NGET input transmission limits for the duration of the scheme at the outset. This meant identifying transmission limits up to two years ahead. On a number of occasions our monitoring has suggested that actual costs have differed from the target as a result of the original inputs being inaccurate. This results in an increase in the risk of windfall gains or losses due to an inaccurate target rather than NGET's actions.

Position in our previous consultation

2.21. In our consultation we set out our proposals to adjust the timescales at which NGET is required to input the transmission limits to one year ahead of time. This would require it to input transmission limits at the start of the scheme and then update these limits for the second scheme year to take effect from 1 April 2014.

2.22. We considered the one year timeframe to strike the appropriate balance between the risk of windfall gains or losses and the incentives on NGET to the benefit of industry. In addition, we recognised that the Network Access Policy (NAP) which has been in development as part of RIIO-T1 has provided a platform for the SO and TOs to improve communication and coordination of outage planning. The NAP envisages sharing information on plans over a time horizon of up to eight years.

NGET's views

2.23. In its consultation response, NGET set out its views that a six week ahead transmission limit input would represent the appropriate balance between the risk upon it and its incentives to forecast system limits. It suggested that this would provide a more accurate reflection of system capability within timescales in which it has tools available to manage constraints.

2.24. As part of subsequent discussion, NGET has proposed moving to year ahead transmission limit inputs in the second year of the scheme while retaining an interim measure with more frequent inputs in the first scheme year. It argues that while the NAP is expected to enhance coordination and result in a year ahead outage program with less churn, the NAP is not yet approved and the processes introduced not yet embedded. Therefore, NGET suggests that outage plans will be influenced by the NAP in time for the 2014-15 scheme year at the earliest and that interim arrangements are needed to reflect this.

Industry views

2.25. One of the two respondents who commented on our proposals for year ahead transmission limit inputs agreed with our proposals. The other suggested that building a year ahead outage plan into the incentive made it important to ensure that tools are available to NGET to provide flexibility for incorporating inevitable changes.

Final proposals

2.26. We have considered responses in reaching our final proposals. We continue to consider year ahead transmission limits to represent the most suitable balance between the level of risk to NGET and the benefits for industry participants.

2.27. We note that by moving to one year ahead transmission limits we are significantly reducing the level of risk for windfall gains or losses resulting from transmission limit inputs. We think it is important that NGET maximises the effort that it puts into forecasting transmission limits as accurately as possible. NGET should be incentivised to use the tools available to it to coordinate with TOs to ensure that the planning and management of outages is as economic as possible from a system balancing, as well as transmission asset perspective.

2.28. While we agree that the NAP is likely to continue to develop and increase the potential for coordination and improved outage planning going forwards, we have recognised that some benefit has already been derived from the coordination experienced as part of the development of the NAP thus far. Further, an incentive for the SO to forecast transmission limits at the year ahead time horizon will compliment the NAP by ensuring that all parties involved have an interest in outage planning and coordination which can continue to improve through the NAP. We note comments made by respondents to our consultation which support these views.

2.29. Thus, the principle of our final proposals is for year ahead transmission limit inputs into the models with these limits taking effect from 1 April 2014. Since its response to our consultation, NGET made us aware that the transmission limit input data which should have been available for 1 April 2013 would not be available until 31 May 2013. We have accepted this delay on the basis that our intention to apply year ahead transmission limits was only formally set out on 6 March 2013 as part of our consultation. Therefore, in practice, transmission limits for the first year of the scheme will be applied from 1 June 2013 (effectively 10 months ahead). The effect of this may have been to limit the incentives on NGET to forecast and coordinate system outages in the period between 1 April and 1 June 2013.

Unplanned outage 'carve-out'

2.30. In its response to our consultation, NGET also raised proposals for unplanned outages, or faults, to be considered separately to planned transmission limits which are incorporated into the model. Rather than considering the costs incurred as a result of these faults against the overall BSIS target, NGET suggested some form of 'carve-out' for these costs. It suggested that this would allow more timely and accurate reflection of faults on the system.

2.31. Subsequently, NGET presented a number of options that could be used to 'carve-out' unplanned outages from the costs incurred against a scheme target:

- 1. Real time fault treatment:** A range of asset fault types would be identified and an average 'return to service time' agreed for each asset type. NGET would then notify Ofgem when a fault occurred and would update the affected transmission limits within the model to reflect this fault for the pre-agreed period of time. Through application of this methodology, NGET suggests that costs for resolving faults could be treated in real time and the incentives for NGET to manage the fault would remain. NGET states that this is its preferred approach towards any 'carve-out' of unplanned outages.
- 2. Ex ante assumed outages in constraints model:** Under this approach, assumptions would be made about unplanned outages on the system based on historic information and engineering judgement. The identified unplanned outages would be input into the constraints model at the start of the scheme within the calculated transmission limits and NGET's actual costs compared against the derived target.
- 3. Fault cost allowance:** An ex ante 'allowance' for the costs of managing faults would be produced at the scheme outset based on historic costs. NGET highlighted the risk that uncertainty regarding the level of costs which may arise could lead to windfall gains or losses against the 'allowance'.
- 4. Income Adjusting Events (IAEs):** IAEs were in place in the previous scheme whereby NGET could apply to Ofgem where an event outside of NGET's control (which could include certain fault outages where these meet the conditions set out in the licence conditions) has led NGET to incur costs which exceed a defined materiality threshold. The application for IAEs is allowed up until three months after the scheme and thus raises concerns with industry because of the uncertainty it provides regarding their BSUoS charges.

Final Proposals

2.32. Our final proposals do not include specific 'carve out' provisions for unplanned outages. Following assessment of the proposed alternatives, we consider a continued provision for IAEs to best protect the interests of consumers.

2.33. Option 1 provides a real time methodology for dealing with unplanned outages. However, the discretionary nature of the approach raises challenges such as

defining an appropriate 'return to service' time for the outage types as well as the resource and expertise that Ofgem would require to validate the outage and outage type. In addition, ring-fencing the costs incurred in managing the unplanned outage from other costs on the system would be very challenging.

2.34. Options 2 and 3 allow for ex ante assumptions to be made regarding the level of unplanned outages that may occur on the system. However, NGET correctly identify the risk of windfall gains or losses due to the inevitable uncertainty in the level of unplanned outages that will arise.

2.35. While we are aware that industry has concerns regarding IAEs, we consider the pre-agreed provisions for applying for costs incurred as a result of faults which meet the IAE definition to represent the most appropriate way to limit the risk to NGET for events which are outside of its control¹⁴. This option presents a tried and tested approach which limits the scope for any windfall gains or losses without the methodology challenges identified with option 1. Our final proposals for IAEs which are targeted at reducing some uncertainty for market players are set out in chapter 3 of this document.

Constraint target discount factor

2.36. The constraints model is used to set a target for the costs of the actions which NGET needs to take to manage network constraints. In doing this, the model assumes that all actions to manage these constraints are taken in the balancing mechanism (BM). In addition to the BM, NGET is able to use other measures to manage these constraints through which it may be able to reduce its overall constraint management costs. These include trades, use of intertrips¹⁵ and the agreement of contracts with generators.

2.37. We consider there to be a certain level of actions outside of the BM which NGET should be taking as 'business as usual' in order to reduce constraint management costs. The methodologies which set the target against which NGET is incentivised should take into account these 'business as usual' actions so that NGET is only rewarded if it goes beyond this and are penalised if they do not meet the level of 'business as usual' cost reductions against the BM that is identified.

2.38. Setting a target in line with 'business as usual' actions, is achieved by applying a discount factor to the outputs of the constraints model such that these actions are taken into account. This discount factor was set at 41% under the 2011-13 scheme meaning that the output of the constraints model is multiplied by a factor of 0.59 to derive a target for constraint management costs.

¹⁴ We note that not all faults would necessarily meet the IAE requirements and that any application would need to be considered against the IAE definitions on its own merits.

¹⁵ Intertrips can be used by NGET to automatically disconnect generation or demand from the transmission system under specific circumstances. See: <http://www.nationalgrid.com/uk/Electricity/Balancing/services/balanceserv/systemsecurity/intertrips/>

Position in our previous consultation

2.39. In our consultation we noted that NGET considered the previous discount factor of 41% to represent an inappropriate level of 'business as usual' cost efficiencies against the BM. We considered the target to be challenging but proposed to retain this level in the absence of sufficient evidence to support the application of a different number.

NGET's views

2.40. NGET continues to argue that a discount factor of 41% is too high and represents an unachievable target in terms of the amount that it can save against taking actions solely in the BM under business as usual. It also notes market developments which it considers may place downwards pressure on BM prices that are submitted by generators. For example, NGET has suggested the introduction of the Transmission Constraint Licence Condition¹⁶ may lead to a normalisation of price submissions into the BM. While this would benefit consumers, NGET argue that the historical savings that have been made through contracts and other actions in the past are less likely to be achievable.

2.41. Since our consultation, NGET has provided us with historical analysis of actions taken in the last two years. This analysis compares the value of NGET's constraint contracting against an assumed cost of resolving the constraint through the BM as would have been the case in the absence of the relevant contract.

2.42. In order to achieve this, NGET's analysis assumed that 100% of the contracted volume would have entered into the BM in the absence of the contract. For example, if NGET had a contract in place constraining a 1000 MW generator to 500 MW, the assumption is that the full 1000 MW would have entered into the BM in the absence of this contract, suggesting a 'contract effectiveness' of 100%. NGET argued that in practice, the contracted volume will not necessarily be 100% effective as contracting decisions are taken on the expectation that they will deliver value against the alternative BM action. NGET suggested there may be periods where the contract delivers little or no benefit. This may arise through less than 100% of the contracted volume actually entering the BM as a result of technical restrictions or fluctuations in the potential profit margins for generation across the contract period. NGET suggested that the actual figure for contract effectiveness would lie somewhere between 75% and 100%.

2.43. For the previous two year scheme, the results of this analysis are as follows:

¹⁶ The Transmission Constraint Licence Condition prohibits generators from obtaining an excessive benefit from electricity generation in relation to a period of transmission constraint. More information can be found at the following link:
<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=228&refer=Markets/WhIMkts/CompendEff>

Table 3: 2011/12 Level of Discount

Assumed effectiveness of contracted volume `contract effectiveness`	100%	75%
Total incurred cost	£214.7m	£214.7m
Estimated alternative cost (incurred BM + avoided BM)	£397.1m	£329.5m
Implied level of discount	45.9%	34.8%

Table 4: 2012/13 Level of Discount

Assumed effectiveness of contracted volume `contract effectiveness`	100%	75%
Total incurred cost	£128.3m	£128.3m
Estimated alternative cost (incurred BM + avoided BM)	£207.3m	£175.6m
Implied level of discount	38.1%	26.9%

2.44. Based on the above, NGET argued that the average level of discount at 75% contract effectiveness should be applied yielding a discount factor of 30.9%.

Industry views

2.45. In responses to our consultation, those industry participants who commented on the discount factor showed broad agreement for continuing to apply a discount factor to reflect business as usual contract savings. Responses did not provide detailed comment on the level of discount factor however, suggesting that Ofgem was better placed to consider the evidence available.

Final proposals

2.46. In addition to the analysis submitted by NGET we have also considered a previous report that we commissioned in developing our final proposals. In developing proposals for a 2011-13 scheme, we commissioned Frontier Economics to produce a report proposing a discount factor that should be applied. In considering the information available to them, Frontier assessed NGET's historic analysis and proposed a discount factor of approximately 31%.

2.47. To develop this conclusion, Frontier compared the contracts that NGET had signed historically against the level of constraint costs that would have been incurred had these contracts not been in place. This allowed them to identify a level of saving that had been made through contracts and could thus be applied to the output of the constraints model as a discount factor.

2.48. Our understanding of the models allowed us to build on Frontier's analysis in order to account for the interactions between the different models that NGET use. We identified that a part of the costs included in Frontier's analysis were for headroom costs which are actually included in the energy models. In order to avoid

double counting of these costs it would be necessary to remove them from the discount factor calculation. Once this step is applied to the analysis, the discount factor which should be applied to the constraints model would be roughly 38%.

2.49. The analysis which NGET has submitted effectively updates Frontier's analysis to reflect contracting which has taken place in the 2011-13 period. We have considered NGET's arguments surrounding the levels of generation that would enter into the BM in the absence of constraint contracts and its views that the actual effectiveness could be between 75 and 100%.

2.50. In practice we consider that the majority of any rationale for the actual contract effectiveness being less than 100% should be factored into the contracts which NGET signs. For example, if a particular generator is unlikely to run at full output in the BM due to its technical capabilities or economics, NGET should factor this into the contract price that it offers. In the absence of evidence to support a particular level of contract effectiveness, we consider it appropriate to assume a level of effectiveness towards the upper end of the range submitted by NGET.

2.51. The discount factor of 38% resulting from Frontier's analysis (once corrected to account for the interactions between the models) is in line with NGET's analysis of a discount factor in the most recent year 2012/13 (based on 100% contract effectiveness). When considered against NGET's analysis averaged over the last two years, a 38% discount factor reflects an assumed contract effectiveness of approximately 94%. In the absence of any evidence to support otherwise, we see no reason to assume that the contract effectiveness would be below this.

2.52. Thus, we consider the corrected analysis performed by Frontier to represent an appropriate benchmark for the level of savings that NGET should be making against the BM as 'business as usual'. Our final proposals are to base a discount factor on the analysis carried out by Frontier along with the updated analysis provided by NGET. We therefore propose to discount the output of the constraint model by a factor of 38%.

Balancing mechanism pseudo prices

2.53. One part of the energy models requires volume weighted average BM prices to be forecast in order to resolve Net Imbalance Volume in the model and calculate a target for actions which NGET takes in the BM. These volume weighted average prices were defined as ex ante variables under the previous 2011-13 scheme. NGET name these ex ante volume weighted average prices, BM 'pseudo' prices.

Position in our previous consultation

2.54. In our previous consultation we noted NGET's views that the methodology should be amended to include BM pseudo prices as an ex post input into the energy model. We set out our proposal to allow this revision given that this would remove a potential source of windfall gain or loss in an area which NGET has relatively limited ability to either forecast or control.

NGET's views

2.55. NGET continues to agree with making BM pseudo prices ex post. It considers that this will remove the potential for windfall gains or losses while having no impact on its incentives to take actions which are the most economic and efficient.

Industry views

2.56. Two responses to our consultation supported proposals for making BM pseudo prices ex post given their views that NGET is not able to control the prices that are available in the BM. One of these respondents did question whether NGET would remain incentivised to take actions outside of the BM that were most economic. Another respondent suggested that the decision should be informed by NGET's historic performance of forecasting BM prices accurately.

Final proposals

2.57. We continue to consider making BM pseudo prices an ex post input to be in the best interests of consumers. Thus our final proposals are to allow this amendment to the input methodology.

2.58. In response to questions raised by industry we continue to consider that NGET is incentivised to take the most economic action whether this is through the BM or through other actions. This is because the overall scheme continues to incentivise NGET to identify the most economic course of action against expected events. Given that the BM prices that are submitted are largely outside of NGET's control, making the input ex post does not affect these incentives but only ensures that the target against which NGET's actions are measured is more reflective of actual events.

2.59. In terms of the accuracy of NGET's historic BM price forecasting, the model into which BM pseudo prices are input has been identified as one of the main sources of error over the 2011-13 scheme. The BM pseudo prices are not only used for this model but feed into other models as part of the Energy model package so that any errors in BM pseudo prices are exacerbated. By making the input ex post, these errors can be removed for the scheme going forwards.

2.60. Ex post BM pseudo prices are considered appropriate at this time for the two year scheme timeframe. However, we are mindful that NGET can have some influence over BM prices in the wider sense, for example by using its central role in the market to influence codes and licences in order to impact on the BM prices that are submitted by market participants. In developing future schemes, which may have a longer term timeframe, we may wish to review the nature of BM pseudo price inputs in order to ensure that the scheme continues to maximise the incentives on NGET to act economically.

Black Start

Position in our previous consultation

2.61. In our consultation we proposed to retain a similar approach to incentivising NGET against the costs that it incurs in procuring black start services as had been used under the previous scheme. Under this approach, an up-front target was set based on a building blocks profile of expected costs.

2.62. We also stated that we would consider the treatment of costs incurred by NGET to identify new providers through feasibility studies and capital contributions for new plant providers.

2.63. We noted the alternative approach which we had previously been considering of developing an eight year scheme based on a forecast of future provider requirements and an expected cost per provider. We stated our intent to continue working with NGET to identify the most suitable approach.

NGET's views

2.64. In its response, NGET presented its view that an eight year scheme continued to be the most suitable approach, even if introduced alongside a two year BSIS. It argued that there would be a greater incentive to innovate and strike a balance between extending contracts and entering into new ones under this approach.

2.65. NGET also argued that if a shorter term incentive aligned to timescales of the BSIS continued to be the preference, there would need to be a review of the treatment of relevant variables as ex ante or ex post. NGET also sought greater clarity on the licence provisions designed to allow funding for costs incurred in procuring new service providers such as feasibility studies and capital contributions, and the mechanism for recovering such costs.

Industry views

2.66. One respondent raised concerns with the approach that was being proposed and with black start service procurement more generally. They suggested that there is a disconnect between the costs incurred by NGET for black start services and the costs which generators incur to be able to provide this service.

Final proposals

2.67. Our final proposals are broadly in line with the position set out in our consultation. We continue to consider a two year black start incentive scheme to represent the most appropriate timescale. We have taken on board the views of NGET in considering the treatment of the variables which make up the cost targets which will be set under the incentive.

2.68. We continue to see merit in the development of a longer term black start incentive in order to provide NGET with a longer term decision making framework in balancing the options available to it. However, we consider that aligning the black start incentive to the time scale of the BSIS represents the most suitable approach at the current time. This will allow us to consider our treatment of black start costs alongside the wider incentive framework when developing a future incentive scheme.

2.69. In addition, we believe that some of the market developments which have led us to develop a two year BSIS may also impact on the providers available to NGET in procuring black start services which strengthens the case for a two year incentive. There is a risk that setting a longer term scheme now could lead to windfall gains or losses in the case of significant market developments over the coming years.

2.70. We have considered the characteristics of each of the key variables involved to define how these are treated to produce a black start target in each year of the scheme. Consideration of each of the historic costs and expected trends for black start allows us to define an overall target for those variables which are included in an ex ante target. The following table summarises our proposals:

Cost area	Description	Treatment	2013-14 target	2014-15 target
Availability fees	Payments to providers for being available to provide a service	Ex ante	£21.05 million	£21.45 million
Testing	Testing to ensure that the plant can provide a black start service if called upon	Ex ante		
Capital contributions for contract re-negotiations	Contributions provided by NGET for existing providers to invest in refurbishments at contract re-negotiation stage	Ex ante		
Warming	Payments to providers to ensure they are available to provide a service when they would otherwise not be	Mid-scheme update		
New provider availability fees	Availability fees for new providers who are not currently providing a service but sign a contract to start providing a service within the scheme period	Mid-scheme update		
Capital contributions for new providers	Contributions provided by NGET to new providers who sign a new contract within scheme to invest in the required capital	Mid-scheme update		
Feasibility studies	Costs of feasibility studies to identify potential providers	Ex post	NA	NA
Total cost target			£21.05 million	£21.45 million

2.71. We have identified variables as ex ante where NGET is considered to have sufficient control and ability to forecast costs for the two year scheme period and where there is felt to be benefit in ensuring that NGET has fixed incentives at the start of the scheme.

2.72. We consider there to be benefit in incentivising NGET to minimise the costs that it incurs for warming requirements and for the availability fees it agrees with new providers. We propose that these items should be built into the ex ante target rather than being treated as pass-through items ex post. However, we propose to include these items within the mid-scheme update provisions given the uncertainty in relation to the level of costs which may be impacted significantly by external factors.

2.73. In the case of warming, the costs that NGET is required to incur are heavily impacted by the economics of the fuel mix. While coal remains more economic than gas for generation, these costs are expected to remain low. Our own analysis does not forecast the economics of coal and gas generation to suggest a switch in the primary fuel until around quarter two of 2016. However, fuel economics can be unpredictable and a move from coal to gas as the dominant fuel may introduce significantly greater costs for warming plant. Therefore, we will provide NGET with the opportunity to justify an amendment to the cost target in the second scheme year to account for an increase in the expected costs of warming if it can demonstrate that this has been, or is expected to be, the case.

2.74. There is some uncertainty surrounding the requirement and potential for the agreement of contracts and requirement for capital contributions to new providers over the course of the scheme. While we believe that NGET should be incentivised to keep costs as low as possible in this area, we do not want to limit its ability to sign contracts with new providers if these are considered to be economic and long term value for consumers. We will therefore provide NGET with an opportunity to apply for changes to the cost target for the second year of the scheme to account for economic contracts that it expects to sign with new providers in the second scheme year that it can demonstrate will provide long term value for consumers.

2.75. The amount of feasibility studies which NGET expects to carry out is relatively dynamic and is expected to increase as NGET looks to sign contracts with new providers. Given the relatively small costs included, we consider ex post funding for the costs which NGET has incurred in this area to represent the most appropriate method of allowing for these costs.

2.76. As part of all proposed revisions to mid-scheme update variables, and as part of ex post applications for the costs of feasibility studies, we will require NGET to justify its position with evidence to demonstrate that the costs incurred are in the best interests of the consumer and will provide long term value beyond the BSIS period.

3. Parameters of a Balancing Services Incentive Scheme

Chapter Summary

This section sets out our final proposals for the parameters of a balancing services incentive scheme.

Scheme length and structure

Position in our previous consultation

3.1. In our consultation we set out our proposals to introduce a two year incentive scheme to cover the period from 1 April 2013 to 31 March 2015 as an interim arrangement. This length of scheme was considered appropriate at this time given the level of uncertainty over a number of future market developments and the impact that they could have on the SO.

3.2. We proposed to follow a 'two-by-one' year approach in which consideration of NGET's performance against the scheme target would be evaluated in each year of the scheme separately. This was to reduce the risk that significant cost over-runs or under-runs in the first year of the scheme could reduce the incentives on NGET in the second scheme year.

NGET's views

3.3. NGET agreed with our proposals for a 'two-by-one' year scheme.

Industry views

3.4. Two of the three industry participants who commented on our 'two-by-one' year scheme approach showed support for our proposals and agreed with the rationale. One respondent mentioned that they would like to see longer term incentive schemes as they consider a two year scheme to limit the longer term benefits to consumers from taking a longer term approach towards infrastructure investment informed by system operation requirements.

Final proposals

3.5. We continue to consider a 'two-by-one' year scheme to strike the correct balance between ensuring that the SO has some incentive to consider longer term cost impacts of its actions and allowing us to review our approach towards incentivising the SO in the light of greater certainty regarding market developments. We remain mindful of the potential benefits of a longer term incentive framework,

possibly tied to the RIIO-T1 price control. We will continue to consider the potential for, and benefits of a longer term approach in developing future incentive schemes.

Dead-band

3.6. A dead-band of £5 million around the target costs was in place in the previous scheme. In the case that the costs incurred by NGET fall within this dead-band then the costs would not be subject to incentives but would be passed through directly to BSUoS charges.

3.7. In our consultation, we proposed not to include a dead-band given the reduction in incentives on NGET that would result close to the target. The only response to our consultation supported our approach. We continue not to include a dead-band in our final proposals.

Sharing factor and cap and floor

3.8. The sharing factor represents an allocation of risk between NGET and consumers by apportioning any potential under or overspend relative to the cost target between NGET and consumers. This sharing factor only applies within the cap and floor bounds. Beyond these bounds, consumers take on the full risk and potential return of under or overspend. Thus, a high sharing factor and cap and floor represent a high level of risk and potential return to NGET while a low sharing factor and cap and floor increases the level of risk and potential return for consumers.

Position in our previous consultation

3.9. In our consultation we proposed a sharing factor of 25% and a cap and floor of ±£25 million that would apply separately to each year of the scheme. We noted that while the sharing factor would not align with the 48% set under RIIO-T1, an increase in the sharing factor was not considered to be appropriate in the absence of more historic evidence to demonstrate the accuracy of the models when applied to a two year incentive scheme.

NGET's views

3.10. In its response, NGET agreed with our sharing factor and the application of a cap and floor over each year of the scheme separately.

Industry views

3.11. The only respondent who presented a view agreed with the application of a 25% sharing factor.

Final proposals

3.12. Noting the broad agreement with our approach, our final proposals are for a 25% sharing factor and for a cap and floor of \pm £25 million applied to each year of the scheme.

3.13. We note that a sharing factor which is not aligned between the SO and TOs raises the potential for the balance between considerations of asset investment and the costs of balancing the system to be non-optimal. In developing future schemes, and as we gain further historic evidence of the performance of the models as applied to a scheme, we will review the appropriate level of sharing factor and cap and floor.

Income adjusting event provisions

3.14. Under previous schemes, provisions were in place for NGET or any other party to apply for income adjusting events (IAEs). Under IAEs costs could be discounted from scheme performance where it was considered that events significantly beyond NGET's control and ability to predict had increased or decreased its incurred costs by more than the materiality threshold which was set at £2 million.

Position in our previous consultation

3.15. In our consultation we noted that IAE provisions were unpopular with industry participants. This is due to the uncertainty that IAE provisions raise for charges to be retrospectively applied by NGET to recover resulting changes to performance. We set out our view that IAEs should be considered in the context of the risk/reward profile of the overall incentives.

3.16. We asked industry for their views on whether aspects of our proposed scheme such as the 'two-by-one' year approach coupled with the mid-scheme update provisions may impact on the requirement for IAE provisions. It was suggested that these proposals would reduce the level of risk on the SO and may merit the removal of IAE provisions. We proposed that, if IAE provisions were retained, the materiality threshold should be raised to £10 million.

NGET's views

3.17. In its response, NGET argued that the mid-scheme update provisions and other risk reducing aspects of the proposed scheme were not sufficient to remove the provisions for IAEs altogether. It considered that IAEs continue to be a critical factor of the scheme in ensuring the level of risk was appropriate in the context of uncontrollable events. NGET's response suggested that the possibility for raising the materiality threshold provided a sensible alternative to complete removal.

Industry views

3.18. Three respondents provided views in support of minimising the risk to the industry of IAEs being raised. One respondent suggested that IAEs had historically presented the greatest risk for market participants. Two other respondents agreed that there may be a potential case for the removal of IAEs given policy in other areas such as the 'two-by-one' year approach and mid-scheme update provisions.

Final proposals

3.19. We continue to believe that the level of risk on the SO has reduced as a result of our proposals in a number of areas. This includes our proposals for a 'two by one' year structure and mid-scheme update provisions as well as treatment of incentives such as transmission losses, transmission limit inputs and pseudo BM prices.

3.20. Given the adjusted risk and reward profile compared to the previous scheme, we continue to consider a reduction in the scope of application for IAEs to be appropriate. However, we consider that removal of IAEs altogether would be one step too far at the current time, particularly given uncertainty regarding market developments in the next two years.

3.21. Our final proposals are to raise the materiality threshold for the application of IAEs to £10 million. We also propose to amend the wording of the licences slightly to provide further clarity as to what may be considered as an IAE.

3.22. While we do not consider it appropriate to remove the IAE provisions completely at this stage, we are mindful of some continuing risk which remains with industry. We would only expect IAEs to be raised for significant events that fall under the definition of force majeure or that are unforeseen and have consequences beyond the reasonable control of NGET. As a result, we would expect the impact of IAEs on BSUoS charges to be relatively limited¹⁷.

¹⁷ We note that the financial impacts of an IAE would not be passed directly through to BSUoS charges but would impact on NGET's performance against the target and thus would be subject to the agreed sharing factor. As an example, with our proposed 25% sharing factor, an IAE approved by GEMA for £10 million would result in a £2.5 million change to the total costs passed through to BSUoS charges. This represents less than 0.5 per cent of NGET's average historic balancing costs over the previous scheme period.

4. Additional Incentives

Chapter Summary

We set out our final proposals for incentives in addition to BSIS in this chapter.

SO Innovation Roll-Out Mechanism

Position in our previous consultation

4.1. In our consultation, we noted our previous proposals for an 'efficiency in system operations reward scheme' that we had included alongside our cost disallowance methodology. These previous proposals had been targeted at making sure that the SO would be incentivised to go 'beyond business as usual' and 'make a difference in the way in which it operates the system'.

4.2. Despite our proposals to develop a BSIS in March, we saw merit in retaining some aspects of this reward scheme to encourage innovation from the SO. We noted that the scope of a mechanism may need to evolve to reflect the change in context from a cost disallowance approach to a BSIS. We set out our intention to target projects which could provide benefits beyond the current scheme period and work towards behaviours which industry may look for NGET to demonstrate where it is not currently incentivised to do so.

4.3. We referenced innovation mechanisms which had been introduced through RIIO-T1 under which the SO could already apply for funding for innovative projects. In working up proposals for a mechanism to encourage innovation by the SO we said that we would carefully consider interactions with these other mechanisms. This would ensure that our proposals for an innovation mechanism would meet any gaps in innovation funding and avoid 'double counting'. We noted that this may require the focus of the innovation mechanism to be on the roll-out of more proven technologies rather than the earlier stages of innovation¹⁸.

4.4. We proposed a maximum overall reward under the mechanism of £10 million for each year of the scheme with a sharing factor of 25% on any reward. We would place the onus of proof on NGET to demonstrate that the project would provide benefits to consumers beyond the existing scheme period and would not be sufficiently incentivised under our proposed BSIS to encourage project delivery.

¹⁸ These earlier stages are covered by funding mechanisms under RIIO-T1 such as the Network Innovation Competition (NIC) and the Network Innovation Allowance (NIA). More information on the NIC and the NIA can be found on our website: <http://www.ofgem.gov.uk/Networks/nic/Pages/nic.aspx>

NGET's views

4.5. In its response, NGET supported our proposals for a mechanism to encourage innovation which might have benefits beyond the BSIS period. NGET proposed that the scheme should be put in place for an eight year time period aligned with RIIO-T1 given the timescales associated with undertaking innovation projects.

Industry views

4.6. Respondents offered broad support for some form of innovation mechanism to sit alongside a BSIS. They agreed with the focus on introducing longer term improvements in the balancing activities carried out by NGET beyond a two year horizon. One respondent highlighted the importance of ensuring that the innovation mechanism and the BSIS did not both provide rewards for the same actions.

Final Proposals

4.7. Given the broad support for encouraging innovation alongside the incentives put in place under the BSIS, we continue to include an innovation mechanism. Our final proposals are aligned with the objectives of encouraging roll-out of innovation included in our consultation but are different in design. Rather than a reward mechanism, our final proposals are for a mechanism which can allow the SO to seek up front funding for the costs of rolling out innovative projects. We are calling this the 'System Operator Innovation Roll-Out Mechanism' (SO-IRM).

4.8. We see potential benefit in developing a longer term innovation mechanism. However, we consider a two year time frame tied to the overall incentive framework to represent the most appropriate design of an innovation mechanism at the current time before our enduring approach towards a wider incentive scheme is developed. We consider the SO-IRM to be an interim measure which is based on a similar funding mechanism introduced for the TOs under RIIO-T1. Looking ahead, we are keen to fully engage industry in the development of an innovation mechanism that can work alongside an enduring SO incentive approach before committing to a longer term innovation mechanism.

4.9. To develop this interim mechanism we have continued to assess the gaps in the innovation mechanisms available to NGET. The Network Innovation Competition (NIC) and Network Innovation Allowance (NIA) allow NGET to seek funding for projects which are in the early phases of development. However, the SO is not able to apply for funding for the roll-out phases of innovation which the TOs can access under the Innovation Roll-out Mechanism (IRM) included in RIIO-T1.

4.10. In order to meet the innovation roll-out gap, and to maintain consistency with another mechanism which has similar objectives to our own, we have developed a similar mechanism to the IRM. Under our SO-IRM, the SO is able to make up to three applications for a total of £10 million of up-front funding to cover costs of rolling out innovation that would be incurred in the second scheme year from 1 April 2014. In order to be successful in its application for funding, NGET will be required to

demonstrate that the roll-out of the innovation will provide long term value for consumers. It will also have to show that the expected returns of rolling out the innovation within the BSIS period are not sufficient to cover the roll-out costs.

4.11. We previously consulted on providing up to £10 million to NGET in each year of the scheme under an innovation mechanism. Our final proposals are for £10 million of funding to be available in only the second scheme year. This will allow for a process in which NGET can make applications for funding by the end of the first scheme year for costs it will incur in the second. The level of funding is considered appropriate to enable NGET to identify key innovation projects where some additional roll-out funding may be necessary to make the project financeable within the scheme period. As the mechanism will be used to fund roll-out of projects rather than allow NGET to retain a share of the benefits of these projects, no sharing factor will be applied to the funding provided to NGET under any application.

4.12. We consider the SO-IRM to present an important step towards the incentives for the SO to innovate that we, and industry, are looking to introduce. The mechanism provides a means of funding that has not previously existed in an area where the two year time frame of the BSIS incentives may otherwise limit the roll-out of innovation. This will compliment other funding mechanisms and allow NGET to look beyond the actions it takes within a two year scheme to consider roll-out of innovation that may provide longer term cost efficiencies in the interests of industry and consumers.

4.13. However, we are mindful of possible shortcomings of the SO-IRM such as the limited financial upside for NGET given that this is a funding mechanism to cover costs rather than a mechanism which can provide any reward. Continuing to build on the developments made in this area by thinking about the best way to encourage more innovative and long term thinking is likely to be an important objective for us in developing future schemes. For example, we see potential benefit in NGET's proposals for an innovation mechanism with a longer term timeframe if this would work alongside an enduring approach towards SO incentives.

4.14. Going forward we expect to work closely with industry to design an innovation mechanism that can compliment future incentive schemes and ensure that NGET has an appropriate framework to encourage delivery of the desired level of innovation.

Wind Generation Forecasting Incentive

Position in our previous consultation

4.15. In our consultation we set out our proposals to continue to develop a financial incentive on the performance of the SO with regards to its level of accuracy in forecasting the levels of wind generation on the system at the day ahead stage. We also included proposals to introduce a licence obligation for NGET to publish a further day ahead forecast. This forecast would be additional to that on which the financial incentive would be based.

4.16. We set out our proposed scheme parameters and noted the views of NGET in response to previous consultations which disagreed with how these parameters would be applied. In particular, NGET argued that the proposals for a cap and floor were not symmetric as the cap was not attainable (save for with the benefit of luck) while the floor represented a realistic (if rarely hit) value.

NGET's views

4.17. In its response, NGET continued to support the introduction of a financial incentive on its wind generation forecasting accuracy in principle. However, it repeated previous arguments that the cap and floor should represent values which could be achieved more realistically. NGET also stressed the exponential increase in costs in order to attain a greater level of forecast accuracy and a ceiling of forecasting performance which it suggested to be around 3%.

4.18. Continued discussion with NGET has allowed us to understand its views more fully. NGET submitted the following figure to us to demonstrate its position:

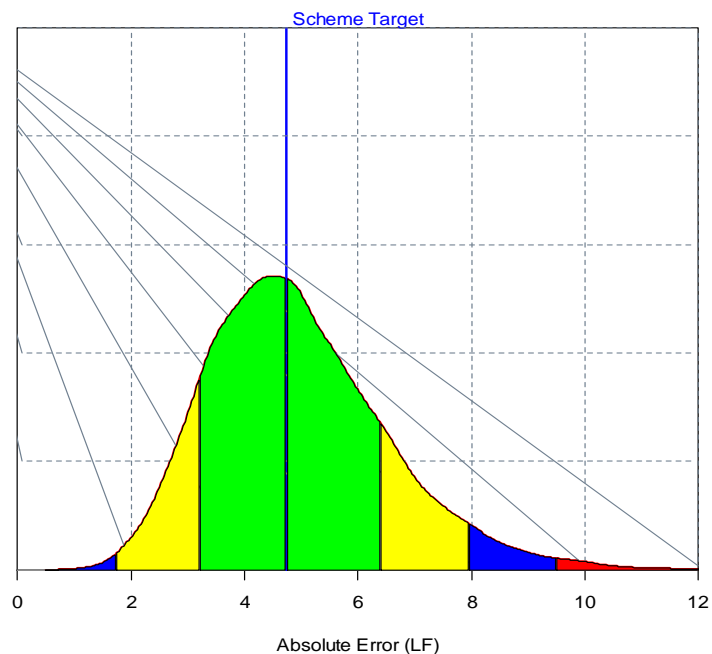


Figure 1: Distribution of wind generation forecast error

In this figure:

- the forecast error probability distribution is based on modelled estimates of performance in summer 2013 (1 April to 30 September);
- the horizontal axis represents the level of absolute error in per cent;

- the vertical axis represents the probability of achieving that level of error simulated from model runs;
- the thick blue line represents our proposed target for the summer period in 2013 (4.75%);
- each of the coloured strips is of equal width, and represents forecast error bands of 1.5%, centred around the target error. For example, the green area represents accuracy of $\pm 1.5\%$ from the target; and
- thus, the difference between the areas of each of the equivalent coloured bands to the left of the target as opposed to the right gives a rough approximation of NGET's expected return under the incentive.

4.19. After mapping these results to identify an expected income distribution over the summer period, NGET's analysis suggests a mean loss of just under £10,000 per month (compared to a maximum gain or loss of £250,000). NGET concluded from this analysis that the target was well placed, however the cap and floor needed to be narrowed to account for the skewed distribution of mean absolute error (ie the more pronounced blue and red areas to the right of the figure than to the left).

4.20. Recently, NGET has suggested that it should be incentivised to forecast the level of wind generation that would be on the system in the absence of any actions it takes. It therefore suggests that actions which impact on the level of wind generation on the system (for example as a result of curtailing levels of wind generation to manage constraints) should be discounted from the actual level of wind generation against which the forecast is compared.

Industry views

4.21. Those respondents who gave views on the wind generation forecasting incentive supported our proposal as they believed NGET to be best placed to provide a forecast of the levels of wind generation to the market.

Final proposals

4.22. Given the broad support for a financial incentive in this area we set out our final proposals for a wind generation forecasting incentive. We continue to consider the parameters which we set out in our consultation to represent the most suitable for maximising the incentives on NGET. These proposals are believed to represent the appropriate balance between risk and reward and ensure that NGET is incentivised to improve its forecast rather than being rewarded for maintaining the existing level of accuracy.

4.23. We have carefully considered the further information provided by NGET in coming to this conclusion. We agree with NGET's analysis in relation to the skewed distribution of wind generation forecasting error. Indeed, we consider that we have taken this into account in setting our proposed parameters.

4.24. We identify two options for setting parameters of a wind generation forecasting incentive to account for the skewed distribution of forecasting error:

- Set a target aligned to the desired target level of error and set a narrow cap and floor to minimise the impact of the skewed distribution at the extremities. This is the option which NGET continues to propose.
- Maintain a wide cap and floor and reflect the skewed distribution by shifting the target to ensure the desired expected income distribution. This is the approach we continue to include as part of our final proposals.

4.25. As can be seen from NGET's analysis in figure 1, each of the coloured areas at the extremities (yellow, blue and red) are larger to the right of the target than to the left representing an expected loss for these error ranges. However, crucially, the green area to the left of the target is larger than that to the right representing an expected return in this error range. In considering this impact it is important to highlight that the level of error within the green areas have a significantly higher probability associated than those in the yellow, blue and red areas. Thus, this area represents the error range in which we would expect to find NGET most often.

4.26. If the cap and floor were narrowed relative to the parameters set out in our consultation, the target would need to be increased in order to maintain the same level of expected return. Our final proposals are to retain a wide cap and floor as this maximises the error distribution under which NGET will continue to be incentivised. Narrowing the cap and floor raises the risk that there will be a lack of incentives on NGET if they hit certain accuracy levels in the scheme period. Given the relatively low magnitude of possible windfall loss or gain under the incentive (an absolute maximum of \pm £3 million per annum), reducing risk through applying a narrow cap and floor is not considered beneficial. Rather than reflecting the skewed distribution of mean average error through narrowing the cap and floor, we have decided to achieve this through the location of the target that we have set. As can be seen in figure 1, this is to the right of the most probable level of error which NGET faces.

4.27. NGET's analysis of the expected level of return supports the level of incentive we are looking to achieve. Our own analysis suggests that an average loss per month based on historic performance is roughly £10,000 per month as identified by NGET. This small expected loss relevant to the size of the incentive is considered appropriate for ensuring that NGET is rewarded for improving its forecasting performance rather than continuing to achieve the same level that it has historically.

4.28. We note NGET's views that greater levels of accuracy require additional funding, particularly with challenges such as growing levels of offshore wind which is currently more difficult to forecast than onshore wind. NGET suggests that this should impact on the parameters of the scheme. In response to this, we highlight the funding available to NGET under its internal cost incentive to improve its forecasting performance. We also repeat our views that improved wind generation forecasting has wider benefits to the SO in other areas of its balancing services activities. This should therefore be taken into account by NGET in considering the benefits of incurring additional costs to improve its forecasting accuracy.

4.29. As part of the development of future schemes, we see benefit in continuing to consider how NGET’s wind generation forecast and the target are compared. At the current time, and without being able to consult on the relative merits with stakeholders, we do not propose to adopt NGET’s suggestion of discounting the impact of any actions taken by NGET on the level of wind generation when comparing actual wind generation output against the original forecast for the two year incentive that we propose to introduce. In developing future wind generation forecasting incentives, and as the levels of wind generation capacity on the system increase, we will take the opportunity to consider how the target is compared against actual levels of wind generation.

4.30. Our key parameters of the wind generation forecast incentive are as follows:

- Accuracy target based on the mean average error of the day-ahead forecast of wind output that NGET produces each day at 5 p.m.

Year	Winter target	Summer target
2013/14	6.25%	4.75%
2014/15	6.00%	4.50%

- A maximum return of £250,000 at 0% error. A maximum loss of £250,000 at double the accuracy target.

4.31. In addition to the financial incentive, we will include in the licences a requirement for NGET to publish a second day-ahead forecast at 5 a.m. We will consider increasing the frequency at which NGET publishes day-ahead wind generation forecasts as part of future incentive schemes.

Transmission Losses Reputational Incentive

Position in our previous consultation

4.32. In our consultation we set out our proposals to remove the financial incentive on the SO with respect to the level of transmission losses on the system. Given the limited control of the SO and its difficulty in forecasting the level of transmission losses we proposed to replace this with a reporting requirement on NGET. NGET will be required to report on actions it takes in which it considers the impact on transmission losses and on system transmission losses more generally.

4.33. We considered that removing the financial incentive would reduce the risk of windfall gains or losses as a result of market developments beyond the control of NGET. These market developments could impact on the level of transmission losses and thus on NGET’s performance against the incentives as well as BSUoS charges.

NGET's views

4.34. NGET continues to agree with replacing the financial incentive on transmission losses with a reputational incentive. It agrees that this will remove a potential area of windfall gain or loss.

Industry views

4.35. Industry respondents were also in agreement with removing the financial incentive and replacing it with a reputational one. One respondent questioned how the reputational incentive would work in practice.

Final proposals

4.36. Our final proposals are broadly in line with our March consultation. We intend to replace the financial incentive on NGET with a reputational reporting requirement.

4.37. Given its position at the centre of the market, under our reporting requirement we will require NGET to publish information regarding the actions that it takes and their impact on transmission losses. We will also require NGET to report on the level of transmission losses and on the expected impacts of market developments on transmission losses going forwards.

Model and Methodology Development Licence Conditions

Position in our previous consultation

4.38. In our consultation we set out our proposals to retain a licence condition on NGET to continue to develop models for the purposes of providing forecasts of its costs of carrying out its balancing services activities in future years.

4.39. We highlighted a number of market developments which will impact on the ability of the models to forecast costs. These market developments are likely to require reviews of the models to ensure they are fit for purpose and may require further model development such as to the internal structures and relationships which are used. Indeed, new models may need to be developed and we would expect NGET to consider whether this is the case.

4.40. In our consultation we also outlined a focus on stakeholder engagement and involvement in developing future models. We sought to build on the greater understanding of the models which has recently been provided by NGET in order to include stakeholders in the model development process.

4.41. We suggested that NGET would be required to provide regular updates to industry regarding the model development process and should seek the views of stakeholders on model developments at key stages.

NGET's views

4.42. NGET agree that continuing model development is necessary in order to adapt to market changes. More recently, NGET has identified the benefits of greater stakeholder engagement on the models and has said that it will be proactively continuing to build on this as part of the development of future models.

Industry views

4.43. The only respondent who provided a view was supportive of including a licence condition on NGET to continue to develop its models.

Final proposals

4.44. We continue to include a model development licence condition as part of our final proposals. While we consider that the accuracy of the models has improved to the extent that they provide us with confidence that they are sufficiently robust for an interim two year scheme, we continue to consider there to be a need to review the nature of the models for enduring use. In particular, the models will need to adapt to reflect market developments over coming years and will need to forecast over a longer time horizon, potentially coinciding with a longer term scheme.

4.45. We have been considering whether it is appropriate to set out a scheme of work which the SO should follow in reviewing and developing its models. A similar approach was adopted for the model development licence condition which was applied as part of the 2011-13 scheme.

4.46. We propose not to set out a defined scheme of work but instead include a number of objectives which we expect the SO to work towards. We are adopting this approach as we believe that NGET is best placed to identify the steps it should take in developing the models. However, we consider that a framework is needed to ensure that the models meet requirements for forecasting balancing services activity costs and can be used for future incentive schemes. The objectives which we have set out under the model development licence condition are as follows:

- developing forecasts of the target costs of balancing the system with a forward projection of eight years;
- ensuring that the models remain suitable for forecasting the costs of balancing the system in the face of upcoming market developments;
- ensuring the models attain optimum performance in relation to NGET's balancing services activities; and
- enabling interested parties to develop a greater understanding of the projected level of future balancing services costs.

4.47. We will require NGET to engage with stakeholders in the following ways:

- **Regular updates on progress:** We will require NGET to provide updates on progress towards meeting the objectives and on planned model developments at fora such as the Operational Forum.
- **Engagement and consultation with industry:** We will require NGET to engage with industry and assess their views on key aspects of model development. Where considered beneficial, the SO will be expected to formally consult industry. For example, this could include engagement with industry to develop an understanding of the impacts that market developments may have on the requirements of future models.

4.48. In addition to the licence condition requiring development of enduring models, we consider that many of the same challenges will require the methodologies used for developing a target under future schemes to be reviewed. We have also introduced a licence condition requiring NGET to develop methodologies which meet a number of similar objectives to that required of the models.

Balancing Services Use of System Charge Forecasting Incentive

Position in our previous consultation

4.49. In our consultation we referenced our previous proposals to introduce a financial incentive on the accuracy of NGET's balancing services use of system (BSUoS) charge forecasting. We set out our view that such an incentive was not aligned with proposals to introduce a BSIS and proposed not to introduce a BSUoS forecasting incentive.

NGET's views

4.50. NGET agreed with our proposals not to introduce a BSUoS forecasting incentive. It highlighted code modification CMP 208 which required more frequent BSUoS forecasting information to be provided to the market.

Industry views

4.51. Those respondents who commented agreed with our proposals not to include a BSUoS forecasting incentive given proposals to introduce a BSIS.

Final proposals

4.52. Our final proposals are not to introduce a BSUoS forecasting incentive.

Appendices

Appendix	Name of Appendix	Page Number
1	Consultation Response and Questions	47
2	Notice under Section 11A of the Electricity Act 1989	48
3	Glossary	49
4	Feedback Questionnaire	56

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 question which we have set out at the beginning of chapter 1 of this document:

Chapter 1

Question 1: Do the draft licence conditions published alongside this document appropriately reflect our final proposals?

1.2. Responses should be received by 28 June 2013 and should be sent to:

- Lewis Heather
- Electricity System Operator Incentives
- Wholesale Markets, Ofgem, 9 Millbank, SW1P 3GE
- 020 7901 7362
- soincentive@ofgem.gov.uk

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

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

1.5. Next steps: Having considered the responses to this consultation, Ofgem intends to direct the modification to NGET's electricity transporter licence to be implemented in September. Any questions on this document should, in the first instance, be directed to:

- Lewis Heather
- Electricity System Operator Incentives
- Wholesale Markets, Ofgem, 9 Millbank, SW1P 3GE
- 020 7901 7362
- soincentive@ofgem.gov.uk

Appendix 2 – Notice under Section 11A of the Electricity Act 1989

Please see following link:

<http://www.ofgem.gov.uk/Markets/WhIMkts/EffSystemOps/SystOpIncent/Documents/1/Electricity%20SO%20incentives%202013%20section%2011A%20notice.pdf>

Appendix 3 - 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').

Carbon footprint

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

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 (DSR)

The reduction of customer energy usage at times of peak demand 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

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.

I

Income adjusting event (IAE)

An unforeseen event has resulted in unexpected costs or savings of greater than a set limit, known as the materiality threshold.

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.

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)

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.

Network charges

These are charges set for the use of network services.

O

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 SO is expected to deliver.

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 (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.

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.

Appendix 4 - Feedback Questionnaire

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

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

1.2. Please send your comments to:

Andrew MacFaul
Consultation Co-ordinator
Ofgem
9 Millbank
London
SW1P 3GE
andrew.macfaul@ofgem.gov.uk