

Electricity System Operator Incentives: consultation on a scheme for 2013

Consultation

Reference: 29/13
Publication date: 6 March 2013
Response deadline: 5 April 2013

Contact: Lewis Heather
Team: Wholesale Markets
Tel: 020 7901 7362
Email: lewis.heather@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.

In this document we set out for consultation our proposals for an incentive scheme on the electricity SO. This scheme will incentivise the SO to minimise the system balancing costs that it incurs thus protecting the interests of consumers.

We also propose incentives on the SO to improve its performance in specific areas such as the information that it provides to the market and its modelling capability.

After considering responses to this consultation, and subject to receiving further evidence to show that the models are working, we expect to implement a scheme broadly along the lines set out in this consultation later this year.

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 as it is responsible for balancing the electricity system on a continuous basis ensuring that generation can continue to match demand. To do this, NGET buys and sells energy and procures associated balancing services. It also provides information to market participants such as forecasts of electricity demand.

Ofgem regulates the actions of the SO to ensure that it is encouraged to act economically and efficiently in order 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 financial incentives. This consultation sets out proposals for the key characteristics of a financial incentive scheme to cover the period from 1 April 2013 to 31 March 2015.

Associated documents

- 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>
- System Operator incentive schemes from 2013 initial proposals: Supplementary appendices. 27 July 2012:
<http://www.ofgem.gov.uk/Markets/WhIMkts/EffSystemOps/SystOpIncent/Documents1/Appendices%20SO%202013.pdf>
- System Operator incentive schemes from 2013: principles and policy, 31 January 2012, Ref 12/12:
<http://www.ofgem.gov.uk/Markets/WhIMkts/EffSystemOps/SystOpIncent/Documents1/SO%202013%20Principles.pdf>
- System Operator incentive schemes from 2013, 14 June 2011, Ref 77/11:
<http://www.ofgem.gov.uk/Markets/WhIMkts/EffSystemOps/SystOpIncent/Documents1/SO%20incentives%20from%20April%202013%20Initial%20Views%20Consultation.pdf>

Contents

Executive Summary	4
1. A Balancing Services Incentive Scheme for 2013	6
System Operator Incentives	6
Recent challenges with a target based scheme	6
A Balancing Services Incentive Scheme for 2013	9
2. Setting the Target	13
How a scheme target is generated	13
Requests for further methodology changes	14
3. Parameters of a Balancing Services Incentive Scheme	20
Scheme length	20
Structure of the two year scheme	22
Setting the target	23
Dead-band	25
Sharing factor	26
Income adjusting events	27
Timing of scheme application	28
4. Additional Incentives	30
Discretionary Reward	30
Wind Generation Forecasting Incentive	32
Transmission Losses Reputational Incentive	34
Model Development Licence Condition	36
Balancing Services Use of System Charge Forecasting Incentive	38
Black Start	39
Appendices	41
Appendix 1 - Consultation Response and Questions	42
Appendix 2 – Summary of System Operator Incentive Scheme Key Characteristics	44
Appendix 3 – Summary of Previous Consultation Responses	46
Appendix 4 - Glossary	49
Appendix 4 - Feedback Questionnaire	56

Executive Summary

The current electricity system operator (SO) incentive scheme is due to expire on 31 March 2013. In this consultation document we set out our proposals for a new incentive scheme to cover the period from 1 April 2013 to 31 March 2015. We propose to introduce a target based incentive scheme broadly similar to the 2011-13 scheme which is currently in place. We also propose some additional incentives which would focus on specific outputs delivered by the SO.

SO incentives in recent years

Since 2001, we have incentivised the SO, National Grid Electricity Transmission (NGET), to operate efficiently through short term, target based schemes. We set a cost target for NGET's balancing actions and allow it to retain a share of the savings or carry a proportion of the over-runs that it makes against this.

Recent market developments (such as increasing intermittent generation) have made fixing a scheme target increasingly complex. This has led to the SO making or losing the maximum financial amount possible in every scheme year since 2008. Under the 2011-13 scheme which is currently in place, we required NGET to develop models and a methodology which could identify a more robust target. However, we have continued to see significant differences between the cost target and out-turn costs under the current scheme. In addition to NGET's actions in balancing the system, these differences have resulted from variables outside of its control.

Our cost disallowance proposals

In July and October 2012, we consulted on a cost disallowance scheme. We developed this alternative approach to a target based scheme due to a lack of confidence with the ability of the models and methodology to generate a robust target. The cost disallowance approach was designed as an interim measure before greater confidence in the target setting approach could be developed.

Under a cost disallowance scheme, we could open a review of costs incurred by NGET if these costs rose above cost thresholds that would be introduced under the scheme. Following a formal investigation, the Authority could direct to disallow the pass-through of any costs to consumers that it concluded were not economic or efficient.

Recent developments and our proposals

We are now proposing to introduce a target based scheme for 2013-15 for the following reasons:

1. We continue to consider the up front, clearly defined incentives provided by target based scheme to be preferable to the discretionary nature of a cost disallowance approach. For example, after the event cost disallowance could raise uncertainty for NGET and other industry participants.
2. NGET has submitted evidence that the models and methodology which would underpin a target based scheme have been improved. Changes to the input methodology made in September 2012 have removed some of the potential for factors outside of its control to influence its performance against the target. In addition, substantial developments to the models have been

demonstrated and results from testing so far appear positive.

3. Stakeholders have stated a clear preference for a target based scheme over a cost disallowance approach so long as this could be supported with sufficient confidence in the target setting approach. A modelling workshop held by NGET in February appeared to provide stakeholders with greater confidence regarding the use of the models for a 2013-15 scheme.

We have not yet seen fully calibrated and tested model results on which we can judge readiness for use of the models. Our publication of final proposals on a target based scheme is subject to receiving evidence from NGET based on results from testing of fully calibrated models that can provide us with sufficient confidence that these models are suitably robust for use under a 2013-15 scheme.

We continue to consider our cost disallowance approach to be a valid alternative to a target based scheme. We believe that this approach can be worked up in a relatively short period of time if it becomes apparent that NGET is unlikely to provide us with sufficient confidence in the robustness of its models at any stage.

Scheme overview

Under our proposals, the energy and constraints models would define a target for the energy balancing and constraint management costs incurred by NGET. These would be combined with a target for the costs of procuring black start services in order to identify an overall scheme target. More information on how the scheme, and the target setting approach, would work is provided in chapters 2 and 3.

Alongside this incentive scheme, we propose to introduce a number of additional incentives on specific outputs for the two year scheme duration. The main focus of these incentives would be on encouraging the SO to work towards some longer term objectives which are not fully captured within a target based incentive scheme on overall costs. Our proposals for these additional incentives can be found in chapter 4.

We believe a target based scheme will place the strongest possible incentives on the SO to minimise costs of balancing the system hence protecting the interests of consumers. However, we continue to believe that there are a number of additional behaviours which the SO is currently not incentivised to demonstrate (such as longer term considerations beyond a two year time horizon) that could have significant benefits for consumers in the future. As a result, we consider that the scheme being proposed here will represent an interim arrangement.

We will work to develop an enduring approach as more clarity emerges on the role of the SO in the face of emerging market developments (for example the Government's electricity market reform). We will take into account the level of clarity in considering the most appropriate timing for introduction of this enduring approach.

Next steps

Following responses to this consultation, and subject to being provided with sufficient confidence in NGET's models, we expect to publish final proposals, and a statutory consultation on the required licence changes, in June 2013 allowing licence changes to take effect in the summer. We propose to apply the scheme retrospectively from this date to 1 April 2013. This would ensure that NGET continue to be incentivised to minimise costs in the period where no formal scheme is in place.

1. A Balancing Services Incentive Scheme for 2013

Question box

Question 1: Do you agree with our proposal to put a balancing services incentive scheme in place for 2013-15?

Question 2: How much confidence do you have in the ability of the models to set a robust target given recent developments to the models and methodology?

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 electricity demand.

1.2. We have been setting SO incentives in broadly their current form since 2001¹. These schemes have lasted one to two years and incentivise NGET to operate efficiently through setting a target² for its balancing actions. NGET then retains a percentage of any under or overspend against this target with the remainder being passed on to consumers. In 2011/12, the external cost of operating the electricity system to consumers was £886 million³.

Recent challenges with a target based scheme

1.3. Market developments in recent years have increased the complexity of identifying a scheme target. A rapidly changing generation mix with a growing role for renewable generation has increased volatility and uncertainty regarding balancing actions and has particularly impacted on constraint costs. Significant divergence between scheme targets and out-turns have been observed since 2008 with NGET

¹ 2006-7 is an exception. In this year no incentive scheme was in place. We continued to regulate NGET during this period through NGET's licence conditions which include requirements for it to operate the system in a co-ordinated, economic and efficient manner.

² Historically, this target was set at the commencement of the scheme (ex ante). The current incentive scheme does not use an ex ante target but defines up front incentives for all of the variables which are deemed to be controllable or forecastable to some degree by NGET (ex ante inputs). This is explained in more detail in chapter 2 of this document.

³ A total uplift or discount of up to £50 million will be added to the overall costs within the two year scheme period depending on the SO's performance under the incentive scheme which is currently in place. This will be determined when the scheme ends on 31 March 2013.

hitting the scheme cap or floor in each scheme year since this. Figure 1 shows out-turn against target costs up to the current scheme period:

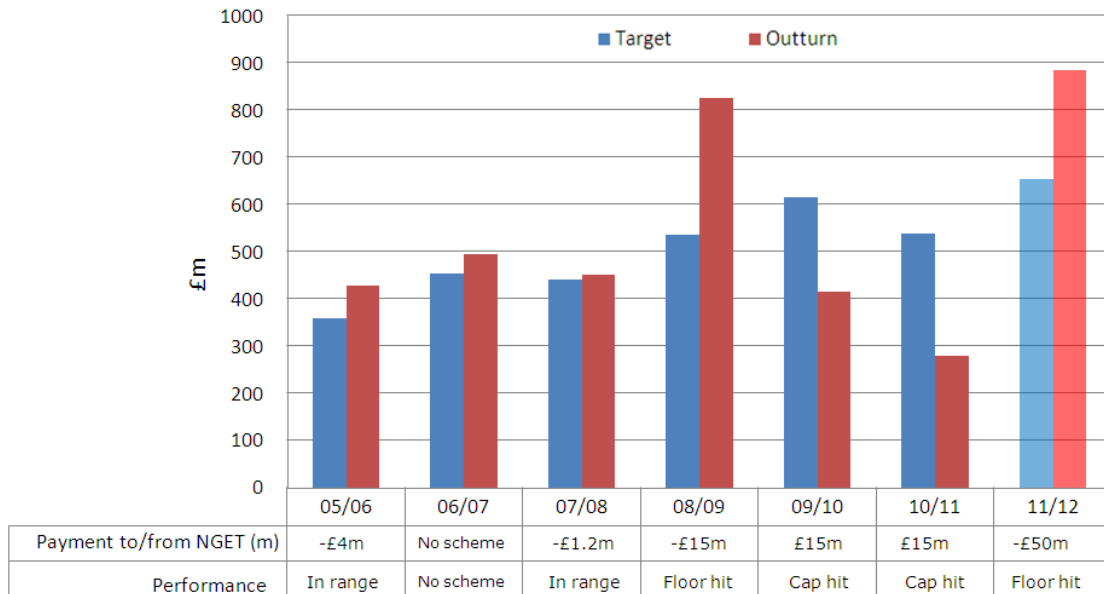


Figure 1: Out-turn costs against target costs since 2005/6^{4, 5}

1.4. In an attempt to make the target used under the scheme more accurate, we adapted the modelling approach used to define a target under the balancing services incentive scheme (BSIS). We required NGET to develop models which could be used to set a target for the scheme commencing in 2011. Alongside these models, a methodology was developed which governs how market variables are input into the models to allow a target to be derived. Once actual costs incurred by the SO have been compared against this target, we can apply the parameters of the scheme and reward or penalise the SO appropriately.

1.5. This methodology requires all variables to be input into the model at the start of the scheme to generate a forecast of balancing costs. However, only some of these inputs are fixed at this time (ex ante inputs). A number of inputs are updated on a monthly basis throughout the scheme (ex post inputs) and together with the ex ante inputs are used to generate the scheme target. NGET has been allowed to apply for inputs to be made ex post where it considers a variable to be outside of its control and difficult for it to forecast. This was intended to reduce the risk that factors outside of NGET’s control could result in windfall gains or losses.

⁴ The actual target costs in the year 2011/12 will not be finalised until the scheme finishes on 31 March 2013. However, current forecasts estimate that NGET would have hit the overall scheme floor of £50 million in the 2011/12 scheme period.

⁵ The cost data presented here is in real prices as at the time that the payment to/from NGET was calculated

1.6. Despite the introduction of a modelled target approach to BSIS, the significant divergence between targets and out-turn costs has continued under the models based approach. These differences have resulted in the SO's performance under the scheme continuing to not only be influenced by its management of balancing costs but by variables outside of its control and inaccuracies with the target setting approach. Where external influences impact on the costs or rewards to the SO under the scheme, this risks diluting the incentives on the SO to manage its costs. This is particularly the case in the event that this results in the scheme cap or floor being hit.

Our cost disallowance proposals

1.7. In the absence of sufficient confidence in the target setting approach, we published initial proposals on an alternative to a BSIS in July 2012. Amongst other things, our initial proposals consulted on a cost disallowance approach. In response to stakeholder requests for more information about how a cost disallowance scheme would work in practice we published a further consultation on our proposals in October 2012.

1.8. In these consultations we set out a method under which we would develop cost thresholds which, if breached, would indicate a cause for concern over the level of balancing costs. If costs incurred by the SO rose above these thresholds we could open a review of those costs. Following any review, the Authority⁶ could direct to disallow the pass-through of these costs to consumers if they were deemed to be uneconomic or inefficient.⁷

1.9. As stated in our October 2012 consultation, our longer term preferred approach has been to return to a financial cost incentive similar to the BSIS. Our cost disallowance proposals were developed in the absence of sufficient confidence with the target setting methodology. The rationale for development of the cost disallowance scheme was to protect consumers from costs which could result from inaccuracies with the target setting approach under a BSIS, particularly given challenges arising from market developments. Without financial incentives to minimise balancing costs, the cost disallowance approach was intended to ensure that actions taken by the SO would be economic and efficient.

1.10. Alongside our cost disallowance approach, we had proposed to put measures in place to ensure that we could return to a financial incentives scheme in the future. For example, we had proposed to introduce a licence condition on NGET to continue to develop their models in order to ensure that they would be ready for use as part of a future target based scheme. We had also proposed an incentive on the accuracy of NGET's forecast of balancing services use of system (BSUoS) charges. This would

⁶ The Authority is the Governing Body for Ofgem, consisting of non-executive and executive members.

⁷ The July and October 2012 consultations included proposals for a number of other incentives. These included for example a discretionary reward, a wind generation forecasting incentive and a balancing services use of system charge forecasting incentive. We set out our proposals for these additional incentives in chapter 5 of this document.

ensure that NGET were encouraged to continue improving their models in order to more accurately forecast these charges.

A Balancing Services Incentive Scheme for 2013

1.11. Since we published our October consultation document there have been a number of developments. These developments have led us to consider that a financial incentives approach will best incentivise the SO to minimise its costs of balancing the system, thus better protecting the interests of consumers.

Modelling and methodology developments

1.12. Key to arriving at this position has been information provided by NGET which demonstrates developments made to the models and methodology which would underpin a target based approach. We provide more information on how the models and methodology work to define a target in chapter 2.

1.13. In September 2012 we approved a number of input methodology amendments following a NGET consultation in July 2012⁸. Among other changes, this made a number of variables ex post inputs where they were previously input into the model at the start of the scheme. NGET has submitted evidence to show that resulting changes to the input methodology have removed some of the potential for factors outside of its control to influence its performance against the target.

1.14. NGET has also been undertaking a number of developments to the modelling architectures. The models were introduced in 2011 and NGET has suggested that learning has allowed it to identify improvements which enable the models to develop more accurate targets. Improvements to the constraints model include greater granularity of boundary nodes, improved modelling of wind and pumped storage generation and, improved modelling of embedded generation. A new architecture has been developed for the energy models which allows for improved testing and the development of more accurate relationships within the models.

1.15. A combination of the improvements described above has led us to conclude that the models and methodology which would underpin a target based approach have been improved significantly.

Concerns with the cost disallowance approach

1.16. Stakeholders have generally agreed with our view that there have been problems with the target setting approach that would underpin a BSIS. However, they have suggested that a cost disallowance approach would not come without its

⁸ This can be found at the following link:
http://www.nationalgrid.com/NR/rdonlyres/37E1065A-227B-4613-B673-76ED6AF41D0F/54943/2011_13BSISmethodologyconsultation_July2012Final_Industry.pdf

own challenges. For example, a number of stakeholders have highlighted the increase in regulatory burden arising from the volume of information provision required in order for a cost disallowance process to be enforced.

1.17. NGET in particular has continued to have concerns with the cost disallowance approach. For example, NGET has suggested that the uncertainty of a cost disallowance approach could lead it to take a more risk averse stance towards balancing the system than it would otherwise. NGET considered that it may naturally lean towards the use of low risk, low reward options for balancing the system such as the balancing market. It may be less inclined to use alternative options such as contracting ahead given the associated higher risk profile. These alternative options may otherwise reduce the costs of balancing the system compared to relying on the balancing market. Thus, the uncertainty introduced may lead to rising costs of balancing the system.⁹

1.18. We see merit in a number of the concerns that have been raised in response to our October 2012 consultation. We are aware that the ex post and discretionary nature of the cost disallowance approach means that it might be difficult to implement in a way that places the optimal incentives on NGET to minimise its costs of balancing the system. We recognise that some further work would be needed to ensure that our cost disallowance proposals would be as strong as possible before proceeding with implementation of a cost disallowance scheme.

Stakeholder views on the target setting approach

1.19. As a result of concerns with the cost disallowance approach, many stakeholders continue to have a preference for the certainty provided by a target based scheme so long as this can be supported by sufficient confidence with the target setting approach. This view was evident in responses to our initial proposals and at a stakeholder workshop that we held on 14 September 2012.

1.20. We held a stakeholder workshop on 21 January 2013¹⁰ at which we provided NGET with a platform to discuss the developments that had been made to the models and methodology and its reasons for considering that these would be sufficiently robust for use under a 2013-15 scheme. We also presented stakeholders with a number of questions and asked for their views on the relative merits of a target based incentives approach as opposed to cost disallowance.

1.21. Stakeholders were in agreement that target based incentives would be better placed to encourage NGET to minimise its costs of balancing the system should this be considered a viable approach. They considered the evidence provided by NGET to

⁹ NGET's response to our October 2012 consultation can be found here: http://www.ofgem.gov.uk/Markets/WhIMkts/EffSystemOps/SystOpIncent/Documents1/NGETsresponsetocostdisallowanceconsultation23_11_12.pdf

¹⁰ The Ofgem and NGET slides used at this workshop can be found at the following link: <http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=319&refer=Markets/WhIMkts/EffSystemOps/SystOpIncent>

demonstrate developments to the models and methodology to be a positive step. However, stakeholders requested further information from NGET in order to be comfortable that the models would now be able to produce robust targets.

1.22. In response to this request, NGET held a model and methodology workshop on 20 February 2013¹¹. At this workshop, NGET explained to stakeholders how the models and methodology would be used to set a scheme target. NGET also presented developments to the models and the results from testing of the models carried out so far. Stakeholders welcomed the workshop and the greater understanding of the models and methodology provided. They appeared to gain some comfort regarding the use of the models as part of a target setting approach.

1.23. We consider the 20 February workshop to be a positive step, both in terms of working towards a BSIS for 2013 and in looking to increase the role of stakeholder involvement in the development of the models more generally. By their nature, the models and methodology which underpin a BSIS are constantly evolving in reaction to market developments. Looking beyond a 2013-15 scheme, we expect this stakeholder engagement to continue so that stakeholders are better placed to provide comment and ideas on model development.

Developing our final proposals

1.24. A combination of the factors above has led us to conclude that a BSIS would be better able to protect the interests of consumers than a cost disallowance scheme if supported by confidence in the target setting approach.

1.25. On this basis, we are publishing this consultation on the use of a target based incentive scheme as we expect the models to be sufficiently developed in time to publish our final proposals for a 2013-15 scheme later this year.

1.26. However, we note that we have not yet seen fully calibrated and tested models on which we can judge readiness for use under a scheme. NGET are continuing to calibrate and back-test (measuring performance of the models against historic costs using actual input data) the energy models and are proceeding with parallel testing (measuring performance of the models and methodology using current scheme inputs) of the constraints model.

We will continue to work closely with NGET to understand results from testing of the fully developed models to ensure that they are suitably robust. Our publication of final proposals on a target based scheme is subject to receiving evidence from NGET based on results from testing of fully calibrated models that can provide us with sufficient confidence that these models are suitably robust for use under a 2013-15 scheme.

¹¹ NGET's slides from the workshop can be found at the following link:
http://www.nationalgrid.com/NR/rdonlyres/ADE28C8F-53C2-45B8-9771-1FC5F5E3710C/59155/WorkshopSlides_Final.pdf

1.27. We continue to consider our cost disallowance approach to be a valid alternative to a target based scheme. We believe that this approach can be worked up in a relatively short period of time if it becomes apparent that NGET is unlikely to provide us with sufficient confidence in the robustness of its models at any stage.

2. Setting the Target

Chapter Summary

In this chapter we outline how a target is developed under a BSIS. We summarise recent developments that have been made to the models and input methodology that would be used to set a target. We also set out our proposed position on requests for further changes to the input methodology that have been made by NGET.

Question box

Question 1: What are your views on making balancing mechanism 'pseudo' prices an ex post input in the energy models? What additional considerations may exist?

Question 2: What are views on the appropriate length of time for input of transmission limits? What value do you place on having forecasts ahead of time which are as accurate as possible?

Question 3: What are your views on the requirement for, and appropriate level of, a discount factor to be applied to the constraints model?

How a scheme target is generated

2.1. Under the current balancing services incentive scheme (BSIS), a scheme target is identified against which actual costs incurred by National Grid Electricity Transmission (NGET) are compared at the end of the scheme. This scheme target is a combination of four factors:

- A target for NGET's energy balancing costs;
- A target for NGET's constraint management costs;
- A performance measure for the volume of transmission losses on the system; and
- A target for the costs incurred in procuring black start services.

2.2. The transmission loss volume performance measure and black start cost target are defined at the commencement of the scheme. The calculation of NGET's energy balancing and constraint management cost target are made up of two aspects; the models, and the input methodology that underpin these models.

2.3. There are two sets of modelling architecture that take the variables which are input by NGET and process these to forecast the costs that NGET will incur over the scheme. The two sets of models 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.

2.4. Alongside the models sit three methodology statements, one of which governs the methodology for setting inputs in the models¹². This methodology determines how the models are used to derive a target and how the variables that NGET must input into the models are treated. These inputs are separated into ex ante inputs and ex post inputs:

- *Ex ante inputs:* These are variables that are input into the model and **fixed at the commencement** of the scheme or ahead of real time. NGET's actual costs will be calculated against targets based on these fixed inputs in conjunction with the ex post inputs.
- *Ex post inputs:* These are variables that are input into the model at commencement of the scheme but **are updated at the end of each month with actual cost data**.

2.5. We separate the inputs between ex ante and ex post to ensure that the incentives on NGET are focused on those areas where this adds benefit. In short, we use ex ante inputs to focus the incentives on areas where NGET has some influence over costs and should be incentivised to keep these low. Also, through ex ante inputs, we place incentives on areas where NGET can forecast costs with some accuracy and where the market benefits from this forecast being as accurate as possible.¹³

2.6. Therefore, the estimation of costs made by the models ahead of the scheme is a forecast. The overall cost target against which NGET's out-turn costs are measured is not known until those inputs defined as ex post are updated with actual information at the end of the scheme.

Requests for further methodology changes

2.7. In chapter 1, we noted a number of methodology changes that were approved by the Authority in September 2012. In addition to the changes that were made at this time, NGET has suggested some further changes to the methodology that would be used to set a target for a 2013-15 scheme. In this section we set out our proposals in relation to each of these suggestions.

¹² This overall methodology is made up of three different methodology statements. 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.

¹³ NGET has published a document which sets out criteria for how they determine which variables should be calculated ex ante and ex post. This can be found here: http://www.nationalgrid.com/NR/rdonlyres/9D7149B1-C8C5-40EA-B563-B1B8F9CAF744/57000/Treatment_of_Modelling_Inputs_Methodology_Issue1_Revision1_Sep2012_Final.pdf

Balancing Mechanism 'pseudo' prices

2.8. One part of the energy models requires volume weighted average balancing mechanism (BM) prices to be forecast in order to calculate a target price for actions which NGET takes in the BM. These volume weighted average prices are defined ex ante under the current 2011-13 scheme. NGET name these ex ante volume weighted average prices BM 'pseudo' prices.

2.9. NGET has proposed adjusting this methodology to define the relationships ex post based on actual relationships rather than forecasting these ex ante. NGET suggests that BM prices are almost fully outside of its influence and that retaining an ex ante requirement introduces a possible source of error in generating a target.

2.10. We consider the benefits of removing a potential source of windfall gain or loss to outweigh the removal of incentives for NGET to influence the BM prices it receives from the market. Thus we propose to make the BM pseudo prices an ex post input into the model.

2.11. We believe that NGET has some ability to influence the prices it receives in the BM:

- *Contracting ahead:* Rather than utilising the BM to balance the market, NGET can agree contracts ahead of time in order to cover a proportion of the actions which it would need to take. Contracting ahead of time can reduce NGET's dependence on the BM which can in turn increase the competitiveness of the bids and offers that it receives.
- *Influencing market arrangements:* While NGET has little ability to influence BM prices in the short term, we note the wider role that the system operator (SO) should play in terms of influencing the codes and regulations which govern the electricity market. We believe that NGET are well placed as the SO to look to influence the rules governing the market in order to impact on the BM prices that are observed.

2.12. However we see the ability of the SO to influence the BM prices it receives as relatively limited, at least in the short term. Furthermore, a number of external and sometimes volatile factors make forecasting BM prices difficult and a correlation is challenging to define. There is evidence that ex ante BM pseudo price inputs under the current scheme has led to significant deviation of costs against the target.

2.13. To this end, we believe that making the input ex post could remove a potential source of target setting error which has previously resulted in deviation between the cost and target. Further we note that BM prices were made an ex post input in the constraints model for similar reasons to those set out here. Thus we propose to accept NGET's revisions of this to make BM pseudo-prices an ex post input for the 2013-15 scheme.

2.14. We note one issue with making BM pseudo prices an ex post input. In the past, one of the few ways that NGET has been able to have any influence over BM prices is through agreeing contracts with generators which include terms regarding BM prices that can be submitted. For example, these contracts may have caps and collars on the bids and offers that the generator can submit in the BM.

2.15. When we agreed to making BM prices an ex post input in the constraints model, we introduced a licence condition restricting NGET from entering into such contracts. This was considered necessary in order to prevent the possibility of perverse incentives for NGET to sign up to these contracts in the knowledge that they may flow through to BM prices against which NGET would have no incentive or risk to minimise costs.

2.16. At the time, this decision was made easier by the fact that very few of these contracts existed and NGET had few concerns about putting a restriction in place. With growing renewable generation on the system however, NGET has made some initial suggestions that these types of contract may be a useful option.

2.17. We will monitor developments in this area on an ongoing basis. If NGET are keen to remove the restriction on the use of such contracts, we will consider the possibility for perverse incentives further and ensure that a suitable solution is identified before allowing the use of these contracts.

Transmission limit input

2.18. In order to define a target for the costs of managing constraints on the system, NGET need to input the physical transmission limits of the network into the model. Under the current scheme, NGET is required to input transmission limits for the duration of the scheme at scheme outset. This means identifying transmission limits up to two years ahead in practice.

2.19. NGET has proposed an amendment to this methodology so that it can update transmission limit inputs into the models six weeks ahead of time. NGET suggests that this will allow it to input transmission limit data while retaining an incentive to manage the costs of known outages and to minimise the impact of short term changes to transmission capability.

2.20. We propose to reduce the timescales in which NGET is required to input transmission limits into the model to one year. We would do this through requiring NGET to set out transmission limits for the two year duration of the scheme in order to define a full scheme forecast of costs. The transmission limits for the second year of the scheme commencing from 1 April 2014 will be updated at the mid-scheme point.

2.21. We consider this to be a fair proposal which balances the risk placed on NGET through a requirement to forecast ahead of time with the benefits to the market in terms of incentivising NGET to set out forecasts of transmission limits which it is encouraged to maintain consistency with as far as possible.

2.22. We accept that it is difficult for the SO to estimate transmission limits with complete accuracy and this is an important driver behind our proposal to halve the length of time against which NGET is incentivised in this regard. This is particularly an issue in Scotland where separate Transmission Owners (TOs) operate. However, we consider that the SO is able to communicate with the TOs in order to coordinate outage planning and attempt to minimise overall system costs.

2.23. In addition, while some change against expected transmission limits over the course of the year is inevitable, incentivising the SO to consider how best to ensure that consistency is maintained in relation to its year ahead outage plans as far as possible will provide benefits for market players. This will encourage consistency with the year ahead outage plan to the extent possible which will provide market players with greater scope for planning of their actions against a year ahead outage plan.

2.24. We have now developed our Network Access Policy (NAP)¹⁴. The NAP will be introduced through RIIO-T1, the first version being submitted to us by each TO for approval within 30 days of 1 April 2013. These documents which the TOs and SO have been developing over the last year, provide a more effective (best practice) platform for the SO and TOs to communicate outage plans up to eight years ahead. This is built on clear expectations of the overall approach that the TOs will follow in interaction with the SO. This should provide the SO with greater ability to identify and influence outage plans on a longer term basis.

2.25. In addition, the European Operational Planning and Scheduling (OP&S) code¹⁵ is currently in development and is expected to come into force in 2014. The code is the second of the European Network Codes on System Operation and will be legally binding across Europe when it enters into force. It will include obligations on transmission system operators (TSOs) and 'Relevant Assets' to produce and coordinate Year-Ahead 'Availability Plans'. We consider fixing incentives against year ahead outage planning to maintain consistency with the objectives of this code.

2.26. Given the importance that we understand the industry to place on transmission limits which are forecast as accurately as possible with sufficient advance timing and our belief that the ability of the SO to identify and influence TO outage planning has improved, we propose for transmission limits to be input into the models on a year ahead basis. In practice this means inputting transmission limits ahead of commencement of the scheme and again as part of the mid-scheme update.

¹⁴ Requirements for a NAP from each TO were set out in our RIIO-T1 Final Proposals. The draft NAP from the two Scottish TOs (Scottish Power Transmission Ltd and Scottish Hydro Electric Transmission Ltd) can be found at the following link:

http://www.ofgem.gov.uk/Networks/Trans/PriceControls/RIIO-T1/ConRes/Documents1/7_Network_Access_Policy_SHETLandSPTL.pdf

¹⁵ More information on the OP&S code can be found at the following link:

<https://www.entsoe.eu/major-projects/network-code-development/operational-planning-scheduling/>

Discount factor application

2.27. The methodology used alongside the constraints model develops a target for the costs of the balancing actions which NGET needs to take to manage network constraints. In doing this, the methodology assumes that all of the actions taken to manage these constraints are taken in the BM. In addition to the BM, NGET is able to take other measures in order to manage these constraints. These include trades, use of intertrips¹⁶ and the agreement of contracts with generators. Through these additional measures it may be able to reduce its overall costs of balancing the system.

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

2.29. In order to ensure that the target is set in line with 'business as usual' actions, we have applied a discount factor to the outputs of the constraints model under the current scheme such that these actions are taken into account. This discount factor is set at 41% under the current scheme meaning that the output of the model is multiplied by a factor of 0.59 before a target for costs of managing constraints is derived.

2.30. NGET has suggested that a discount factor of 41% is too high and represents an unachievable target in terms of the amount that they can save against taking actions 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 have suggested the introduction of the Transmission Constraint Licence Condition¹⁷ may lead to reductions in some bid price submissions into the BM. While this would benefit consumers, NGET argue that this may make the savings that they can derive through contracts and other actions outside of the BM more marginal.

2.31. The appropriate level of discount factor depends on other aspects of the BSIS package. NGET's views on the appropriate level for a discount factor reflect this. In their business plan¹⁸, NGET suggested applying an uplift factor rather than discount

¹⁶ 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/>

¹⁷ 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>

factor. More recently, and in consideration of the overall BSIS package that was being proposed, it has suggested that not using an uplift or discount factor may be an appropriate approach. However, we do not feel that either of these suggestions was supported with the amount of evidence that we would require to amend our current position.

2.32. We continue to consider that a discount factor is required in order to reflect the level of actions which the SO should be taking to minimise its overall costs under business as usual. We agree that a discount factor of 41% represents a challenging target which may be difficult to achieve under business as usual.

2.33. However, we have not seen sufficient evidence on which to base an alternative to the current approach and level of application of the discount factor at this stage. Given this, in the absence of evidence which supports use of a different discount factor, our current proposal is to retain the 41% discount factor which is used under the current scheme.

2.34. We see merit in continuing to consider the most appropriate approach towards a discount factor in developing our final proposals. We are aware that NGET is developing proposals and evidence to support a different approach to that which we currently follow in order to factor in actions that it takes as business as usual outside of the BM. We intend to consider the approach that NGET develop as well as supporting analysis provided in working up our final proposals.

2.35. We are interested in the views of stakeholders on the requirement for a discount factor and on the appropriate level that should be applied.

¹⁸ This can be found at the following link:
<http://www.nationalgrid.com/NR/rdonlyres/13531149-75DC-4BF9-BD27-2A0C9425A649/54364/ElectricitySystemOperatorExternalIncentivePlan.pdf>

3. Parameters of a Balancing Services Incentive Scheme

Chapter Summary

In this chapter we set out our proposals for the parameters of a Balancing Services Incentive Scheme to cover the period from 1 April 2013 to 31 March 2015.

Question box

Question 1: Do you agree with our proposals for the key parameters of a BSIS?

Question 2: What are your views on the one year update provisions and the requirement for income adjusting event provisions?

Question 3: Do you have any views on the types of inputs that may be suitable for adjustment as part of the mid-scheme provisions?

Question 4: What do you consider to be the merits/disadvantages of applying the scheme retrospectively to the 1 April 2013? Do you consider this to be the best option for the 'interim period'?

Scheme length

3.1. We propose to put an incentive scheme in place to cover the period from 1 April 2013 to 31 March 2015. We believe that this length of scheme strikes the right balance between longer term commitment and mitigating against market volatility and uncertainty. In addition, this length of scheme will allow us to take a step back to consider an enduring approach towards incentivising the system operator (SO) under future schemes, particularly in the face of emerging market developments.

3.2. We note that this length of scheme is not consistent with the eight year scheme period that is being used under the RIIIO price controls. We continue to consider longer term thinking to be an important objective behaviour that the SO should be incentivised to demonstrate where possible.

3.3. However, we consider that the scheme that we put in place in 2013 will represent an interim arrangement. We continue to believe that there are a number of behaviours which the SO is currently not incentivised to demonstrate that could have significant benefits for consumers. Some examples of the behaviours that we would expect the SO to demonstrate are set out below:

- Longer term thinking: Encouraging the SO to look beyond the two year timeframe when considering the economic and efficient nature of its actions where possible continues to be an important objective.
- SO-TO coordination: We identify opportunities for the SO to build on existing policies (such as the Network Access Policy) to develop processes and policies that can go beyond the required level of engagement to encourage greater

coordination between the SO and TOs in order to minimise overall costs on the system.

- Considering the role of emerging technologies: We consider there to be scope for the SO to consider technologies, policies and processes which can ensure a level playing field for emerging energy technologies (eg demand side response and embedded generation) that may be able to participate in the balancing market and provide competitive ancillary services.

3.4. One example is the need that we identify for the SO to consider the efficiency of the actions that it takes over a longer timescale. We also see potential for the SO to play a greater role in considering emerging energy technologies and the ancillary services that they could provide. In addition, we believe there is scope for the SO to build on developments such as the Network Access Policy (NAP) to go beyond that required by the NAP to consider the way in which it communicates and coordinates actions with TOs to ensure that overall system costs of actions taken are minimised.

3.5. There are a number of emerging developments in the electricity market which are likely to affect the role of the SO going forwards. These include:

- Electricity Market Reform¹⁹
- Electricity Balancing Significant Code Review²⁰
- Integrated Planning and Regulation project²¹
- European Target Model²²

3.6. We believe that the uncertainty that these developments raise for the role of the SO adds support to our position of delaying the development of longer term incentives at this time. We expect that we and industry participants will be better placed to understand these developments around the middle of the decade.

3.7. Following implementation of a scheme for 2013 we will take a step back to consider the role and behaviours that we would expect the SO to demonstrate given

¹⁹ More information about the Government's EMR can be found at the following link: <https://www.gov.uk/government/policies/maintaining-uk-energy-security--2/supporting-pages/electricity-market-reform>

²⁰ We recently published an open letter which provides an update for stakeholders on the scope of the EBSCR. This also sets out a scope on a Future Trading Arrangements project which we are currently seeking views on our proposals to commence. This open letter can be found at the following link:

<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=69&refer=Markets/WHiMkts/CompandEff/electricity-balancing-scr>

²¹ More information about the ITPR can be found at the following link:

<http://www.ofgem.gov.uk/Networks/Trans/ElecTransPolicy/itpr/Pages/index.aspx>

²² More information about the EU Target Model can be found at the following link: <http://www.acer.europa.eu/Electricity/Pages/default.aspx>

market developments. We believe that a two year scheme is best placed to provide us with this opportunity while retaining some degree of longer term incentive.

3.8. The timing of implementation of an enduring approach will be dependent on the timing and level of clarity that emerges regarding the SO's role in the electricity market. We may be in a position to implement an enduring approach following the expiry of the 2013-15 scheme that we propose here. If there is not sufficient clarity at this stage, we will continue to ensure that interim arrangements place the strongest incentives possible on NGET to minimise costs. We will also continue to consider additional incentives that can encourage some of the behaviours that we are looking for the SO to demonstrate.

Structure of the two year scheme

3.9. Under the current incentive scheme, a cap and floor of £50 million is set for the two year duration of the scheme. NGET's performance over the scheme as a whole is evaluated at the end of this period and the rewards or penalties to NGET applied.

3.10. We identify two options for the structure of a scheme for 2013-15:

- **A 'one by two' year scheme:** This is the approach that is followed under the current scheme where caps and floors are set for the two year duration and NGET's performance evaluated at the end of this.
- **A 'two by one year' scheme:** Under this approach, the scheme rules would be set at the outset providing certainty to NGET and stakeholders as to how the scheme will work for the two year duration. However a separate cap and floor of ±£25 million would be applied in each year of the scheme. NGET's performance in the first scheme year would be evaluated at the mid-scheme point.

3.11. We propose to follow the 'two by one year scheme' approach. This would provide protection against the possibility of significant cost over-runs or under-runs in the first year of the scheme leading to a lack of incentives as NGET consider that the scheme cap or floor is likely to be hit.

3.12. We note counter arguments to separating evaluation of scheme performance between each year of the scheme. Moving to longer term incentives continues to be an important objective as we look ahead to future SO incentives schemes. Separating scheme performance between years may reduce the incentive on NGET to consider minimising costs over a two year rather than one year time period. Thus we welcome views from stakeholders on their preferences regarding the two approaches that we have set out.

Setting the target

3.13. We propose to remain broadly consistent with the current approach towards setting a scheme target. NGET would use the models and associated methodologies to identify a forecast of energy balancing and constraint management costs at the commencement of the scheme. This would then be updated with actual cost data where an input was defined as ex post. The resulting targets for balancing and constraint management costs would then be combined with the up-front targets identified for the procurement of black start services to derive an overall scheme target.²³

3.14. NGET's costs would be compared against this target and the scheme parameters applied to calculate the rewards or penalties that we would apply. More information on how the models and methodology would work to identify a scheme target is provided in chapter 2.

Mid-scheme update provisions

3.15. We propose one difference to the way in which a target is set under a scheme in 2013-15. Under our proposals we would introduce mid-scheme update provisions. This would provide an opportunity for updates to key aspects of the scheme at the mid-scheme stage with updates applying from 1 April 2014. Our proposal for these mid-scheme update provisions is made up of three aspects:

- **Update of key model inputs:** In addition to ex ante and ex post inputs, we propose to introduce a third set of inputs which are input into the model at scheme commencement, but which can be updated as part of a mid-scheme update.
- **Ability for NGET to apply for input methodology changes:** We would allow NGET to apply for methodology changes as part of the mid-scheme update provisions. Any changes would apply only on a prospective basis. We would remove the ability for NGET to apply for methodology changes outside of these provisions.
- **Corrections to model or input errors:** Where model or model input errors are identified, we would expect these to be alerted to our attention and corrected at the earliest opportunity. There would be no requirement to wait for the mid-scheme update to correct these errors.

²³ We propose to remove the financial incentive which currently exists on NGET with regard to transmission network losses. We set out our reasoning for this in chapter 5 of this document.

Update of key model inputs

3.16. We are aware that there a number of variables which are input into the models which are difficult for NGET to forecast or control, particularly over longer time-frames. However, not all of these are suitable for ex post treatment given that the SO may have some ability to forecast or influence these costs and that the market benefits from it doing so to the best of its ability.

3.17. Where this is the case, we propose to introduce the provision for mid-period updates to these inputs. We would clearly set out at the scheme outset which inputs NGET would be required to update at the mid-scheme period. Any input updates would apply from 1 April 2014 to 31 March 2015.

3.18. In chapter 2 we set out our proposals on some changes to the methodology which have been suggested by NGET. An example of an input which we consider to be appropriate for updating at the mid-scheme period is the transmission limits which are used in the constraints model.

3.19. We are aware that it is difficult for NGET to accurately forecast and influence outages up to two years in advance as is required under the current scheme. Indeed, we note that changes against one year ahead outage plans are inevitable. However, we consider that NGET has some ability to forecast and coordinate these outage plans at the one year ahead stage. This ability is improving with developments such as the NAP. Further, we believe that industry benefits from the incentive on the SO to ensure that it fully considers its one year ahead transmission limit inputs and ensures that these limits are carried out to the extent possible. Thus we consider this input suitable for updating as part of our mid-scheme update provisions.

Opportunity to apply for input methodology changes

3.20. We appreciate that the modelled target setting approach to BSIS was only introduced in 2011 and that use of the models has led to improvements being identified within the scheme period. We have previously allowed amendments to the input methodology within the current scheme and these have applied on a retrospective basis. These amendments have allowed the scheme to more accurately reflect the value added by NGET by removing the influence of factors outside of NGET's control. However, we are also aware that the possibility of within scheme adjustments can introduce uncertainty for NGET and industry, particularly where these are applied retrospectively.

3.21. A key consideration in moving away from our cost disallowance proposals has been the evidence submitted to us to suggest that the models and methodology are now suitable to identify a sufficiently robust ex ante target. Given this, we propose to remove the possibility for NGET to apply for amendments to the input methodology at any point over the scheme.

3.22. To replace this, we would provide NGET with the opportunity to apply for changes to the methodology as part of the mid-scheme update provisions. In order

to avoid uncertainty for market participants, these methodology changes could only be applied on a prospective basis commencing from 1 April 2014. We would not expect applications for large scale changes to the methodology given developments that have already been made to more accurately reflect those actions which are within NGET's control. However, this will provide an opportunity for NGET to apply for methodology changes in reaction to any unforeseen market developments which may impact the nature of inputs into the model.

3.23. In working up this proposal we would consider the necessary process. For example, we could require NGET to publish a four week industry consultation on any proposed methodology changes around the end of January 2014. After giving due consideration to the request and to the responses of stakeholders, the Authority would decide to approve or reject the proposed changes. NGET would not be able to apply for methodology changes at other times over the course of the 2013-15 scheme.

Modelling and input errors

3.24. In addition to the possibility for physical events to impact on NGET's costs against a target, it is possible that the target may be impacted as a result of the imperfect information available to the model, for example model or modelling input errors. We see a clear difference between our mid-scheme update provisions and changes to allow for model or model input errors. Our mid-scheme provisions would be put in place to allow updates to inputs which may be difficult to forecast and to allow NGET to apply for methodology changes to reflect market developments. Model or model input errors could impact upon the target but would have little to do with actual events.

3.25. This type of errors would not be included within our mid-scheme provisions. In the case of errors of this nature, NGET would be required to alert us of the error, submit information regarding its nature and materiality, and correct the error at the earliest opportunity. If an error impacted on the target that was set for a period preceding identification of the error then we would expect these changes to be made retrospectively to correct for this.

3.26. For example we note a modelling input error under the current scheme that resulted in a £9.3bn mis-calculation of the target. Provisions under our proposals for a new scheme would require this error to be removed and corrections applied retrospectively as it was clear that this was solely a result of an error relating to the imperfect information available to the model and not a result of 'real-world' events.

Dead-band

3.27. A dead-band is an amount of under or overspend about the target under which no incentive payment would be made for further under or overspends respectively. The current scheme has a symmetrical dead-band of \pm £5m about the target.

3.28. We see no reason to retain a dead-band for a 2013 scheme and thus propose not to have a one in place. While we note a small benefit in having a dead-band in that it effectively widens the cap and the floor, we consider that this would reduce the incentives on NGET closer to the target where it would seem most important to have an incentive in place.

Sharing factor

3.29. The sharing factor represents the proportion of any pound of under or overspend against the target which NGET is rewarded (below the target) or penalised (above the target) with the remainder being passed on to consumers. The current scheme has a 25% sharing factor which means that NGET retains or loses 25 pence out of every pound of under-spend or over-spend respectively.

3.30. We propose to retain the same sharing factor. We consider that this provides the right balance between the incentives on NGET and the pass-through of costs or savings to consumers in the event that this results from factors outside of NGET's control.

3.31. We note that our proposals are not consistent with RIIO-T1 which applies a sharing factor of 48% to NGET in relation to its TO role and in relation to the internal costs of the SO. Greater alignment of the sharing factor of our incentive schemes with RIIO continues to be a long term consideration. However, we do not believe that complete alignment of sharing factors is necessarily the optimum approach. Rather, an appropriate sharing factor should be related to the marginal amount of expenditure that needs to be made in order to reduce overall costs.

3.32. In proposing to develop a BSIS for 2013-15, we have set out our expectation that the revised models and methodology have improved substantially in reflecting the benefit of the actions that SO takes. However, under the current scheme, a number of model and methodology amendments have been made after the event and with the benefit of hindsight. Factors which seem to be within the SO's power to forecast or control at the time can be affected by market developments.

3.33. Given this possibility, we consider it appropriate to remain cautious before there is evidence to show that the models and methodology in place are sufficiently robust. Thus we propose to retain a sharing factor of 25%.

Cap and floor magnitude

3.34. We see theoretical arguments to both increase and reduce the cap and floor magnitude; ie the maximum £50 million reward or penalty that could be applied over the two years. Increasing the magnitude would reduce the potential that the cap or floor is hit thus increasing the likelihood that incentives will continue to apply throughout the scheme period. On the other hand, this would increase the potential magnitude of any gains or losses to NGET that could result from external factors rather than from NGET's performance in minimising costs.

Income adjusting events

3.35. The current scheme includes provisions for income adjusting events (IAEs). These allow NGET, and other market participants²⁴, to apply for post event revisions to the target as a result of events or circumstances that were not expected at the time the incentive scheme was set where these may have had a material impact on the SO's costs. Under the current scheme, NGET, and other market participants, can only apply for an IAE if the unforeseen event has resulted in unexpected costs or savings of greater than £2 million. This limit is known as the materiality threshold.

3.36. We are aware that stakeholders have concerns that the IAE provisions can result in ex post changes to BSUoS charges. Even without an IAE being raised, the possibility of an IAE places uncertainty on industry as to the final performance of the SO against the target. With that in mind our longer term objective continues to be the removal of provisions for IAEs.

3.37. We propose to consider the requirement for IAEs in relation to our position towards the structure of the two year scheme in addition to the risk/reward profile under the scheme as a whole. Regardless of the approach we take towards this structure we propose to raise the materiality threshold and limit the scope for IAEs to be raised.

Considering the requirement for IAEs

3.38. We previously set out two options for how a two year scheme could be structured. Our proposals for treatment of IAEs depend to some extent on the structure of the two year scheme. Under our proposals for a 'two by one year' approach we would consider whether IAE provisions continue to be needed.

3.39. The level of risk and liability on NGET is higher when the scheme is applied over a longer time period. With a 'one by two year' scheme, there is a risk that an unforeseen event in the first year could lead to the overall scheme cap or floor being hit. This could lead to the incentives on the SO being dampened for the remainder of the two year scheme.

3.40. A 'two by one year' scheme will increase the likelihood that the cap or floor may be hit within either year of the scheme. However, evaluating NGET's performance in each year of the scheme separately provides additional protection to NGET in that an unforeseen event could only lead to the cap or floor being hit in any one year and performance would be reset at the mid-scheme period. This increases the likelihood that the scheme will continue to incentivise the SO over the full duration of the scheme. Thus, in the case that we take forward our proposals for a 'two by one year' scheme we consider there to be a potential case for removal of the IAE provisions.

²⁴ This refers to any other Party where 'Party' is as defined in the Balancing and Settlement Code

The materiality threshold

3.41. In the case that we retain provisions for IAEs, we propose to raise the materiality threshold and limit the scope for IAEs to be raised regardless of the approach we take towards scheme structure. A number of methodology changes in the current scheme have reduced the potential for unforeseen events to impact on the costs of the SO. We include proposals for a number of further changes in this document. Thus, we consider the potential for IAEs to be required by NGET to be reduced. This should be reflected by reducing the possibility that they will be used, thus providing stakeholders with greater certainty.

3.42. NGET has indicated to us that they may be prepared to raise the materiality threshold and limit the circumstances in which an IAE can be raised to circumstances outside of their direct control. We note that NGET put forward a package of proposals which included this provision and that this proposal was based on the position on a number of other parameters. We agree that policy towards other key parameters is important when considering the requirement for IAE provisions.

3.43. We are keen to hear the views of stakeholders with regards to IAE provisions under the alternative approaches towards structure of the scheme that we have set out. We are interested in whether a 'two by one year' scheme and provisions for mid-scheme updates to key inputs may provide sufficient protection for NGET against the risk of unforeseen events. Following responses to this consultation we will consider whether IAE provisions continue to be required and the appropriate scope for IAEs to be raised.

Timing of scheme application

3.44. We noted previously that there will be a period of time after expiry of the current scheme on 31 March 2013 before the licence conditions which implement a new scheme would become effective. Under our expected timeline, licence conditions for a new scheme would take effect around early September 2013. This would leave a period of five months without a formal scheme in place.

3.45. We propose to effectively apply the scheme on NGET from the date of our modification direction which we expect to publish in early July 2013. To cover the remaining period from 1 April to publication of our modification direction where no incentive scheme is in place, we propose to apply the scheme which is introduced on a retrospective basis from 1 April 2013.

Effective scheme application

3.46. NGET has agreed in principle that a scheme could be effectively applied ahead of licence conditions taking effect. We expect to publish our modification direction which in early July. Our modification direction effectively sets out the licence

conditions which would apply under the scheme²⁵. This is followed by a 56 day notification period before the licence conditions actually take effect. Thus we consider that sufficient clarity on the scheme will have been provided at this stage to allow NGET to consider the actions that they take in respect of the scheme design.

3.47. If a scheme was applied from the date of our modification direction, there would be just over three months remaining between expiry of the current scheme on 1 April 2013 and the licence changes effectively being introduced.

Retrospective application

3.48. Under our proposals for retrospective application the scheme would be applied retrospectively to 1 April 2013 once the details of the scheme have been agreed and the models are able to generate a target. This approach would ensure that NGET continues to be incentivised to minimise balancing costs within this period. This also avoids the introduction of any perverse incentives for NGET to take more costly actions such as planned outages in the period of time where no incentives are in place. Finally, it avoids the requirement for more onerous scrutiny of NGET's actions.

3.49. We are aware that industry participants are generally sceptical of retrospective changes due to the correction required to BSUoS charges. We note that the correction to charges would only be required to account for the percentage of the charge resulting from the incentive scheme. Under these proposals, this adds up to a maximum correction requirement of just over $\pm£2$ million for each month in which the scheme is retrospectively applied. Assuming that the scheme can be applied from the date of our modification direction this leads to a maximum required correction of just over $\pm£6$ million. In addition, it is possible to apply the required corrections to BSUoS charges in a number of ways. This includes correcting charges prospectively, for example by aggregating the required changes over a number of months.

3.50. The alternative is to refer solely to special licence condition C.16 over the three month period from expiry of the current scheme to effective introduction of the new scheme. This licence condition requires NGET to operate the electricity system in a coordinated, economic and efficient manner. Under this approach, we would continue to monitor NGET's actions within the intervening period to ensure that they are consistent with the licence condition.

3.51. Given the advantages of retrospective application and the relatively minor requirements for corrections to BSUoS charges, we propose retrospective application of the scheme which is introduced in 2013.

²⁵ Following issue of our modification direction which sets out our decision to modify the licence, there is a 20 day appeal window. In this window, the licensee and certain industry parties may seek to appeal the proposed licence conditions set out in the modification notification.

4. Additional Incentives

Chapter Summary

This chapter sets out our approach towards a number of additional focussed incentives that we have been considering alongside our scheme proposals.

Question box

Question 1: What are your views on the additional incentives that we are proposing to include alongside a BSIS?

Question 2: In particular, what are your views on the merits of including a discretionary reward scheme alongside a BSIS? And what are your views on our proposals for the parameters of a scheme?

Question 3: What are your views on the additional incentives that we are proposing not to include alongside a BSIS?

Question 4: Do you agree with our proposal not to include a BSUoS forecasting incentive? What measures could help to reduce volatility of BSUoS charging going forwards?

Discretionary Reward

4.1. Alongside our cost disallowance proposals we had intended to develop an 'efficiency in system operations rewards scheme'. This would provide NGET with a route through which it could apply for funding for beyond business as usual actions in developing new and innovative ways of balancing the system that lead to net benefits for consumers. Under this approach, the system operator (SO) would be able to receive a reward of 25% of the net benefit to consumers of any project, subject to an overall cap of £25 million per year.

4.2. We propose to retain aspects of this reward scheme alongside a BSIS and will continue to consider stakeholder views on design of a scheme that were previously raised in response to our October 2012 consultation. We consider that the discretionary reward will provide an incentive for NGET to consider longer term and more innovative thinking. However, we consider that we would need to adjust certain aspects of a reward scheme to reflect the change in context of the use of a discretionary reward given our proposals to introduce a BSIS.

4.3. It is important to note that there are mechanisms being introduced which will provide a means for the SO to apply for innovation funding. The Network Innovation Competition²⁶ (NIC) and Network Innovation Allowance²⁷ (NIA) have been

²⁶ The Electricity NIC Guidance document can be found at the following link:
<http://www.ofgem.gov.uk/Networks/nic/Documents1/Electricity%20NIC%20Governance%20Document.pdf>

implemented through the RIIO-T1 price control. The NIC is an annual competition worth £27 million per year to fund selected flagship projects that could deliver low carbon and environmental benefits to customers. The NIA will be used to fund smaller innovation projects. The Environmental Discretionary Reward (EDR)²⁸ provides up to around £4 million each year to the three TOs (in the case of NGET this includes actions under its SO role also) based on their performance against a number of strategic and operational environmental categories. Performance under these categories is measured against a scorecard and funding awarded to each of the three companies on this basis.

Discretionary reward characteristics

4.4. Rather than encouraging development of new innovation, the reward scheme described here would be used to encourage the roll-out and trial of more proven innovations at a later stage of development. In order to avoid potential 'double funding', application for funding under one scheme would restrict the SO from applying under another.

4.5. To maintain consistency with the BSIS we propose to include a sharing factor of 25% of the net benefit to consumers of any project. The maximum overall reward allowance would be £10 million in each year of the scheme. We are aware that this is a lesser amount than the £25 million previously proposed. However we note that alongside the cost disallowance scheme the discretionary reward (as well as the NIC and the NIA) was previously the sole means of incentivising the SO to benefit from innovative thinking and actions beyond business as usual. Under a BSIS, innovation and trialling that may lead to within scheme benefits is incentivised through potential rewards under the BSIS itself.

4.6. The £10 million available in each year compares to a total allowance of £27 million per year between all SO and TO licencees which is available under the NIC. Given that funding under the discretionary reward would only be available to the SO we consider this level of funding to be proportionate.

4.7. This discretionary reward would encourage the SO to work towards a number of longer term objectives where direct financial incentives to improve performance are more difficult to achieve within a two year scheme.

4.8. In developing a discretionary reward we would not specify the projects that the funding could be used to support. Rather, we would expect NGET to develop

²⁷ The Electricity NIA Governance document can be found at the following link:
<http://www.ofgem.gov.uk/Networks/nic/Documents1/Electricity%20NIA%20Governance%20Document.pdf>

²⁸ The Guidance document for the EDR can be found at the following link:
<http://www.ofgem.gov.uk/Networks/Trans/PriceControls/RIIO-T1/ConRes/Documents1/SHEedr.pdf>

ideas for roll-out or trialling of innovation which goes beyond that which it should be incentivised to deliver under a BSIS. The onus of proof would be on NGET to provide justification of why the project will benefit consumers beyond the existing scheme period and why the incentives set out under a BSIS would not be sufficient to encourage project delivery.

Wind Generation Forecasting Incentive

4.9. NGET as SO is uniquely placed to provide timely information to the market about the level of renewable generation. This information will be particularly important to facilitate the move to a sustainable energy sector. As a result, we proposed an output incentive on renewable generation forecasts in our initial proposals. This proposal was broadly along the lines proposed by NGET in its business plans.

4.10. We continue to believe that accurate forecasting of renewable output is important as the volume of this type of generation continues to increase. This information should:

- Facilitate the GB energy market move to a sustainable energy sector;
- Help stakeholders to balance their position more accurately; and
- Enable NGET to minimise costs of operating margin in the BM.

4.11. Given the proposed two year scheme length, the vast majority of metered output included within the incentive will be wind generation. Thus for the purposes of our proposed scheme we would limit the scope of the incentive to metered wind generation only. We expect the scope of future incentives to expand as other types of intermittent renewable generation increase their contribution to the energy mix.

Key parameters

4.12. We have carried out empirical analysis to define an efficient output measure and targets for the incentive. Based on this, we propose a forecast accuracy target based on the mean absolute error (MAE)²⁹ output index. The target would be on the accuracy of the day-ahead forecast of wind output which NGET currently produces daily at 5pm.

4.13. We have defined our proposed targets based on the historical performance of NGET's forecasts over the last 18 months. We have then applied a discount factor

²⁹ The MAE measures the average magnitude of the errors in a set of forecasts, without considering their direction i.e. whether there has been an under- or over-estimate. It is one of two metrics commonly used to measure the accuracy of wind forecasts.



order to ensure that NGET are incentivised to improve their forecasting performance. We propose an initial set of winter and summer targets for each year:³⁰

- 2013/14: Winter 6.25% Summer 4.75%
- 2014/15: Winter 6.00% Summer 4.50%

4.14. We note that the proposed 2014/15 winter target is 0.5 percentage points higher than that suggested in our July consultation paper. This reflects further statistical analysis and our consideration that this will provide a fairer balance between the incentive to improve performance and the ability of the SO to gain from the scheme.

4.15. To reflect the maximum amount of £250k that can be earned by NGET in any month we propose to include a floor of -£250k which would only be reached if the error in the forecast was twice the target.

4.16. In addition to our financial incentive we propose to introduce a requirement on NGET regarding the number of forecasts of wind generation that they publish. We would increase the requirement on the number of daily forecasts offered to market participants to two over the scheme length with a view to increasing this further in future schemes. The figure below demonstrates the structure of the incentive:

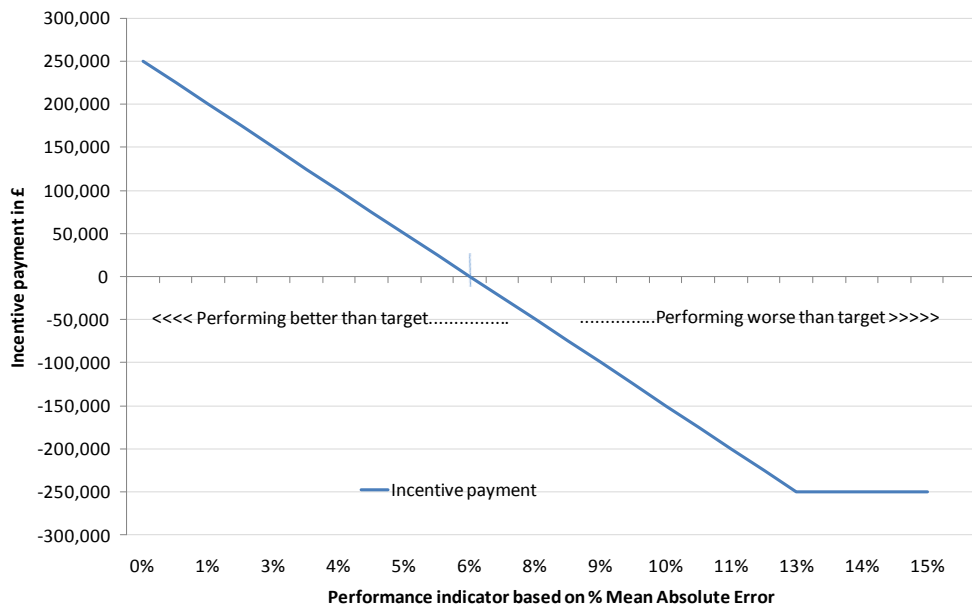


Figure 2: Parameters of a Wind Generation Forecasting Incentive

³⁰ Recognising that it is generally easier to produce more accurate summer forecasts than winter forecasts, we propose to introduce separate summer and winter targets. The targets for the first year are approximately 0.5 percentage points below the level of accuracy that NGET has historically achieved. The second year is based on average decline of 0.25%.

NGET's views

4.17. NGET agrees with the introduction of a financial incentive on the accuracy of its wind generation forecasting in principle. It also welcomes the use of seasonal targets to more appropriately reflect the seasonal variations in wind output. However, it argues that the effective cap on the incentive at 0% accuracy presents an unattainable target and have submitted counter proposals which introduce a cap at a more achievable level of accuracy.

4.18. We do not consider or intend a 0% cap to represent an achievable target. Introducing a cap at an achievable target risks a lack of incentives to improve performance in the case that NGET is regularly able to achieve this level of accuracy. Our proposals would ensure that NGET continues to be incentivised to increase its accuracy as it can continue to gain financially from doing so.

4.19. In developing these incentive parameters, we have taken account of NGET's historic forecasting performance. We have applied a small discount factor to this historic performance so that NGET is required to improve performance, rather than maintain the same level in order to gain from the scheme. However, we believe that the scheme parameters that have been set provide an appropriate level of opportunity for NGET to achieve a reward through continuing to improve their forecasting performance.

Transmission Losses Reputational Incentive

4.20. Currently, NGET as system operator is the only market participant that has an explicit financial incentive with regard to transmission losses. Under the current incentive scheme, a target volume is set with any difference between the target and the actual level (either positive or negative) being multiplied by a wholesale reference price to give a cost. This cost is then added to or subtracted from the total incentivised balancing scheme costs.

4.21. Annual losses on the transmission system historically have been around two per cent of demand. However, these are expected to increase, particularly as a result of new generation locating at the extremities of the network. In 2011/12 transmission losses were significantly higher (6.2 TWh) than forecast (4.5 TWh) and higher than historic levels. One of the drivers of this increase has been coal generation (mainly located in the north) being "in the money" and replacing southern CCGTs in the merit order.

4.22. The increase in the level of transmission losses for 2011/12 compared to the forecast (against which the incentive scheme target was set) has resulted in a cost of around £65m being added to the total incentivised balancing scheme cost.³¹

³¹ This is not exact and is subject to change as the current scheme is set for a two year period. However, this gives a reasonable view of the effect that the increase in losses may have on the current scheme.

4.23. We recognise that NGET only manages a small proportion of the volume of energy (approximately 3% that it manages in the BM).³² In addition to this, NGET only has limited influence on the level of losses in some of the actions that it takes in balancing the system.

4.24. NGET submitted a proposal for a financial incentive on losses which it believed could overcome some of the problems seen under the current scheme as part of its business plan. However, NGET also suggested that its scope to minimise losses is small and questioned whether a financial incentive on losses is appropriate.

4.25. We believe that a financial incentive is unlikely to yield material results in terms of lower losses, given the relatively limited scope for actions by the SO. In addition, given the growing level of unpredictability of the level of losses on the system, we consider that a financial incentive introduces a risk of windfall gains or losses. Therefore, we propose to remove the current financial incentive and replace it with a reputational incentive.

Incentive scope

4.26. In designing a reputational incentive we would look to extend the principles of the RIIO-T1 reputational losses incentive to also cover the SO. The RIIO-T1 incentive proposes that in the first year of RIIO-T1, the TOs set out their strategy for reducing losses to a level that is lower than it might otherwise be (while recognising that as more remote generation connects to the network losses are likely to increase). This strategy might include, for example, how the TOs will take any trade-offs between price and loss levels into account when procuring transmission equipment. In each subsequent year of RIIO-T1 the TOs will be required to report on the implementation of this strategy and to make a best estimate of the difference that they have made to transmission losses.

4.27. To complement this information, we propose that the SO should also have to estimate the difference it has made to transmission losses and to publish information on the overall losses and an explanation of the key drivers of losses. We propose that this should include reporting on the following:

- A description of relevant balancing activities and how losses can or cannot be taken into account, as well as how the SO takes losses into account in the relevant areas and an estimate of the effect that this has on transmission losses.
- Reporting on actions to manage reactive power in order to optimise resulting system costs including the effect on losses

³² Approximately 60% of transmission losses are the result of the distance electricity travels from the point of generation to the point of demand. Approximately 40% of losses are associated with system assets (e.g. transformers).

- Considerations of market developments which may impact on the level of losses:
 - Describing the development, and drivers behind the development, of transmission losses over the past two years
 - Consideration of the likely future developments of transmission losses in GB, both qualitatively and quantitatively. This should include the effect that the development of technology, such as growing penetration of renewable, could have on losses.
 - Describing how transmission losses are taken into account in the SO's planning activities, eg in the development of the Electricity Ten Year Statement

4.28. We note that NGET already publishes some information on transmission losses. NGET's ten year statement (TYS)³³ sets out the impact of different future transmission solutions on transmission losses amongst other things. Under the current licence condition, NGET also reports to us both through its monthly balancing services statement and an annual report (which includes similar information).

4.29. In the place of a financial incentive, our proposals would go beyond the information that NGET are already publishing under these reports. However, they present opportunities to streamline the information that we are requesting with the reporting that NGET already performs. This should help to minimise any increase in reporting burden for NGET.

Model Development Licence Condition

4.30. We developed our previous proposals on cost disallowance and discretionary reward as a result of a lack of confidence in the robustness of the models and methodology which underpins a target based BSIS approach. Alongside these proposals we had planned to develop a licence condition which would require NGET to continue with the development of its models in order to ensure that a target based approach could be adopted and based on the use of the models in the future.

4.31. The level of confidence that we have in the models has been, and continues to be, a key part of our decision to develop proposals for a BSIS in 2013. We consider one of the benefits of retaining a BSIS for a 2013-15 scheme to be the continued learning that can be achieved through use of the models to set targets which have a financial implication for the SO.

³³ NGET's TYS can be found at the following link:
http://www.nationalgrid.com/NR/rdonlyres/DF56DC3B-13D7-4B19-9DFB-6E1B971C43F6/57770/10761_NG_ElectricityTenYearStatement_LR.pdf

4.32. However we are also conscious that the role of the SO is changing with developments in the electricity market. Alongside our development of an enduring approach towards how we regulate the SO, we believe that the models must continue to develop to be ready for the emerging challenges with balancing the system. Thus we consider there to be a requirement for the SO to look beyond the current scheme to ensure that the models can forecast the costs of balancing the system as accurately as possible in the future. We therefore see merit in continuing with our proposals for a model development licence condition.

4.33. This licence condition would focus on ensuring that the models are ready for use in 2015. We appreciate that there continues to be some uncertainty around the exact route that these developments may take. However, we consider that the SO is becoming increasingly well positioned to understand how its role may be affected. In addition, we expect the greater stakeholder engagement on the models to provide an opportunity for NGET to stress test its plans for developments to the models. We will expect the SO to use its best endeavours in identifying market developments, the impact on the future role of the SO and how the models may need to adapt to reflect this.

Stakeholder Engagement

4.34. The licence condition that we propose to set out would also have an important focus on engaging with stakeholders and including them in the development process. In developing a scheme for 2013, stakeholders have suggested that they have not been provided with sufficient understanding of how the models work to define a target. NGET has recognised this more recently and have worked to provide stakeholders with information about how the models work.

4.35. Our licence condition would include requirements on NGET to engage stakeholders in the process. For example we would look to include the following:

- Requirement for NGET to provide regular updates to stakeholders of model developments. We expect that this should be on at least a quarterly basis and the Operational Forums could be used to provide this update.
- Requirement for NGET to consult stakeholders on large scale modelling developments. Where changes go beyond improvements to the current modelling, for example changes to modelling architecture, or new functions in reaction to market developments, we would expect NGET to proactively consult on these changes with industry participants.

Balancing Services Use of System Charge Forecasting Incentive

4.36. Alongside our cost disallowance proposals we had proposed to introduce a financial incentive on the accuracy of NGET's forecasts of balancing services use of system (BSUoS) charges.

4.37. This incentive was intended to ensure that industry participants were provided with a forecast of BSUoS charges that were as accurate as possible in the absence of a cost forecast which would be generated for the purpose of developing a target. Under our proposals for a BSIS, NGET would produce a forecast of costs using the models. This would also allow forecast BSUoS charges to be estimated.

4.38. Thus, we believe that there no longer continues to be a requirement for a BSUoS charge forecasting incentive if a target based scheme is introduced. Indeed, we identify a risk of creating perverse incentives if both schemes are in place. This could arise from the potential for the incentives on NGET to pull them in different directions with the BSIS incentivising them to reduce costs while the BSUoS forecasting incentive may reward them for costs increasing to get closer to the target. Thus we propose not to retain an incentive on NGET on the accuracy of its BSUoS charge forecasting.

4.39. We note the following developments in this area which may mitigate the need for an incentive on NGET to accurately forecast costs:

- **Modification CMP 208³⁴**: This modification will go live on 1 June 2013. The modification requires NGET to provide monthly updates (and supporting information) of its estimates of average BSUoS charges for each month of the following two years.
- **Measures to mitigate network charging volatility³⁵**: Similar issues to those presented here arise in relation to transmission and distribution charging. For the transmission and distribution networks, we have developed an approach in order to reduce the potential for volatile and unpredictable charges. Our decision on measures to mitigate network charging volatility improves charging information for suppliers and consumers, restricts the frequency of intra-year charge changes, and increases the lag on recovery of rewards or penalties under the price control. We ask for stakeholder views on the appropriateness of some of the measures contained in this decision. After receiving responses we will consider the applicability of these decisions.

³⁴ The Final Decision Letter of the Authority on modification 208 can be found at the following link: <http://www.nationalgrid.com/NR/rdonlyres/02B336A8-FC94-410E-84C6-F49C778A0B4E/58917/CMP208D.pdf>

³⁵ Our decision in relation to measures to mitigate network charging volatility can be found at the following link: http://www.ofgem.gov.uk/Networks/Policy/Documents1/CV_Decision.pdf

- **'BSUoS Charge Stabilising'**: NGET are also looking into the potential for reducing volatility of BSUoS charges. At our stakeholder workshop on 21 January, NGET noted work they are doing internally which is considering the options available in this regard. We will continue to monitor progress with this work as we develop our final proposals.

Industry views

4.40. NGET is in favour of the removal of this incentive. In addition to the possibility for perverse incentives, NGET argues that many of the variables that impact upon BSUoS charges are out of its control and are often hard to forecast. They therefore believe that the incentive could introduce potential for windfall gains or losses without providing any guarantee that the accuracy of forecasts would improve.

4.41. We are aware that one of the key areas of interest for stakeholders has been the BSUoS charge forecasting incentive given their concerns over the current levels of unpredictability and volatility of BSUoS charges. We note NGET's comments that an incentive will not provide any guarantee of improved accuracy given factors that are outside of their control.

4.42. In addition, stakeholders have indicated that reducing the volatility of BSUoS charges may be a more important objective than forecasting these charges more accurately. Considering the measures set out above which could reduce the volatility of BSUoS charges may therefore be preferred by stakeholders. We would appreciate stakeholders views on whether this is the case.

Black Start

4.43. Under the current BSIS, a target is set for NGET with regards to the costs of procuring the black start services that are required over the course of the scheme. This target is added to the outputs of the energy and constraints models in order to set an overall scheme target. For the current scheme, the black start allowance was set at £40m over the scheme duration.

4.44. Given that the proposed scheme would last for only two years we believe that the existing method in which a black start target is incorporated within an overall scheme presents a suitable approach. Under this approach we will work with NGET to consider the evidence and identify the amount that will be allowed for contracting the required black start services in working up our final proposals.

4.45. We note that the current methodology also allows funding for NGET to procure services from new contract providers. This should allow the SO to recover costs in the event that it needs to procure services from a new provider in the event of a current black start provider closing.

Feasibility study allowance

4.46. Alongside the development of this approach, NGET has indicated to us that they also incur cost through making contributions to the feasibility studies of potential black start plant in order to encourage competition for black start service provision. On a number of occasions, NGET has suggested that some of this cost should be allowed for under their incentive scheme.

4.47. We believe that it is important to encourage competition as far as possible in an area which is otherwise not naturally competitive. We note that there is provision for NGET to recover some of these costs under the licence conditions governing the current scheme. However, we have previously set out that we see potential merit in providing a small amount of funding allowance for feasibility studies up front which could be included within the black start target costs.

4.48. As a result, we would be willing to consider a small allowance for these feasibility studies. In order to identify the level of this allowance we would require NGET to provide evidence as to the level and volume of these costs that it expects to require over the scheme period.

Alternative approach

4.49. In considering the development of a scheme for 2013-15, NGET proposed an alternative method for dealing with the procurement of black start services. NGET proposed an approach under which a required number of black start contracts should be fixed in advance based on the methodology statement for determining black start volumes that NGET produced under Special Condition AA5J of its licence.

4.50. This proposal was based on an intention to put in place an incentive for black start services lasting for an eight year period. Within this period of time, NGET considered that it would need to sign contracts with a number of new black start providers as it expected a number of stations which currently provide black start services to close. The proposed alternative approach was intended to ensure that sufficient incentive existed on NGET to minimise costs of procuring black start services within this period.

4.51. We see potential merit in continuing to consider an alternative approach which is closer to that which we had proposed for a longer term black start incentive. Under this approach, an incentive would be tied to the forecast requirements for procuring black start services over the scheme period rather than to existing contract costs. This would involve an allowance for the procurement of new black start services to replace plant which is closing over the two year period.

4.52. NGET continues to be open to exploring alternative solutions. Following responses to this consultation, we will work with NGET to consider the options available for including the costs of black start services within an overall scheme.

Appendices

Index

Appendix	Name of Appendix	Page Number
1	Consultation Responses and Questions	41
2	Summary of SO Incentive Scheme Key Characteristics	43
3	Summary of Previous Consultation Responses	45
4	Glossary	47

Appendix 1 - Consultation Response and Questions

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

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

1.3. Responses should be received by 5 April and should be sent to soincentive@ofgem.gov.uk:

1.4. 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.

1.5. 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.

1.6. Next steps: Having considered the responses to this consultation, Ofgem intends to develop our policy before publishing our Final Proposals later this year. We expect to have licence conditions in place in the summer. Any questions on this document should, in the first instance, be directed to:

Lewis Heather
Wholesale Markets,
9 Millbank,
SW1P3GE

020 7901 7362
lewis.heather@ofgem.gov.uk

CHAPTER: One

Question 1: Do you agree with our proposal to put a balancing services incentive scheme in place for 2013-15?

Question 2: How much confidence do you have in the ability of the models to set a robust target given recent developments to the models and methodology?

CHAPTER: Two

Question 1: What are your views on making balancing mechanism 'pseudo' prices an ex post input in the energy models? What additional considerations may exist?

Question 2: What are views on the appropriate length of time for input of transmission limits? What value do you place on having forecasts ahead of time which are as accurate as possible?

Question 3: What are your views on the requirement for, and appropriate level of, a discount factor to be applied to the constraints model?

CHAPTER: Three

Question 1: Do you agree with our proposals for the key parameters of a BSIS?

Question 2: What are your views on the one year update provisions and the requirement for income adjusting event provisions?

Question 3: Do you have any views on the types of inputs that may be suitable for adjustment as part of the mid-scheme provisions?

Question 4: What do you consider to be the merits/disadvantages of applying the scheme retrospectively to the 1 April 2013? Do you consider this to be the best option for the 'interim period'?

CHAPTER: Four

Question 1: What are your views on the additional incentives that we are proposing to include alongside a BSIS?

Question 2: In particular, what are your views on the merits of including a discretionary reward scheme alongside a BSIS? And what are your views on our proposals for the parameters of a scheme?

Question 3: What are your views on the additional incentives that we are proposing not to include alongside a BSIS?

Question 4: Do you agree with our proposal not to include a BSUoS forecasting incentive? What measures could help to reduce volatility of BSUoS charging going forwards?

Appendix 2 – Summary of System Operator Incentive Scheme Key Characteristics

Characteristic	Description	Current scheme approach	Proposal for 2013 scheme
<u>Key parameters</u>			
Scheme length	Amount of time that the scheme is in place	Two years	Two years with one year update of key inputs
Cap and floor	Maximum amount that the SO can gain or lose from the scheme	±£50m over two year period	±£25m in each year of scheme
Income adjusting events (IAEs)	Provisions to apply for changes to the target in light of unforeseen events	Materiality threshold of £2m	Raise the materiality threshold. Consider removal of provisions
Sharing factor	Percentage of under/overspend that the SO retains	25%	25%
Dead-band	Under/overspend around the target in which costs are fully passed through to consumers	±£5m around target	No dead-band
Application of scheme in 'interim period'	How the SO's costs will be treated in period where no incentive scheme is in place	Retrospective application to 1 April 2011	Retrospective application to 1 April 2013
<u>Input Methodology changes</u>			
BM pseudo prices	Treatment of BM pseudo price input in energy models	Ex ante input	Ex post input
Outage plan input	Treatment of outage plan input to constraints model	At scheme commencement (up to two years ahead)	One year update (up to one year ahead)
MERRA wind data input	Input of wind data for embedded wind generation	Not used	Ex post input
Constraints model discount factor	Application of discount factor to account for business as usual actions	41%	Consider appropriate treatment and level of discount factor
<u>Additional Incentives</u>			

Electricity System Operator Incentives: consultation on a scheme for 2013

Discretionary reward	Funding for trial and roll-out of innovation that moves towards enduring approach objectives	No reward in place	£10m allowance funded through BSUoS charges
Wind forecasting incentive	Incentive on the accuracy of the SO's wind forecasting	No incentive	A maximum of ±£250k each month based on accuracy
Transmission losses incentive	Requirements for the SO to report on transmission losses	Target costs included within BSIS and subject to financial incentives	Requirement for the SO to report on their efforts to reduce losses and on system losses more generally
Model development licence condition	Requirement for the SO to develop their models used for a scheme	Licence condition to develop the models	Focus on working with stakeholders to ensure models are fit for purpose for future schemes

Appendix 3 – Summary of Previous Consultation Responses

1.7. In this appendix we summarise responses from stakeholders on the merits of a cost disallowance approach as opposed to a balancing services incentive scheme (BSIS). We include responses to our July 2012 and October 2012 consultations. As part of the two consultations we received responses from a total of ten separate industry stakeholders, seven of which replied to both.

1.8. In our July consultation, some stakeholders expressed concern with Ofgem's proposal for suspending BSIS, suggesting that little analysis had been published to support the decision. Respondents did however agree with the rationale for proposing an alternative incentive scheme. In addition to concerns with the robustness and transparency of the target setting approach, they considered there to be issues with the BSIS scheme in its current form such as a lack of long-term incentives on NGET.

1.9. One respondent agreed with the new cost disallowance approach as they believed it would help ensure that short term financial motives did not outweigh longer term network developments.

1.10. In response to our July consultation, some respondents suggested that further detail on the disallowing costs and discretionary reward scheme was required to be able to fully respond.

1.11. In response to this call for further detail, we published a second consultation on the approach in October 2012. There were a total of nine responses to this consultation.

1.12. Many respondents appreciated the additional detail set out in this document and agreed with the key parameters of a cost disallowance scheme. However, a number of respondents continued to state some concern with the incentives that the approach would place on NGET. Some indicated that the long term goal should continue to be returning to a robust financial incentives approach.

1.13. A number of respondents explicitly disagreed with the disallowing cost proposals. One respondent to our October consultation was surprised to see a new approach being developed soon after the current BSIS approach had been developed. They suggested that such a scheme would decrease the transparency of the system operators cost. Another respondent made the case for a short-term simplified financial incentive scheme that it suggested would be a better alternative than an ex-post cost disallowance scheme. Stakeholders also raised concerns that an ex-post approach may not encourage innovative behaviour from NGET.

1.14. NGET raised a number of concerns in response to both consultations. It suggested that a cost disallowance approach may have a number of unintended

consequences such as encouraging a greater dependence on the balancing mechanism rather than looking for opportunities to contract ahead. It also raised concerns with the proportionality of the proposals and with the level of clarity and transparency of how the process could work in practice. It argued that, as a result of these concerns, the approach would not work in the best interests of consumers.

1.15. The table below summarises the arguments made for and against the ex-post cost disallowance scheme as opposed to the BSIS:

Ex-post Cost Disallowance Scheme	
Points raised in favour	Points raised against
<ul style="list-style-type: none"> • The models have not been performing as expected under the recent BSIS scheme • Will reduce the risk of windfall gains or losses to the SO • A broader incentive approach will ensure that short term financial motives don't take precedence over longer term benefits of maintaining the network 	<ul style="list-style-type: none"> • Concerns raised about the process involved in a cost disallowance scheme • May result in the System Operator being more cautious in managing the system, hence discouraging innovation • May decrease the level of transparency of the System Operators costs • Statistical models would have to be used in this approach anyway, therefore questions if the same potential problems could arise as under BSIS • Removal of BSIS could lead to a lack of incentives on NGET to manage constraint costs efficiently

BSIS	
Points raised in favour	Points raised against
<ul style="list-style-type: none"> • Provides certainty for the System Operator and industry • Well established scheme • Scheme can be used to encourage long-term investment • Best way to improve the models is through using them as part of a scheme 	<ul style="list-style-type: none"> • Has been inaccurate in recent years • Considered as more focused on short-term costs • Models are too complex for industry to understand



Appendix 4 - 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 usage in order to help system reliability, to reflect market conditions and pricing, or to support infrastructure optimisation or deferral of additional infrastructure.

E

Ex ante / Ex post Inputs

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

Energy Imbalance

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

F

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

P

Plexos

A modelling tool for power market analysis.

Price control

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

R

Reactive Power

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

Reopeners

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

RIIO-T1

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

S

Sharing factors

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

Short Term Operating Reserve (STOR)

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

SO External costs

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

SO Internal costs

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

Stakeholder

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

Sustainable energy sector

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

System Operator (SO)

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

T

Third Package (Third Internal Energy Market Legislative Package)

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

Transmission losses

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

Transmission Owner (TO)

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

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

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:

2. Do you have any comments about the overall process, which was adopted for this consultation?
3. Do you have any comments about the overall tone and content of the report?
4. Was the report easy to read and understand, could it have been better written?
5. To what extent did the report's conclusions provide a balanced view?
6. To what extent did the report make reasoned recommendations for improvement?
7. 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