

**Consultation  
Document 1**

**National Grid Gas (NTS)  
System Operator  
Incentives  
for 1 April 2010**

Version 1.0

**Issued 31 July 2009**

**Responses requested by 28 August 2009**

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## Executive Summary

At Ofgem's request National Grid has led on the development and consultation on Initial Proposals for System Operator (SO) Incentives for the last two years. The earlier start to last year's consultation process allowed for a fundamental review of the incentive schemes and amongst other things resulted in the introduction of an Unaccounted for Gas incentive, which along with the Shrinkage incentive was set for three years.

Through an open letter issued on the 28 May 2009, Ofgem has again asked National Grid to lead on the consultation of Initial Proposals for SO Incentives (for incentives commencing April 2010).

This letter, along with Ofgem's Final Proposals document (issued 27 Feb 2009) have highlighted some key areas that Ofgem would like to see included in this year's consultation, including

- Options for multiple year incentive schemes
- Consideration of new incentives around maintenance and fugitive emissions
- Increased levels of information provision on incentives
- Wider levels of industry and consumer engagement in the consultation process

In response, National Grid has discussed SO incentives at a number of industry meetings and has also met interested parties on a bilateral basis. This consultation builds on the feedback from these meetings and the industry responses to Final Proposals last year. The document asks a number of questions, the responses to which will help us in the development of Initial Proposals.

Two further consultations will be issued in the near future, these will cover the topics of Environmental Incentives and Operating Margins.

**Responses to the consultation should be sent to  
[soincentives@uk.ngrid.com](mailto:soincentives@uk.ngrid.com)**

**by 5pm on 28 August 2009**

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## Section 1 Introduction

*This section provides an overview of the process being followed for the development of SO Incentives commencing 1 April 2010 and puts this consultation document into a wider context.*

### Background

1. National Grid Gas operates the high pressure Gas Transmission System in Great Britain. This system operation function is subject to a number of financial incentive arrangements which encourage the minimisation of the overall cost of balancing to consumers, to consider environmental impacts and to support the efficient operation of the wholesale gas market. A number of these incentives expire at the end of March 2010.
2. These incentives are designed to deliver benefits to the industry and consumers. These benefits include direct financial benefit from reductions in the costs associated with operating the gas transmission network and other benefits from meeting key performance measures (such as through improved information provision to the market).
3. The various incentive schemes provide a focus on key areas where National Grid is able to create value for the industry and consumers, allowing National Grid to retain a share of any value created (or to bear some of the costs should targets not be met).
4. Through the meetings on SO incentives already held this year, parties have indicated that provision of additional information on SO incentives would aid understanding and facilitate increased levels of engagement in this consultation process. Specifically, a summary of the schemes in place, the historic levels of performance and how performance relates to charges faced by consumers has been requested. This supporting information is contained in Section 9 and Appendix 1 of this document.
5. National Grid has led the last two consultation processes<sup>1</sup> on the development of Initial Proposals for Gas SO Incentives. The earlier start to last year's consultation enabled a fundamental review of the incentives to take place and resulted the incentives for Shrinkage and Unaccounted for Gas (UAG) being set for three years, with a number of other incentives being set for one year.
6. Via an open letter, published on 28 May 2009<sup>2</sup>, Ofgem has asked National Grid to lead on the development of Initial Proposals for SO incentives commencing April 2010. The letter summarises Ofgem's views on the

<sup>1</sup> For Incentives commencing 1 April 2008 and 1 April 2009.

<sup>2</sup> <http://www.ofgem.gov.uk/Markets/WhlMkts/EffSystemOps/SystOpIncent/Documents1/Open%20Letter%20final.pdf>

objectives, process and timetable for this year's process and topics for this year's consultation. National Grid's response to this letter can be found on the National Grid website<sup>3</sup>.

### Consultation Process

7. In its letter, Ofgem recognised the valuable contribution made by the industry in developing the schemes from April 2009 and goes on to state that it is keen to further promote engagement from industry participants, end customers and smaller gas suppliers in this year's process. In response, National Grid has presented at a number of industry meetings and arranged bilateral discussions with interested parties to highlight the issues for this year's consultation. A copy of the slides used at these meetings can be found on our website.<sup>4</sup>
8. If you would like National Grid to present at any future meeting or would like to meet on a one to one basis to discuss this year's consultation, then please contact us using the contact details in section 10 of this document.
9. National Grid will be issuing three independent consultation documents this summer, the focus of each document is summarised below. Each document will have a four week consultation period.

Document	Topics
1	Residual Balancing, Demand Forecasting, Maintenance, Data Publication, System Flexibility, CV Shrinkage, Information on Incentives, bundled and unbundled schemes
2	Environmental Incentives
3	Operating Margins

10. The consultation documents will not contain detailed proposals for SO Incentives schemes to apply from 1 April 2010. They are intended to invite industry views on a range of issues that might drive the form and structure of incentives schemes.
11. The responses to the three consultation documents, along with the feedback provided at the industry and bilateral meetings, will be used to aid our understanding of the industry's view of the behaviours that would promote the efficient operation of the market, and help align incentives with the value adding activities that National Grid undertakes as SO. This information will feed into our development of Initial Proposals for incentives to apply from April 2010. Our aim is to issue an SO Incentives Initial Proposals consultation

<sup>3</sup> <http://www.nationalgrid.com/uk/Gas/soincentives/docs/>

<sup>4</sup> <http://www.nationalgrid.com/NR/rdonlyres/A6C7562E-3E58-4378-942D-DE0B87D1C776/35977/SOIncentivedevelopmentpresentation.pdf>

document in October, with a consultation period closing by mid December.

12. During the consultation period, National Grid will host an industry event where the Initial Proposals will be presented and questions on the proposals will be invited.
13. Following industry feedback on last year's process, in its letter of 28 May, Ofgem has indicated that it will come forward with initial comments during the consultation on Initial Proposals.
14. On conclusion of the Initial Proposals consultation, National Grid will issue a consultation report incorporating the responses received from interested parties which will be published on our website. The report and all responses will be sent in full to Ofgem. In early 2010, Ofgem will develop and consult on its Final Proposals for SO Incentive schemes.

<b>June/July 2009</b>	<b>Initial industry consultation/ engagement</b>
<b>July/August 2009</b>	<b>Publication of consultation documents</b>
<b>October 2009</b>	<b>Publication of Initial Proposals</b>
<b>November 2009</b>	<b>Industry event</b>
<b>November 2009</b>	<b>Ofgem to provide initial comments</b>
<b>December 2009</b>	<b>Initial Proposals consultation period closes and consultation report issued</b>
<b>Early 2010</b>	<b>Ofgem consultation on Final Proposals</b>
<b>April 2010</b>	<b>Incentives schemes start</b>

### Summary of the consultation process

15. Throughout the process, the SO Incentives area of the National Grid website will be kept updated with all relevant documents. A link to this part of our website is included in the contact details in Section 10 of this document. National Grid can be contacted using these contact details to discuss any aspects of SO Incentives.
16. Responses to this consultation will be published on National Grid's website and are requested by 28 August 2009.

### Structure of this Document

17. This consultation document considers a number of factors where industry views on potential developments to the range of SO incentives are invited. The remainder of the document is structured as follows:
  - Section 2 discusses the advantages and disadvantages of bundled and unbundled incentive schemes.

- Section 3 describes the current Residual Balancing Incentive and the changes that were made to this incentive last year, inviting views on the need to further refine the parameters of the scheme.
- Section 4 describes the current Demand Forecasting Incentive and asks questions about potential future developments to this incentive.
- Section 5 describes the current Data Publication Incentive and invites views on the need to review this incentive.
- Section 6 summarises the current maintenance planning processes, provides data on the current operation of these processes and invites views on potential options to incentivise maintenance planning.
- Section 7 describes the information that is currently provided on incentive performance and requests views on proposed improvements that could be made to this information.
- Section 8 provides an overview of the current discussions on System Flexibility and how this might interact with SO incentives and then summarises the progress that has been made in engaging the industry on the developments to the CV capping rules.
- Section 9 provides a summary of the consultation questions.
- Section 10 provides our contact details for any party that wishes to contact us to discuss any aspect of this consultation, or arrange a bilateral meeting.
- Appendix 1 provides a summary of the existing incentive schemes and historic performance under the schemes.
- Appendix 2 contains a table showing the quarterly information that was provided on incentives for 2008/9.

## Section 2

# Bundled and Unbundled Schemes

*In its letter of 28 May 2009, Ofgem asked National Grid to evaluate the extent to which it is appropriate for the incentives to operate on a bundled or unbundled basis. National Grid currently has seven shallow incentives which could be bundled together or further unbundled. This section discusses the options and implications of such bundling or unbundling.*

### 2.1 Background

18. National Grid currently has seven separate shallow SO incentive schemes, each relating to a distinct SO activity. These separate schemes are classed as unbundled (i.e. each scheme operates on an independent basis), although there is scope to further unbundle the schemes<sup>5</sup>. This is in contrast to the Balancing System Incentive Scheme (BSIS) that currently operates in the electricity sector on a bundled total cost basis.
19. Bundled schemes can easily be applied to incentives that operate on an overall cost minimisation basis, with the scheme incentivising the SO to focus on those areas where large cost savings can be made. The simplicity of the scheme design allows easy performance monitoring (total costs against target cost). However, bundled schemes are less well suited to incentives where the objectives are not cost minimisation, for example where schemes are set on a performance target basis (e.g. demand forecasting) or where there are more than one driver to the cost.
20. In contrast an unbundled scheme with a larger number of incentives, increases the complexity of the arrangements and can make it less easy to judge overall SO performance. It does however increase transparency over the performance delivered in each area. Furthermore having a range of unbundled incentives allows schemes to be set with a range of objectives, targets and sharing factors. The flexibility offered through these parameters allows individual schemes to be set to either reflect the size of the activity, the value of the activity to the market, the level of control National Grid has over a certain outcome or to focus National Grid's resources towards a particular area of industry concern.
21. The following paragraphs discuss the options and implications of bundling or unbundling the existing seven shallow gas SO Incentives, inviting views on whether bundling or further unbundling would be beneficial.

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<sup>5</sup> E.g. Unaccounted for gas (UAG) was unbundled from the Shrinkage incentive last year

## 2.2 Option to bundle the current National Grid Shallow Incentives

22. The following table summarises the seven current shallow incentives and the performance measure that is used in each of the incentives. As five of the schemes have their own performance measures there is no simple option for bundling all of the schemes (or combinations thereof) together in their current forms.

Scheme	Performance Measure
NTS Shrinkage	Cost
Operating Margins <sup>6</sup>	Cost
UAG	Absolute level of UAG
Residual Balancing	Linepack and price measures
Demand Forecasting	Level of forecast error
Data Publication	Timeliness and availability
NTS Environmental	Mass of natural gas vented from NTS compressors

**Table 2.1 - Existing Gas SO Incentive Performance Measures**

23. If it were identified that any schemes sufficiently interacted (or shared a performance measure) allowing National Grid to optimise performance between schemes then there may be benefit in considering changes to the incentive structures to facilitate a bundled incentive. This would need to include the setting of appropriate targets, sharing factors, caps and collars for any new bundled scheme.
24. Bundling of schemes does, however, introduce a risk that the available resources focus on the parts of the incentive where larger value can be delivered to the detriment of some of the smaller value activities. Correctly designed unbundled schemes can avoid this risk by using separate incentives to ensure focus is maintained in all areas.
25. National Grid is of the opinion that none of the existing schemes would benefit from a bundled incentive<sup>7</sup>, but invites views on this.

## 2.3 Option to further unbundle the current National Grid Shallow Incentives

26. As discussed previously, further unbundling of schemes can allow greater transparency of incentive performance and allow schemes to be set that focus National Grid resources in specific required areas. However there is the risk

<sup>6</sup> For 2009/10 there is no incentive on OM holding costs although there is an OM utilisation incentive

<sup>7</sup> We recognise that Shrinkage and OM share a cost minimisation objective but given the different nature of the activities we do not see obvious benefits that could be achieved through bundling the existing incentives

of increased complexity through the number of schemes with the potential to create interacting incentives with competing objectives.

27. There are clearly some examples where further unbundling could be considered, e.g. the residual balancing incentive which contains two distinct elements (the linepack measure and the price performance measure). However, as these two components work together to deliver the desired residual balancing behaviour it is not obvious what the benefit would be from separating these into separate incentive schemes.

## Conclusions

28. National Grid believes that unbundled incentives provide greater transparency and the ability to design incentives schemes targeted to achieve specific outcomes for the industry and consumers. However, where there are interacting activities (i.e. where we are able to make choices between them), it is sensible to have a bundled incentive (e.g. residual balancing).
29. Overall we believe the level of bundling/unbundling of the existing shallow incentive schemes results in schemes which are sufficiently transparent and targeted at the correct objectives. However, we are inviting views on whether industry and consumers would value bundling or further unbundling of schemes.

Question 2.1	Would you support bundling some or all of the shallow SO incentives? If so please explain which schemes should be bundled, what an appropriate performance measure would be and what benefits this would deliver?
Question 2.2	Would you propose unbundling any of the existing SO incentives schemes? If so please explain the benefits that you believe would be achieved from this?

## Section 3

# Residual Balancing Incentive

*This section summarises the existing Residual Balancing Incentive which was set after a fundamental review of the scheme last year. Data is provided to enable a comparison of the operation of the current scheme to the scheme for previous years. Given the limited data available no proposals for changing the structure of the incentive are made, however views on the need to further refine the scheme parameters are invited together with views on the barriers to setting a scheme for more than one year.*

### 3.1 Background

30. Shippers have the primary role in ensuring there is sufficient gas supply to meet demand on any particular day, and the cashout mechanism provides commercial incentives to encourage shippers to resolve their own supply/demand positions by the end of each gas day.
31. In its role as residual balancer, National Grid has responsibility for managing any residual system end of day imbalance position and ensuring that NTS pressures are maintained within safe limits at all times within the day. In fulfilling this role, we primarily take energy balancing trades on the 'On the day Commodity Market' (OCM) National Balancing Point (NBP) title market.
32. The way that National Grid undertakes its role as residual balancer is important as it affects the industry and consumers in a number of ways:
  - The price of any trades directly impact on the cashout prices faced by shippers, which indirectly affect the system average price (SAP) and also future gas prices.
  - The carrying over of physical imbalances to subsequent days could potentially lead to the costs associated with resolving those imbalances being misaligned from those parties that caused them.
33. The Residual Balancing Incentive is designed to incentivise National Grid to consider the implications of our actions on the market, particularly how and when we trade in the market. As a result of the incentive National Grid minimises its market impact through signalling a requirement for more or less gas on the network through a small trade, rather than undertaking larger trades to solve the requirement in full. The incentive design therefore encourages the delivery of the behaviours and outcomes desired by the shipping community.
34. If there were no residual balancing incentive, National Grid would balance the system to the physical needs of the NTS. This would in all likelihood lead to a greater spread in the marginal prices on some gas days, which could in turn lead to greater volatility in market prices.

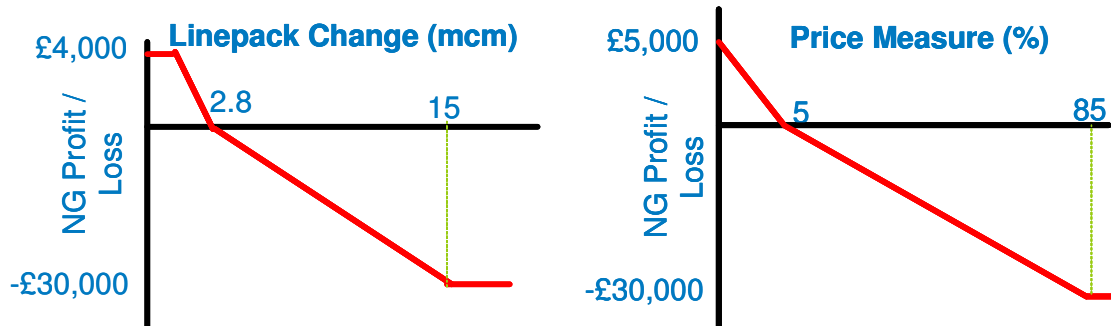
### 3.2 Design of the Residual Balancing Incentive

35. The current incentive contains two elements, the Price Performance Measure (PPM) and the Linepack Measure (LM). The two elements are described in the following paragraphs.
36. As National Grid has no direct exposure to the costs of its balancing actions, the PPM is set to encourage National Grid to trade efficiently on behalf of the community, minimising the overall costs passed to neutrality and paid by shippers, and minimising its impact on cashout prices.
37. On its own the PPM would incentivise National Grid to avoid taking balancing actions whenever possible. Where actions were required, the incentive would encourage National Grid to seek opportunities to resolve imbalances within a tight price spread, even if they were not on the same day that the imbalance had arisen. This behaviour could cause poor cost targeting with those causing any imbalance not necessarily paying the associated costs. This issue is addressed in the Residual Balancing incentive through the LM.
38. The LM incentivises National Grid to minimise any changes between starting and closing NTS linepack over a gas day. This is intended to ensure that any system imbalances are resolved on the relevant day, ensuring that the costs of resolving any imbalances are targeted to those responsible for the imbalance (referred herein as the polluter pays principle). As a result of the LM, National Grid is therefore incentivised to manage linepack changes in a tighter commercial band than the physical system limits that may exist on the day. Hence the LM may cause National Grid to trade for 'polluter pays' reasons rather than purely against a physical balancing requirement.
39. Between the two parts of the incentive there is an inherent tension between trying to avoid taking balancing trades as a result of the PPM, but needing to trade as a result of the LM to try and return linepack close to its opening level, thereby upholding the polluter pays principle. In the event that a trade is necessary, the incentive ensures that we trade close to SAP thereby minimising the spread in cashout prices.

### 3.3 The 2008/9 Consultation on Residual Balancing

40. During last year's review of the residual balancing incentive one of the key questions was whether the two components (LM and PPM) of the incentive interacted to drive the correct behaviours by National Grid. One of the options considered was whether the LM should be removed completely, which would have allowed linepack to be limited by physical system limits rather than the commercial limits set under an incentive.
41. In setting the incentive to apply from April 2009, Ofgem decided that the LM should be retained. However, there were a number of refinements made to the scheme parameters to adjust the balance between the LM and the PPM.

These changes were designed to strengthen the incentive on National Grid not to undertake residual balancing trades. The current scheme is summarised in the figure below.



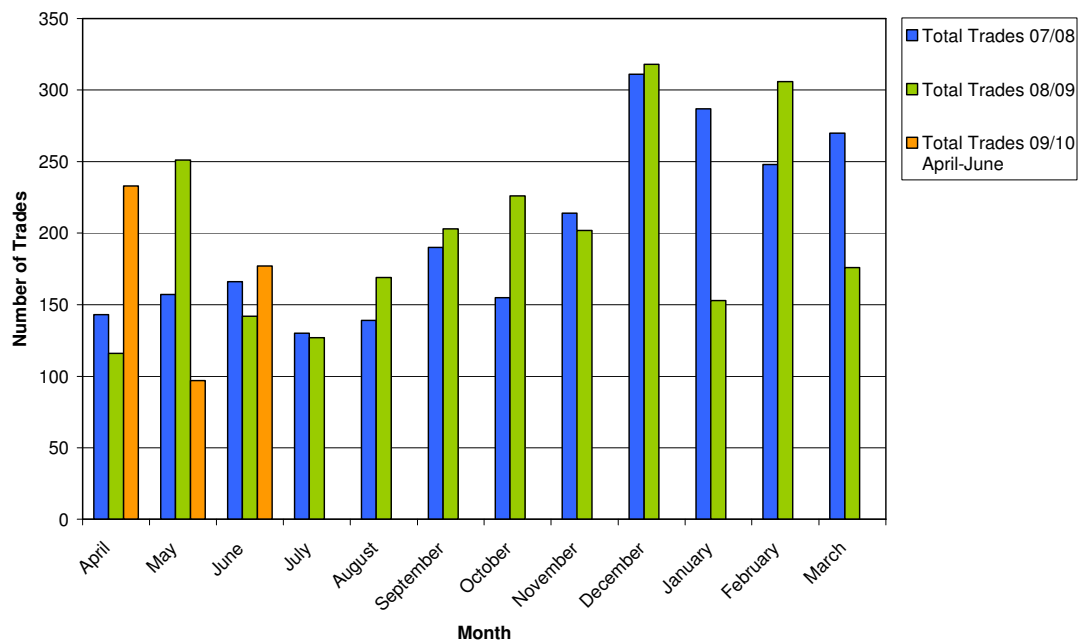
**Fig 3.1 The residual balancing incentive from April 2009**

### 3.4 Residual Balancing Incentive from April 2010

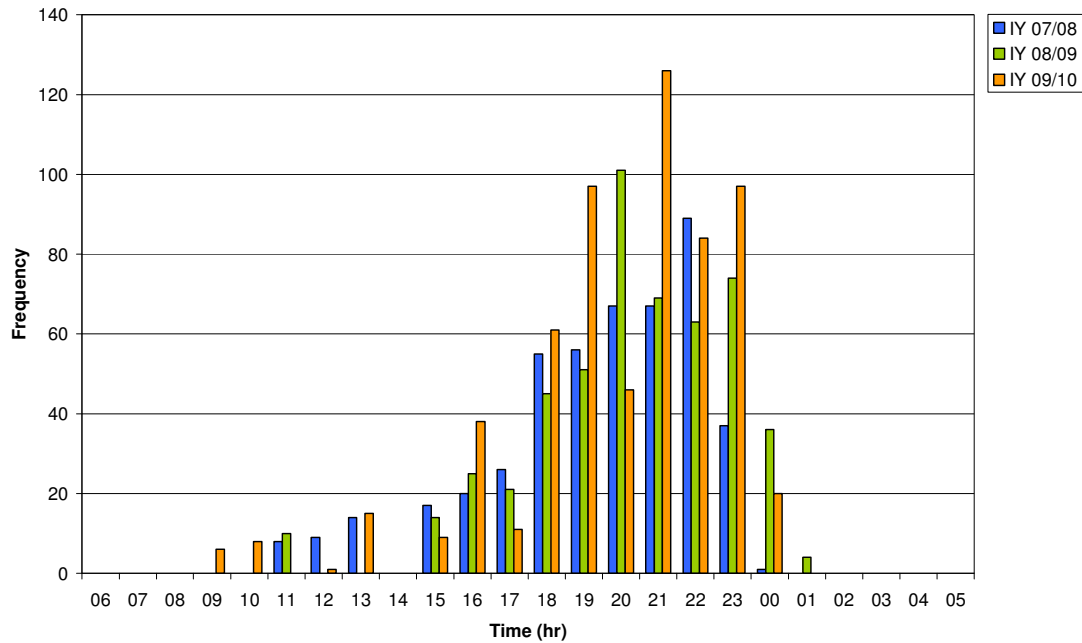
42. Last year's review concluded that the incentive structure remained appropriate and that only refinements the parameters of the incentive which had operated for a number of years were required.
43. There is limited data on which to draw any conclusions on the impact of the refinements to the parameters made last year as these were only effective from 1 April 2009 and time is required for the new regime to embed. As such, National Grid is not currently proposing to further review the incentive this year.
44. If the scheme is believed to be operating correctly (i.e. it is driving the correct residual balancing behaviours) then National Grid believes that it would be possible to set the existing daily incentive to apply for multiple years. This would help reduce the administrative burden associated with reviewing this scheme on an annual basis and would provide shippers with certainty over the incentives driving our behaviour over an extended period.
45. Responses to Ofgem's Final Proposals consultation showed general support for the changes proposed but a few questioned whether the retention of the -£30,000 per day collar on the linepack measure was appropriate as this strengthened the incentive for National Grid to undertake residual balancing trades should there be a linepack change greater than target (2.8mcm). Through this consultation we are inviting views on whether any further refinements to these or other parameters of the incentive are required.
46. To aid the reader in forming views on the performance of the residual balancing incentive, we have included a number of charts which compare performance in the first three months of the new scheme to the past two years under the previous schemes. Given the limited amount of data available

under the new schemes we believe it is too early to form any strong conclusions from the data. The charts included show the following:

- The number of trades undertaken;
- The distribution of the times when we trade;
- The aggregate volume of residual balancing trades;
- The volume of buy and sell residual balancing trades;
- The average linepack measure; and
- The average price measure per month

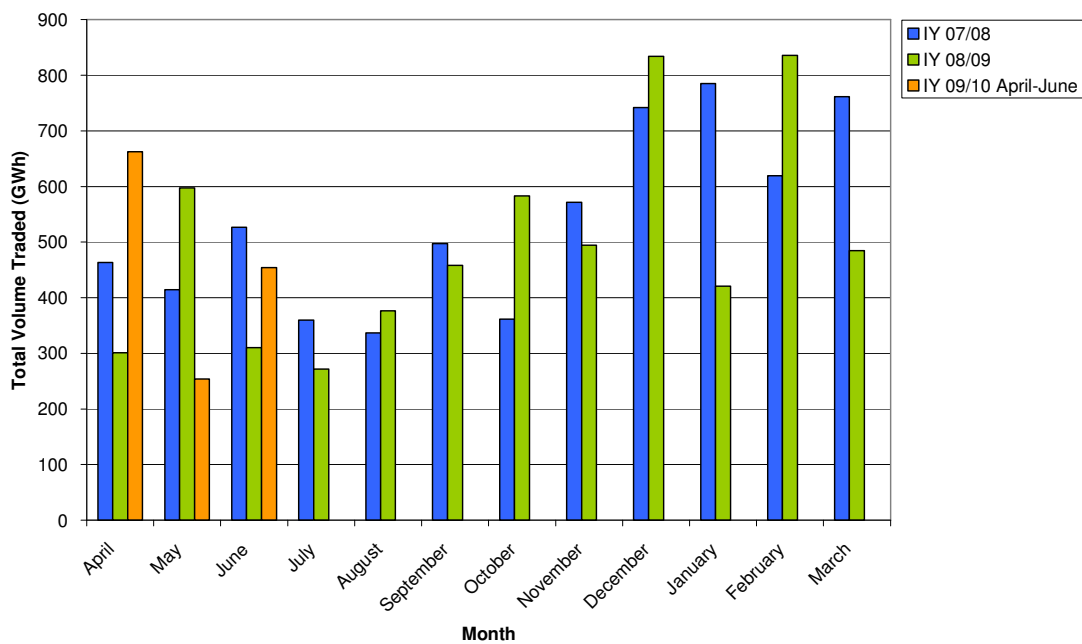


**Fig 3.2 – The number of residual balancing trades**



**Fig 3.3 – The distribution of the times of residual balancing trades**

Note: To allow comparison the chart only shows trades from April to June (inclusive) for each year



**Fig 3.4 – The aggregate volume of residual balancing trades**

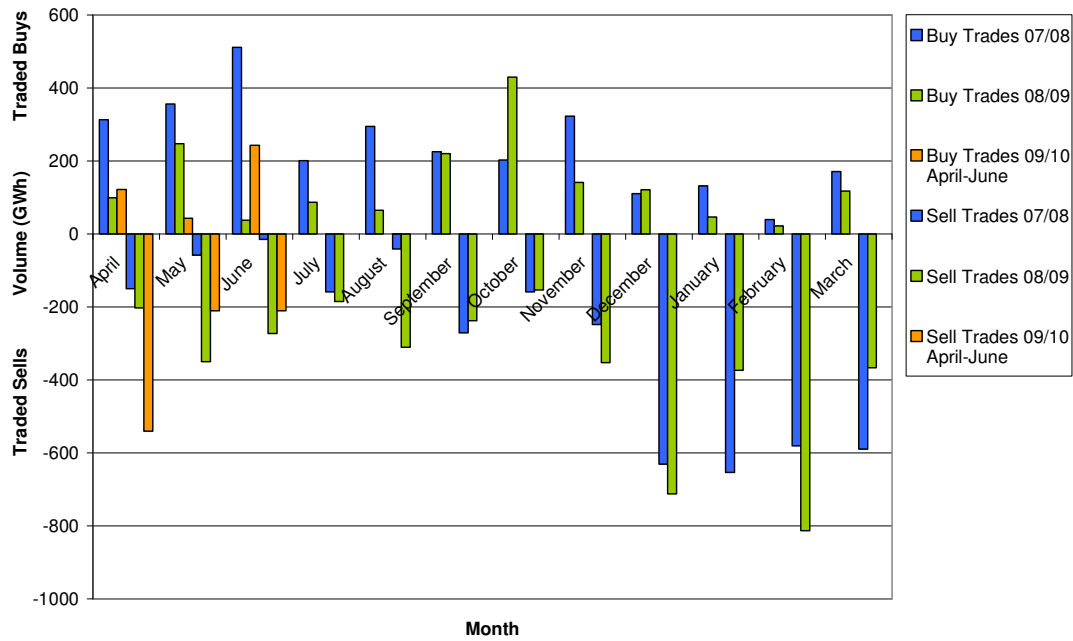


Fig 3.5 – The volume of buy and sell residual balancing trades

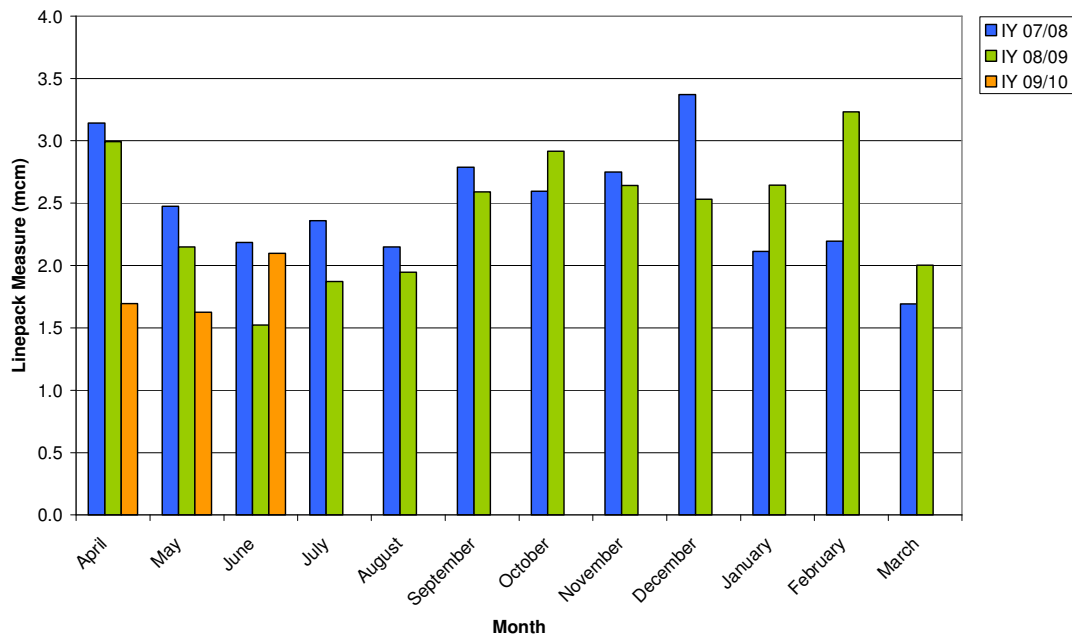
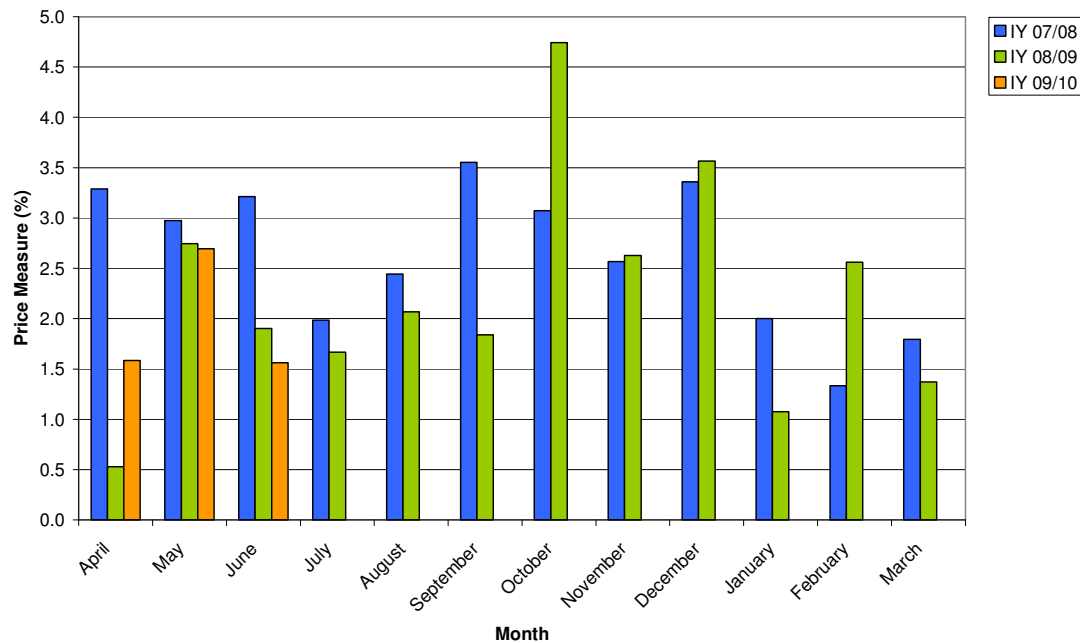


Fig 3.6 – The average linepack measure



**Fig 3.7 – The average price performance measure**

### 3.5 Inter day linepack product

47. During last year's consultation process, National Grid outlined a potential commercial service whereby shippers could transfer energy imbalance between gas days, which National Grid would manage through linepack. After responses from industry, this was set aside from National Grid's Initial Proposals to be pursued separately. In its Final Proposals, Ofgem asked National Grid to carry out further work regarding the development of such a service.
48. We are currently looking in more detail at the issues involved with this service in order to present a strawman for industry comment. Key areas of investigation are the likely opportunity for releasing volume, the potential value of such a service to shippers, and the interaction of the service with the residual balancing incentive. This process is ongoing and we will report our strawman and consult on the service in a separate process later this year.

Question 3.1	Given the review of the residual balancing scheme carried out last year, do you support our view that another review of the incentive structure is not required this year?
Question 3.2	Do you have any views/evidence that further refinement of the residual balancing scheme parameters is required?
Question 3.3	Are there any barriers to implementing a residual balancing scheme for more than one year?

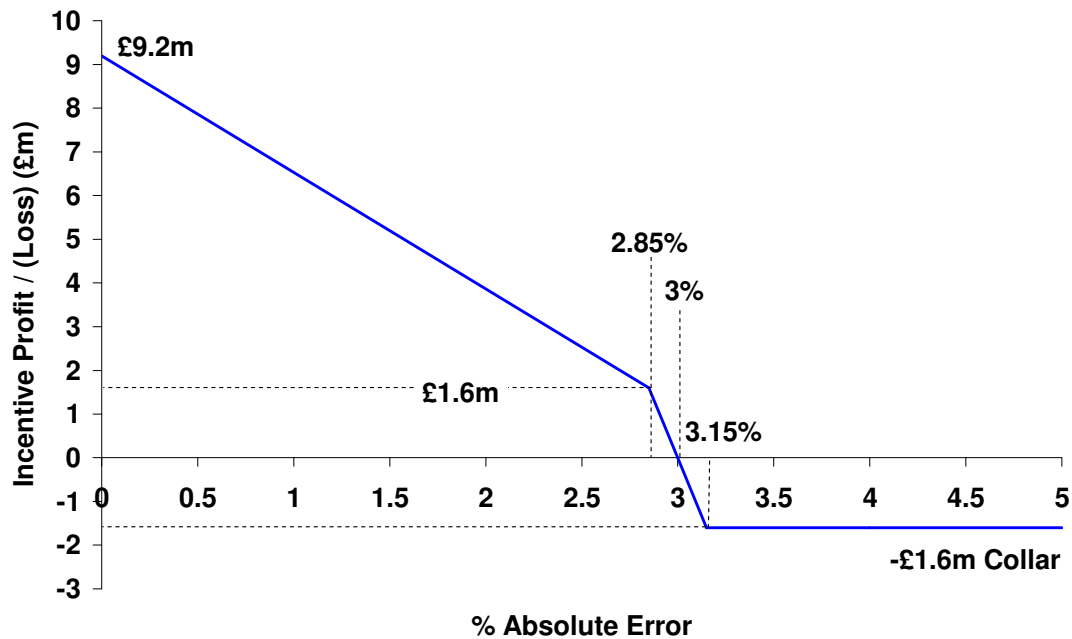
## Section 4

# Demand Forecasting Incentive

*This section provides background information on the existing demand forecasting incentive and summarises how the target performance level for 2009/10 was set. The section then asks questions on how the incentive could be set from April 2010 onwards.*

### 4.1 Background

49. Following feedback from market participants in winter 2005/6 (and supported by Ofgem analysis), it was suggested that improvements to National Grid's demand forecasts would deliver significant commercial benefits to customers
50. At the time a number of discussions took place on demand forecasting, the key points of which are summarised below:
  - The key forecast was determined to be the 13:00 D-1 forecast, as this was used by market participants when putting in place their energy strategy for the following gas day; and
  - The focus should be on improving the annual average level of performance (i.e. by reducing inaccuracies).
51. Ofgem determined the most appropriate form of regulation to drive improvements in demand forecasting was to introduce an incentive.
52. National Grid continues to invest in systems, processes and resources to continually seek improvements to the demand forecast. Focussing resources in this area allows any changes in demand trends to be quickly identified and fed into future forecasts in a timely manner. We believe the continued incentivisation of demand forecasting is appropriate as improvements continue to deliver value to the market through better information which in turn leads to better decisions.
53. The demand forecasting incentive has continued to be based around the absolute error of the day ahead (D-1) 13:00 forecast and operates on an annual average basis. The sharing factors of the scheme are designed to give a profit or loss to National Grid of £1.6m for a 5% increase or decrease in performance around the target (between 2.85% and 3.15%). There is a shallower upside sharing factor for performance increases above the 5% level which extends up to a maximum payment of £9.2m, if zero average absolute demand forecast error could be achieved (i.e. zero demand forecast error on every day of a year). The scheme is shown in the figure below.



**Fig 4.1 – The demand forecasting incentive**

54. During the consultation on incentives to apply from April 2009, National Grid identified that for the year 2009/10 uncertainty around flows to and from new storage and LNG projects could impact on the level of demand forecasting error through changes to price related demand response and volatility of exports through IUK<sup>8</sup>.
55. In its Initial Proposals National Grid reflected these new risks through a proposal for an incentive target of 3.2% for 2009/10, which represented a reduction from the 2008/9 target but was higher than the level of forecasting error at the time. Following Ofgem's Final Proposals consultation the target level of error was set at 3%. Up to 19 July 2009, the level of demand forecasting error has been 3.10%.
56. 3.10% is above the error for the equivalent period last year (2.58%). This has been caused by the increased day-to-day volatility of NTS demand this year, driving an increase in mcm forecast error. Lower demands have further increased the percentage error.

<sup>8</sup> The Interconnector between Bacton and Zeebrugge

## 4.2 Incentives from April 2010

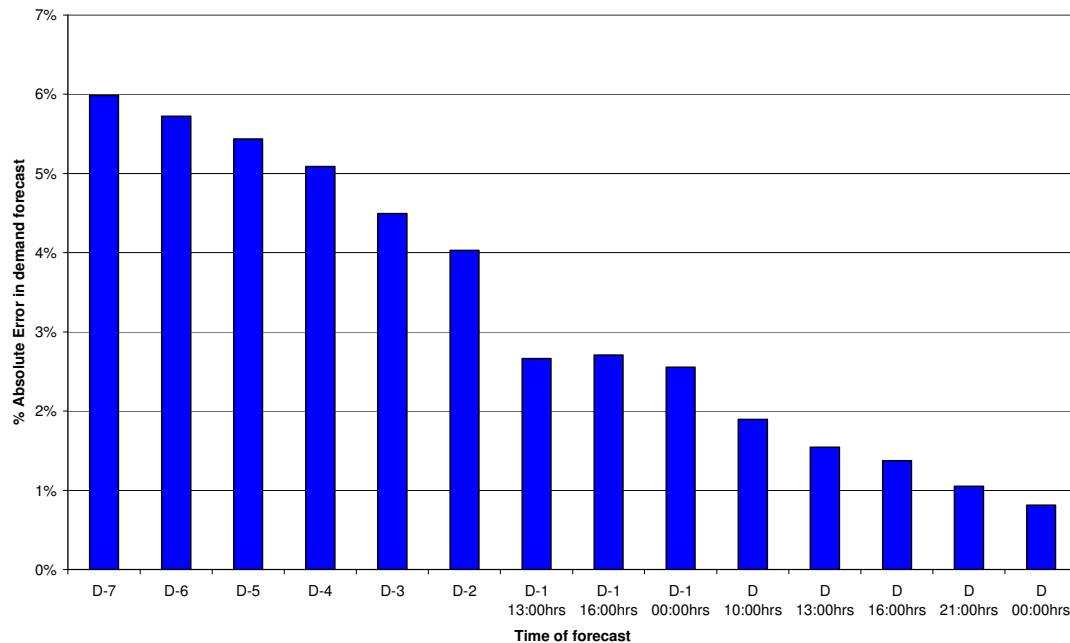
57. Through this consultation we are seeking views from the industry and consumers on what value they place on accurate demand forecasts and whether there are specific aspects of demand forecasting that are of particular value. These could include:
- The forecasts published at specific times;
  - Whether it is the aggregate forecast or specific elements of the forecast;
  - Whether the value of having an accurate forecast is any way dependent on the time of the year (e.g. summer vs. winter); and
  - Whether accuracy is measured annually (a measure of average performance over a year) or daily (avoiding large forecast errors on an individual day) or somewhere between these two parameters.
58. The following paragraphs provide more information on these issues and invite views on the value that is placed on accurate demand forecasts and whether there are specific facets of demand forecasting that are of particular value. Understanding which facets of demand forecasting are of particular value will help National Grid bring forward Initial Proposals for incentives which are designed to reflect this value.
59. In developing our Initial Proposals we would like to give consideration to whether we should include an option of setting a multiple year demand forecasting incentive. In order to develop such an option we would like to understand industry and consumers' views on the barriers to achieving this.

### Forecast times

60. National Grid currently produces 14 demand forecasts (from D-7 to midnight within day) for each gas day<sup>9</sup>. From D-7 to D-2, these are driven by simple weather forecast data. The day-ahead and within day forecasts use more detailed weather forecast data and submitted data from shippers. The forecast time and the accuracy of these forecasts for 2008/9 are summarised in the chart below.

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<sup>9</sup> Note the D-7 and D-6 forecasts are not currently published externally



**Fig 4.2 – Error in the various demand forecasts**

61. We are inviting views on the relative value that users put on the various forecasts, to inform our thinking on whether it is appropriate that the incentive should only be based around the 13:00 D-1 forecast. Should the feedback received indicate that users place significant value on other forecasts, we would look at how the structure of the incentive could be changed to incorporate these other forecast times and how a performance target for each forecast could be set.

### Forecast Components

62. The current incentive is focussed on the aggregate demand forecast rather than the specific components of the forecasts. Through the engagement process carried out with the industry this year on the SO incentives, one party has highlighted the Non Daily Metered (NDM) component of the forecast is of particular value, as each shipper has to make separate DM and NDM nominations.
63. The party suggested that an additional incentive designed to improve the NDM component of the forecast should be considered. National Grid is seeking views on whether other parties place equal importance on the NDM forecast (or another forecast component) and whether the introduction of an incentive to improve performance on these would be of value to the users of the forecast.

### Incentive Structure

64. The current incentive structure is based around the annual average level of forecast error. This structure implies that the value of an accurate demand forecast is equal for all days in the year (i.e. there is no increased value on

winter or higher demand days) and that the focus of our activities should be on reducing the average level of forecasting error rather than trying to specifically address the rare occurrence of an individual day with a large forecast error.

65. We are therefore inviting views on whether the structure of the incentive could be improved to increase the focus of the incentive on those areas where users of the forecast place the most value.
66. Should responses to this consultation indicate a need to review the structure of the incentive, then the changes that could be made would include:
- The period over which the incentive operates (daily, monthly, annual etc.);
  - Whether each period should have its own performance target; and
  - What the incentive applies to, such as average performance, avoiding large error days etc.

Question 4.1	If National Grid was able to improve its demand forecasts, how would this impact on your business?
Question 4.2	What value (or relative value) do you place on each of the demand forecasts?
Question 4.3	Which of the forecast times do you believe should be incentivised?
Question 4.4	Should consideration be given to the introduction of an additional incentive around any particular element of the forecast?
Question 4.5	Should the structure of the Demand Forecasting incentive be reviewed?
Question 4.6	What are the barriers to a multi year incentive? How should a target for a multiple year scheme be set?

## Section 5

# Data Publication Incentive

*This section describes the existing Data Publication Incentive and summarises the responses to last year's consultation on this Incentive. Views on potential incentives on data publication from April 2010 are invited.*

### 5.1 Background

67. Following winter 2005/6 it was identified that improvements to the data published to market participants would have significant commercial benefits to both consumers and the industry.
68. Through the Demand Side Working Group (DSWG) and subsequent questionnaires to users of the National Grid website, Ofgem explored the value and importance that users place on the information provided by National Grid. The key results of this review were:
  - The focus was on a key number of data items; and
  - Any performance measures in relation to publication of this data should include both availability of the website and the timeliness of publication of the data items.
69. As a result of this review, Ofgem introduced a new data publication incentive. The incentive was structured to deliver a return on the investments necessary to deliver the required performance improvements, subject to such improvements actually being made.
70. The incentive has been subsequently changed to reflect the maintenance of the current levels of performance rather than seeking to fund further investments and improvements<sup>10</sup>. To reflect this change the value of this incentive has been reduced to a maximum profit or loss of £100,000/year.

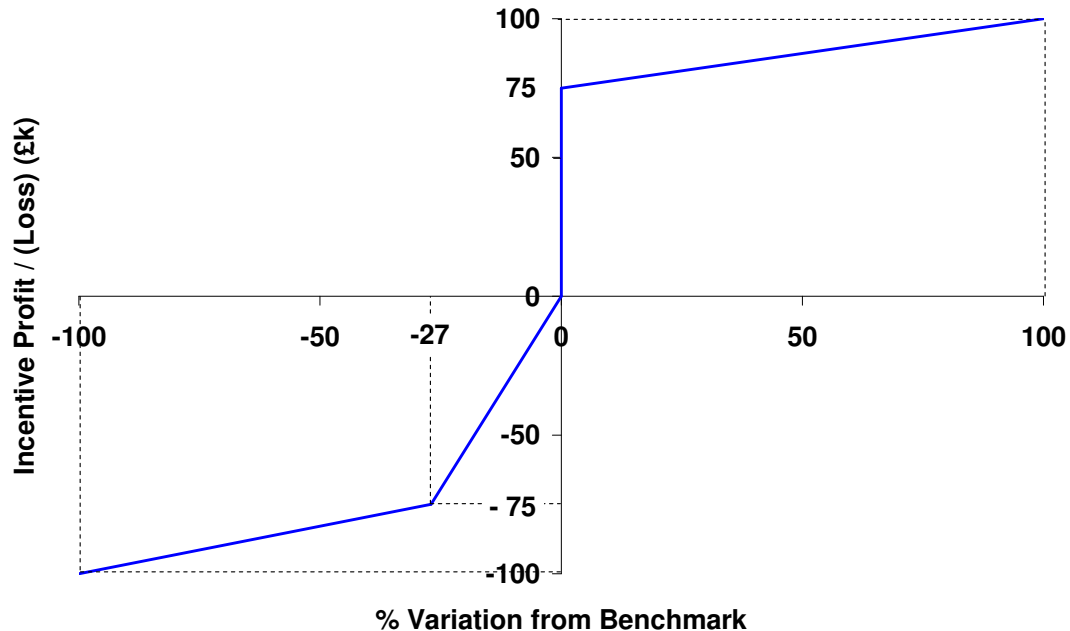
### 5.2 The existing data publication incentive

71. The data publication incentive relates to publication of information on the National Grid Website<sup>11</sup> and includes information on NTS demand forecasts, predicted closing linepack, forecast flows into the NTS and the physical flows into the NTS.
72. The data publication incentive from April 2009 was a rollover of the scheme from the previous year. In summary, National Grid receives £75,000 if performance measures for timeliness and availability are met. There is a

<sup>10</sup> Note: There is a separate cost recovery mechanism to fund delivered improvements

<sup>11</sup> <http://www.nationalgrid.com/uk/Gas/Data/prevalingview/>

possibility of earning additional revenue for any over performance up to a maximum of £25,000 if a 100% improvement could be made. There is a maximum penalty of £100,000 should performance fall below the benchmark targets. The scheme is summarised diagrammatically below.



**Fig 5.1 – Data Publication Incentive**

73. In response to the incentive, National Grid currently has a “24/7” service level agreement in place to ensure delivery of the required performance standards. In addition, we pay for external parties to monitor the website and have dedicated business resources available should issues occur. As the website is not classed as part of National Grid’s Critical National Infrastructure (CNI) systems, this high level of system support would not normally be expected to be in place.

## 5.2 Data Publication Incentive from April 2009

74. In last year’s Initial Proposals consultation National Grid proposed rolling over the data publication incentive from the previous year. Of the six responses, four suggested removing this incentive with the other two suggesting retaining the incentive (one of whom suggested that the scheme could be set until the end of the price control period (2012)).
75. In deciding to roll the incentive over for a further year, Ofgem noted the lack of responses from small suppliers and large consumers who may put a high level of importance on this information. In its Final Proposals, Ofgem highlighted the need for discussion on this incentive with small suppliers and

large consumers during the consultation on incentives from April 2010. Through the approach to industry engagement this year, National Grid has been seeking views on the publication of this data, this is discussed in the following section.

### 5.3 Data publication Incentive from April 2010

76. Given the responses received to last year's consultation and Ofgem's comments, National Grid is endeavouring to ensure that this year's consultation is publicised and debated with the widest possible audience. To this end we have already presented to the Major Energy Users Council, the Small Suppliers Forum, the Demand Side Working Group as well as meeting interested parties on a bilateral basis. National Grid's contact details are contained in Section 10 of this document if you would like to arrange future meetings or presentations.
77. The feedback received so far from these meetings and presentations has indicated strong support for the continued publication of these data items. National Grid is keen to understand the value that the users place upon this data and whether the incentive value accurately reflects this.
78. Through this consultation National Grid is also interested to know whether there is an appetite for incentivised arrangements to be widened to cover a larger subset of the total information published, e.g. real time flow data, after the day data etc.
79. Given the level of support for the continued publication of these data items, National Grid is not aware of any barriers to implementing an incentive scheme for longer than the existing single year basis.

Question 5.1	What value do users put on the data items that are published under this incentive?
Question 5.2	Are the current levels of website availability and timeliness of data publication appropriate?
Question 5.3	Does the incentive value of $\pm$ £100,000 accurately reflect the value to users of having this data available and published in a timely manner?
Question 5.4	Are there any barriers to implementing an incentive scheme for longer than one year?
Question 5.5	What information, if any, do users believe should be incentivised beyond the existing defined dataset?

## Section 6 Maintenance

*In responses to last year's Final Proposals the issue of a potential incentive around National Grid's maintenance planning processes was raised. This section provides a summary of the maintenance process and the further feedback on this process that we have received this year. Further views on potential incentives are invited.*

### 6.1 Background

80. In order to carry out essential maintenance or capital work on the NTS, National Grid needs a safe method of working which will sometimes require operational restrictions on parts of the NTS. The plan of these restrictions is defined in the Maintenance Programmes, which are managed by a process defined in the Uniform Network Code (UNC). In production of this programme, National Grid defines a limited number of days where offtake flows to specific users will be impacted, in order to allow it to carry out essential maintenance on the NTS.
81. National Grid tries to ensure that these maintenance days coincide, where possible, with planned maintenance by the users. This is achieved by an iterative planning process where the needs of all parties are taken into account and, where possible, met.
82. As a prudent asset owner, and to meet safety obligations, it is essential that maintenance and construction work is carried out on the NTS and there will always be an underlying level of work which has to be carried out around the NTS.
83. There are two maintenance programmes produced for each year; the April Maintenance Programme, which covers April to September, and the October Maintenance Programme, which covers October to March. Section L of the UNC sets out the timeline and timescales for production of these maintenance programmes, which can be summarised as follows:

For the April Maintenance Programme:

- by 30 November, Users will provide estimates of their own maintenance dates;
- by 1 February, National Grid NTS will publish a draft of the Maintenance Programme;
- by 1 March, National Grid NTS will hold the Annual Maintenance Meeting(s);
- by 1 April National Grid NTS will publish the Maintenance Programme.

For the October Maintenance Programme:

- by 30 June, Users will provide updated estimates;

- by 1 September, National Grid NTS will publish a draft of the Maintenance Programme;
- until 15 September, Users may submit comments on the draft Maintenance Programme;
- by 1 October National Grid NTS will publish the Maintenance Programme.

84. This two way process allows National Grid to schedule its own required maintenance days to coincide with those of potentially affected users, thus minimising the impact on both parties of planned maintenance.
85. As with any process where multiple users are affected, there may be occasions where the needs of two or more parties do not coincide and in these cases National Grid will take a decision as to when to schedule the maintenance day(s).
86. The programme is communicated to all potentially affected users by fax, describing the duration of the maintenance day and the likely impact on flows.
87. Once the programme is finalised, notification of changes by National Grid or requests for changes from users must be given with 30 working days notice. Any change request is assessed by National Grid. Issues taken into account include:
- Potential impact on users
    - Coincidence with their notified maintenance;
    - Flow restrictions; and
    - Previous changes.
  - Potential impact on National Grid
    - Resource availability;
    - Cost implications; and
    - Knock on impact on other work.
88. Where possible, users' change requests will be accommodated but there will be occasions where a change cannot be accommodated.
89. As mentioned above, 30 days notice must be given in order to comply with the UNC process. However, if both parties agree, a change may be made at less than 30 days notice.

## 6.2 Industry feedback on maintenance planning

90. A number of the industry responses to the Initial Proposals for incentives applying from April 2009, suggested giving consideration to developing a new incentive around maintenance planning.

91. Whilst some of the responses focused on different specific aspects of the maintenance processes (for example the need to coordinate with users' outage dates or the need to avoid changes to the dates once set) others were more generic, simply identifying the need for an incentive around maintenance planning.
92. Before considering whether a new incentive would be appropriate we are seeking further information on the issues with the current processes that any incentive would look to modify.
93. Through the industry presentations and bilateral meetings, National Grid has already received useful feedback on the existing maintenance processes from a number of industry parties. The main outcomes of these discussions are summarised below:
- There has been no suggestion that National Grid is not complying with the UNC rules on maintenance planning.
  - Generally the maintenance planning process works well but there are a limited number of occurrences each year where individual shippers/end consumers are significantly impacted by the maintenance, the causes of which can be grouped into the following themes:
    - Changes to the planned maintenance dates has been highlighted as a significant issue for gas fired power stations where major turbine maintenance was originally planned to take place coincident with National Grid's maintenance. In these circumstances the loss of the ability to carry out maintenance co-incidentally can result in an extension to the length of an outage with lost generation costs running into £100,000's per day. Given the magnitude of these costs, some parties have indicated that an incentive which helped avoid these being realised would be appropriate.
    - In some circumstances, due to uncertainty around exactly when maintenance will take place, to meet the UNC notification periods National Grid notifies users of consecutive maintenance days when in reality the actual duration of the maintenance to take place may only be a few hours. The lack of clear understanding of how a site will be affected by maintenance has been highlighted as a concern. This is particularly the case for gas fired power stations that require certainty of the date, time and duration of any outage in order to consider forward contracting for any lost generation output.
    - Where shippers or sites wish to change their own maintenance plans, National Grid has not always been able to accommodate these requests. A specific example that has been given of this is for gas fired power stations where the site's maintenance is

linked to running hours rather than fixed time periods and hence may change based on the actual (rather than planned) running of the station.

- As maintenance is co-ordinated between individual shippers and National Grid, there is a lack of clear industry-wide information on how important maintenance co-ordination is to the community as a whole. Through the meetings held this year, information has been requested on the number of changes to maintenance, who requested the changes, the notice period given and also information on the duration of maintenance that takes place compared to the duration of maintenance notified. As all of this data has not been previously recorded, there maybe a requirement to capture further data before firm conclusions on the need for changes can be made.
- Solutions to the issues raised may involve introduction of an incentive, and/or changes to the UNC rules or communication processes. Given the potential costs of extended outages to gas fired power stations, the feedback received has suggested that the value of any incentive should be set to provide an incentive to avoid moving dates rather than to cover the costs of lost generation.
- There is general acceptance that all parties involved in maintenance planning will occasionally have genuine reasons for requesting changes to maintenance plans. Although implementation of any incentive may limit these requests, it should not be expected to prevent all future requests to change maintenance dates.

94. Through this consultation we are inviting views on whether we have accurately captured the views expressed in the industry meetings and whether there are any other points that need to be raised.

### 6.3 Data on maintenance days

95. Following the comments made to last year's Final Proposals, National Grid has kept more detailed records of change requests to planned maintenance in 2009. This information (up to 21 July 2009) is summarised in the following paragraphs.
96. For maintenance planned for 2009, National Grid requested 71 maintenance periods. There have been 33 requests for changes to the planned dates of the maintenance affecting specific sites, 6 by National Grid and 27 by the shipper or affected site. Of the 27 requests, National Grid has accommodated 19 (70%) of these requests. The table below breaks this data down to pre and post 1 April 2009 (the UNC deadline date for publishing the Final Maintenance Plan).

	Pre April 2009	Post April 2009	Total
Number of date changes requested by National Grid	5	1	6
Number of date changes requested by Users	23	4	27
Number of Users requests accommodated by National Grid	15	4	19
Number of Users requests not accommodated by National Grid	8 <sup>12</sup>	0	8

**Table 6.1 – Summary of changes to the 2009 maintenance**

#### 6.4 Maintenance incentive from April 2010

97. National Grid does not currently have sufficient clarity to make a firm proposal for an incentive on maintenance planning. However, through the industry meetings held the following list of potential options for an incentive has been compiled:

- An incentive to minimise the total number of maintenance days in a maintenance plan;
- An incentive to minimise the total number of maintenance days in a maintenance plan that fall outside the maintenance plans of the affected sites;
- An incentive to minimise the number of changes made to the planned maintenance dates (once set on 1 April/1 October);
- An incentive to minimise the number of changes made to the planned maintenance dates with less than X days notice;
- An incentive to not book maintenance periods longer than required; and
- An incentive based on the percentage of shippers/site date change requests that are accommodated by National Grid

98. Given the range of suggestions of potential incentives, before considering which incentives may merit further consideration we are inviting feedback on exactly what behaviour change in National Grid that any incentive would be looking to achieve. We are also inviting views on what the objective of the incentive should be and how these should be measured; for example, should

<sup>12</sup> In one of these cases revised flow rates were agreed rather than the requested date change

National Grid focus on reducing its own maintenance costs or should the focus be on the overall costs to all affected parties?

99. Before any of these potential options for an incentive could be converted into a firm proposal, detailed consideration of the advantages, disadvantages and unintended consequences of each would need to be made.
100. Given the year on year changes in the maintenance programme, there would need to be consideration of how a fair performance target for any such scheme could be set and what value would be placed on under or over performance against the target. Consideration would also need to be given to whether the scheme applied to changes made by National Grid only or to changes requested by shippers/consumers.
101. With limited data available on the operation of the existing maintenance processes, one party has suggested that it may be appropriate to capture more data on the operation of the existing processes before considering the appropriateness of introducing an incentive. We are inviting views on which data items users would find it helpful for National Grid to start recording in this regard.
102. National Grid is inviting views on whether any of these proposals (or any others) would be a suitable candidate for the development of a potential incentive in this area. We also invite views whether changes should be made to the UNC or the existing communication processes.

Question 6.1	Does National Grid's summary (in section 6.2) accurately capture the issues with the existing maintenance planning process?
Question 6.2	Why would a change to the existing maintenance processes be of value to you?
Question 6.3	What behaviour change by National Grid would be required to deliver this value to you?
Question 6.4	Do you believe an incentive on maintenance planning is required? If so what would the objective of incentive?
Question 6.5	Do you have any suggestions for a suitable incentive scheme?
Question 6.6	Could improvements be made to the existing communication process or UNC maintenances provisions?
Question 6.7	Are there any specific data items that National Grid should start recording that would help facilitate the debate on a maintenance incentive?

## Section 7

### Information on Incentive Performance

*Feedback received during last year's consultation process, raised some concerns with the information published about incentive performance. National Grid is seeking further clarification on exactly what information is required. This section summarises the feedback received so far and National Grid's initial thoughts on the improvements that could be made.*

#### 7.1 Background

103. During the incentive year 2008/9, National Grid published quarterly information on incentives on its website<sup>13</sup>. A list of all the data items that were included in this report is contained in Appendix 2 of this document.
104. Through the industry meetings and presentations held so far this year, we have invited industry and consumer views on exactly what improvements are required. The key messages from the feedback we have received are summarised below and we invite views on whether we have captured the feedback correctly or whether there are other important areas to consider.
- The existing quarterly report (updated for 2009/10) should be retained; however a simple consolidated summary of the current schemes would be helpful. This should include information on the purpose of the scheme and the scheme structure (targets, sharing factors etc.);
  - Information on past and current incentive performance should be published in a simple consolidated manner; and
  - Information should be provided which helps consumers understand how incentive performance affects charges and the impact of changes to incentive payments on charges.

#### 7.2 Proposed Improvements

105. The following paragraphs present National Grid's proposals for addressing the issues raised.

##### Summary of the existing incentive schemes

106. National Grid has prepared a summary of the existing incentive schemes and this is contained in Appendix 1. Through this consultation we are inviting

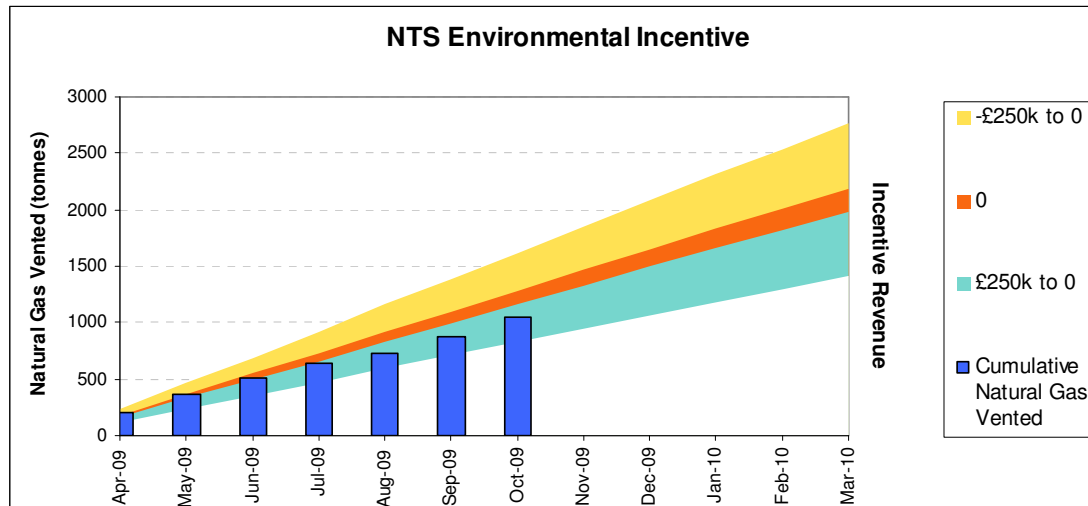
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<sup>13</sup> <http://www.nationalgrid.com/uk/Gas/soincentives/AnalystArea/>

views on whether this meets the requirement for a simple concise summary and if there are any refinements required. Subject to the feedback received through this consultation we would look to publish this summary as a stand alone document on the SO incentives area of the National Grid website.

### **Information on Incentive Performance**

107. The feedback received has identified a requirement for information on both incentive performance from previous years and for information on the current year.
108. A table which summarises the performance from previous years is included at the end of Appendix 1 of this document. National Grid will publish this information as a standing item on the National Grid website alongside the summary of the existing incentive schemes.
109. Provision of information on incentive performance and revenues during a year is complicated by the different incentive structures in place. For example, some schemes operate on a daily or monthly basis and incentive performance to date can easily be reported, but other schemes operate on an annual basis and no incentive revenues or costs are 'banked' until the year end.
110. For schemes with fixed daily (Residual Balancing) or monthly (Data Publication) targets where incentive revenues are known to date, these are already reported through the quarterly information pack. However, we are looking at how this data could be better presented alongside information on incentive performance for the other schemes.
111. For the other schemes where incentive revenues are not known (or are uncertain mid year), National Grid has historically reported performance against other measures (volumes, % forecast error to date etc.) rather than in incentive revenue terms. National Grid has considered ways of presenting these other measures in a way that allows parties to translate this performance to date into a view of where incentives revenues might be at the end of the year. A graphical example of the type of information that we could publish is included below.

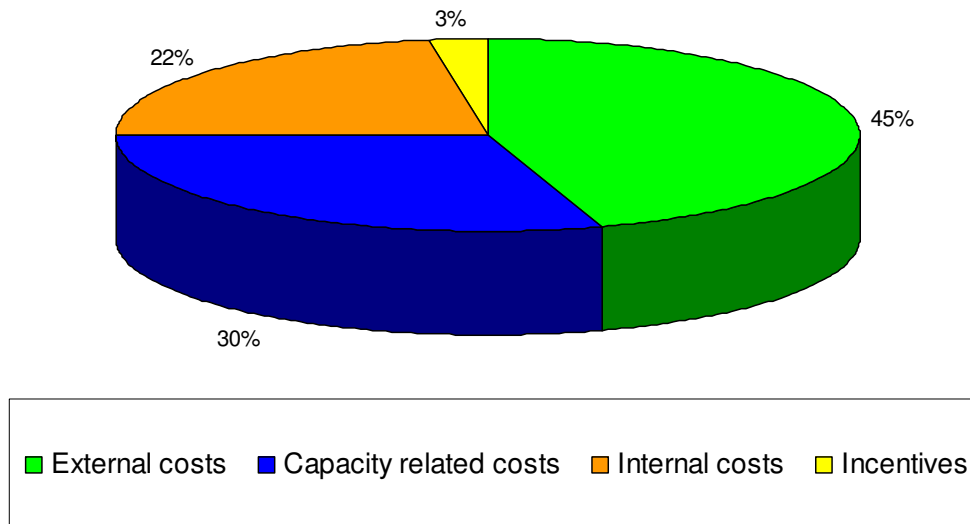


**Fig 7.1 – Example of proposed new information on incentive revenues (example data only)**

112. Figure 7.1 provides monthly information in terms of the performance to date (in this case tonnes of vented natural gas) but also gives an indication of the potential range of year end incentive payments. This type of approach could be adopted for all of the schemes identified as having an annual target(s). For schemes with fixed caps or collars these will be added to the appropriate charts.
113. This information could be used by parties to form a view of the total incentive revenue from the schemes. The following paragraph provides information on how incentive revenues are collected by National Grid from shippers.

### Impact of incentive payments on the SO Commodity charge

114. National Grid's incentive payments are recovered from shippers through the SO commodity charge, which National Grid has a reasonable endeavours obligation to only set twice a year on the 1 of April and the 1 October.
115. For the financial year 2008/9 the incentive revenue from all of the shallow incentive schemes amounted to 3% of the total SO commodity charge.



**Fig 7.2 – Breakdown of the 2008/9 SO Commodity charge**

116. National Grid publishes a quarterly update on charges report, which contains either the actual SO commodity charge or the latest forecast of the charge. This report also includes supporting data on how these charges have been calculated and can be found (with previous versions) on the National Grid website<sup>14</sup>.
117. As a rule of thumb, an increase of £2m in the costs recovered through the SO commodity charge would correspond with an increase in the SO commodity charge of approximately 0.0001p/kWh.
118. For an 11GWh (~1 mcm/d) sized load with an annual load factor of 50% a £2m increase in incentive revenues would equate to an increase in the SO commodity charge of approximately £2000. As the SO commodity charge is levied on both NTS Entry and NTS Exit allocations, the total increased costs to a shipper in this example would be £4000. How the SO commodity charge would appear on the invoices received by consumers will depend on the nature of their contractual relationship with their shipper.
119. Subject to any comments received, National Grid intends to publish the information above alongside the summary information on the incentive schemes and incentive performance on the National Grid website.

<sup>14</sup> <http://www.nationalgrid.com/uk/Gas/Charges/Tools/>

Question 7.1	Have the key areas where further information on incentives is required been correctly captured?
Question 7.2	Are further refinements required to the summary of the incentive schemes (contained in Appendix 1) prior to its publication?
Question 7.3	Would publication of the proposed graphs showing how performance to date of incentive schemes relates to end of year incentive payments be helpful?
Question 7.4	Is there other information that could be used to better indicate likely end of year incentive payments?
Question 7.5	Would publishing a standing item on the link between incentive revenues and the SO commodity charge be helpful? Is there any additional information required prior to publication?

## Section 8 Related Issues

*This section provides information on two areas related to SO Incentives. The first is system flexibility, which is currently under discussion with the industry, and which may lead to the identification of the need for a new incentive in this area. The second part of this section provides an update on the ongoing review of the Calorific Value (CV) Shrinkage capping rules, which could impact on the existing Shrinkage incentive.*

*This section also invites feedback on any areas that are not covered by the questions contained in this document including whether there are any other areas where incentives should be considered.*

### 8.1 System Flexibility

120. National Grid has recognised that changes in supply and offtake behaviours driven by energy regime developments and the types of connectees to the NTS may potentially create consumer demand for a more flexible transmission system. This more flexible network could be expected to accommodate greater levels of supply and demand variability either within the current balancing period or over a number of balancing periods. Examples of changes which could lead to a change in the level of flexibility requested from the transmission network include:
- Increased wind powered electricity generation to support renewable targets, which may lead to greater variability in the offtake of gas at power station offtakes to make up for the variability in wind generation;
  - Increased number of gas fired power station offtakes as old coal and oil fired plant are retired;
  - Increased variability of DN connected load leading to variation in DN Offtake profiles;
  - Increase and diversity of LNG importation; and
  - Evolving interconnector, storage and supply behaviour.
121. The magnitude and materiality of these developments is currently uncertain, but however, we believe it is prudent that industry discussion on these issues should take place in a timely manner and in advance of any potential system flexibility requirements materialising.
122. On 24 June, National Grid hosted a workshop in order to engage the industry on the future requirements for system flexibility. One of the key requests was to understand what information would be useful to aid understanding of the

current and future use of system flexibility, to track any trends in the level of its use and to identify which trends might signal a requirement for a change in the level of flexibility provided.

123. National Grid is now engaged in a process of soliciting further feedback from industry participants on the issues and compiling datasets on the identified areas to present back to industry in September. Any comments or questions about this subject area would be welcomed by National Grid and should be directed to Phil Hobbins ([philip.hobbins@uk.ngrid.com](mailto:philip.hobbins@uk.ngrid.com), 01926 653432).
124. Ofgem also intends to publish a separate consultation on system flexibility. The areas on which views are likely to be sought include:
- The adequacy of National Grid's current system management tools in the future;
  - The merits of additional information release by National Grid for Winter 2009/10;
  - Longer term issues and potential consequences for system flexibility; and
  - The appropriateness of additional SO incentives in this area.
125. If as a result of the industry's discussions on System Flexibility the need for incentives in this area are identified, information on these developments will be included in future documents on the development of SO Incentives from April 2010.

## 8.2 CV Shrinkage

126. Following last year's fundamental review of SO incentives, the Shrinkage incentive was set for three years from April 2009. One component of this incentive is CV Shrinkage, which arises from the application of the CV capping rules under the Gas (Calculation of Thermal Energy) Regulations 1996 (amended 1997).
127. This legislation is designed to protect consumers against being materially overcharged should there be a large variance in the CV delivered to a Distribution Network (DN) and can result in some consumers not being billed for the full amount of energy delivered to them.
128. Although the scope of the Shrinkage Incentive includes inherent CV Shrinkage, there are a number of specific CV risks associated with flows from DN entry facilities, Milford Haven and Teesside which are excluded from the incentive arrangements. This is because there are no economic mitigating options available to National Grid and as such they are beyond our control.

129. In setting the Shrinkage Incentive, Ofgem asked National Grid and the industry to review the current capping rules that lead to the occurrence of CV Shrinkage.
130. In April 2009, National Grid raised UNC Review Proposal 0251 “Review of the Determination of Daily Calorific Values” in order to generate industry debate on the issues around the current CV capping rules as described by the Gas Thermal Energy Regulations. The Proposal identified a number of areas requiring consideration during the review which are summarised below:
- Review the existing flow weighted average CV and CV shrinkage arrangements;
  - Consider the issues which impact on the accuracy of the flow weighted average CV methodology when comparing actual energy delivered to the system against that which is billed to gas consumers;
  - Consider the issues associated with future system changes, including additional System Entry Points and an increase in the variety of gas supplied (such as LNG and biofuels);
  - Develop potential solutions to resolve any issues identified;
  - If necessary, explore the process for amendment to the Regulations; and
  - Develop relevant amendments to the Regulations and UNC to deliver any proposed changes to the current arrangements.
131. Following the establishment of terms of reference, the Review Group held its first meeting on 26 June at which National Grid presented historical and forward looking analysis of the levels of CV shrinkage. In summary, the analysis showed that from an NTS perspective, the current flow weighted average regime has worked relatively well in terms of aligning energy consumed to energy billed and is expected to continue to do so. However, the analysis also showed that the introduction of biogas facilities embedded within Distribution Networks could have a commercial impact upon the costs of CV shrinkage associated with the flow weighted average calculation.
132. The next meeting is scheduled for 30 July and will examine these impacts in more detail, together with the advantages and disadvantages of potential options available to manage them. Further information will be available on the Joint Office of Gas Transporters website in due course at [www.gasgovernance.com](http://www.gasgovernance.com).
133. It is anticipated that the timescales over which the review will run will enable any amendment to the Regulations and/or UNC Modification Proposals to be

raised and implemented prior to 1 April 2010.

### 8.3 General Feedback

134. To ensure that all industry views are captured, the questions below offer respondents the opportunity to raise any issues or make comments on areas that may not have been covered through the specific questions in this document.
135. We would also like to invite views on whether there are any other areas where introduction of an incentive may be of benefit.

Question 8.1	Would you like to make any other comments on SO incentives that have not been captured through the other questions in this document?
Question 8.2	Are there other areas where you believe there would be benefit from introducing a new SO Incentive?

## Section 9

### Summary of Questions

*This section provides a summary of the questions contained within this document. Responses to these questions are requested by 28 August 2009. If you would like to discuss the issues raised in this document or other SO Incentive issues please contact us using the contact details in Section 10 of this document.*

Question 2.1	Would you support bundling some or all of the shallow SO incentives? If so please explain which schemes should be bundled, what an appropriate performance measure would be and what benefits this would deliver?
Question 2.2	Would you propose unbundling any of the existing SO incentives schemes? If so please explain the benefits that you believe would be achieved from this?
Question 3.1	Given the review of the residual balancing scheme carried out last year, do you support our view that another review of the incentive structure is not required this year?
Question 3.2	Do you have any views/evidence that further refinement of the residual balancing scheme parameters is required?
Question 3.3	Are there any barriers to implementing a residual balancing scheme for more than one year?
Question 4.1	If National Grid was able to improve its demand forecasts, how would this impact on your business?
Question 4.2	What value (or relative value) do you place on each of the demand forecasts?
Question 4.3	Which of the forecast times do you believe should be incentivised?
Question 4.4	Should consideration be given to the introduction of an additional incentive around any particular element of the forecast?
Question 4.5	Should the structure of the Demand Forecasting incentive be reviewed?
Question 4.6	What are the barriers to a multi year incentive? How should a target for a multiple year scheme be set?
Question 5.1	What value do users put on the data items that are published under this incentive?
Question 5.2	Are the current levels of website availability and timeliness of data publication appropriate?
Question 5.3	Does the incentive value of $\pm$ £100,000 accurately reflect the value to users of having this data available and published in a timely manner?
Question 5.4	Are there any barriers to implementing an incentive scheme for longer than one year?
Question 5.5	What information, if any, do users believe should be incentivised beyond the existing defined dataset?

Question 6.1	Does National Grid's summary (in section 6.2) accurately capture the issues with the existing maintenance planning process?
Question 6.2	Why would a change to the existing maintenance processes be of value to you?
Question 6.3	What behaviour change by National Grid would be required to deliver this value to you?
Question 6.4	Do you believe an incentive on maintenance planning is required? If so what would the objective of incentive?
Question 6.5	Do you have any suggestions for a suitable incentive scheme?
Question 6.6	Could improvements be made to the existing communication process or UNC maintenances provisions?
Question 6.7	Are there any specific data items that National Grid should start recording that would help facilitate the debate on a maintenance incentive?
Question 7.1	Have the key areas where further information on incentives is required been correctly captured?
Question 7.2	Are further refinements required to the summary of the incentive schemes (contained in Appendix 1) prior to its publication?
Question 7.3	Would publication of the proposed graphs showing how performance to date of incentive schemes relates to end of year incentive payments be helpful?
Question 7.4	Is there other information that could be used to better indicate likely end of year incentive payments?
Question 7.5	Would publishing a standing item on the link between incentive revenues and the SO commodity charge be helpful? Is there any additional information required prior to publication?
Question 8.1	Would you like to make any other comments on SO incentives that have not been captured through the other questions in this document?
Question 8.2	Are there other areas where you believe there would be benefit from introducing a new SO Incentive?

## Section 10 Contact Details



*If you would like to discuss any issue on SO Incentives, please contact us via the contact details below.*

To register your interest in receiving future communications on this consultation process please email: [SOIncentives@uk.ngrid.com](mailto:SOIncentives@uk.ngrid.com)

### **On the web:**

New dedicated web pages for this process are available at the following addresses:

Electricity SO Incentives: <http://www.nationalgrid.com/uk/Electricity/>

Gas SO Incentives: <http://www.nationalgrid.com/uk/gas/>

### **Talk to us:**

#### **Gas**

John Perkins                      Tel: 01926 656337      [john.perkins@uk.ngrid.com](mailto:john.perkins@uk.ngrid.com)

#### **Electricity**

Malcolm Arthur                      Tel: 01926 654909      [malcolm.arthur@uk.ngrid.com](mailto:malcolm.arthur@uk.ngrid.com)

General enquiries:                      [SOincentives@uk.ngrid.com](mailto:SOincentives@uk.ngrid.com)

## Appendix 1. Quarterly Incentive Report Data

*This section contains a summary of the existing incentive schemes and the historic levels of performance under these schemes.*

### **A1.1 Summary of Current Incentives**

147. The following pages provide a summary of the current shallow SO incentives schemes which are listed in the table below.

Document Section	Incentive
A1.1.1	Demand Forecasting
A1.1.2	Operating Margins
A1.1.3	NTS Environmental Incentive
A1.1.4	Data Publication
A1.1.5	Residual Balancing
A1.1.6	Shrinkage
A1.1.7	Unaccounted for gas (UAG)

### A1.1.1 Demand Forecasting Incentive

Purpose: To incentivise improvements in the accuracy of the 13:00 D-1 Demand Forecast

National Grid publishes national gas demand forecasts over a range of timescales. Since Winter 2006/07, the accuracy of the forecast published day-ahead at 13:00 has been subject to an incentive. For 2009/10 National Grid has an incentive target of a forecasting accuracy of 3.0%. This is calculated as the "Sum of each day's absolute error divided by the sum of each day's actual demand" over a one year time period. The incentive is summarised in the figure below.

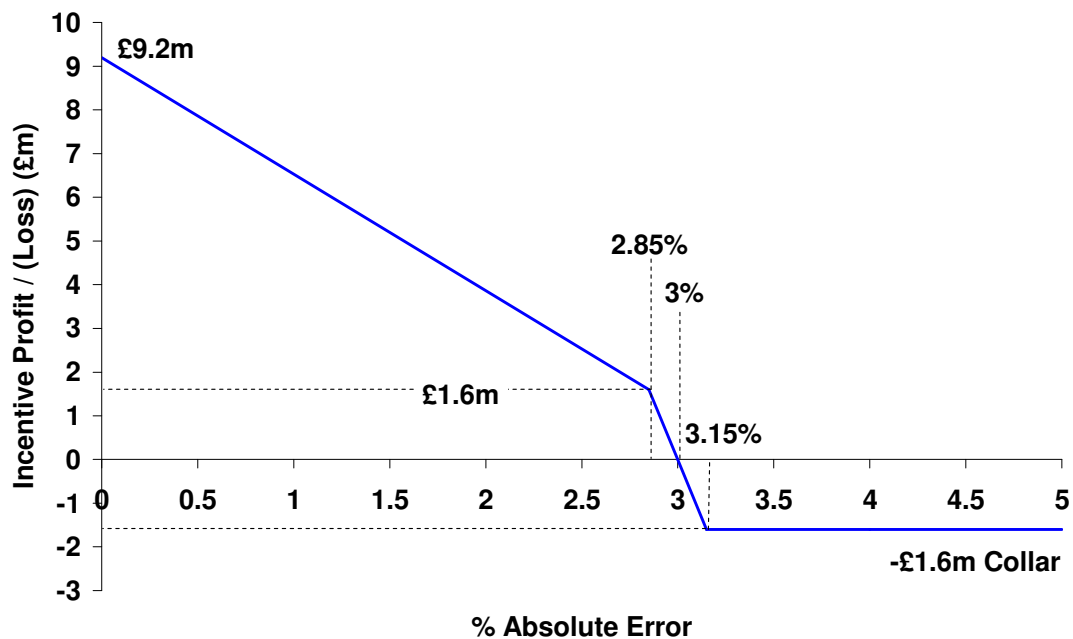


Fig A1 - The demand forecasting incentive

The target forecast error is 3%. If National Grid has a demand forecast error below 3%, an incentive payment will be received, however if the forecast error is greater than 3% then an incentive penalty will be applied. The steeper slope of the line around the 3% target indicates a stronger link between performance improvement and the incentive payment close to the target.

A forecast error of 2.85% (5% below the target) would mean National Grid earned £1.6m, whereas an error of 3.15% (5% above the target) would result in National Grid being penalised by the same amount. This represents the highest loss that National Grid is exposed to under this incentive.

The figure shows that the maximum payment that National Grid can receive under this incentive is £9.2m, although this would require the forecast error to be zero.

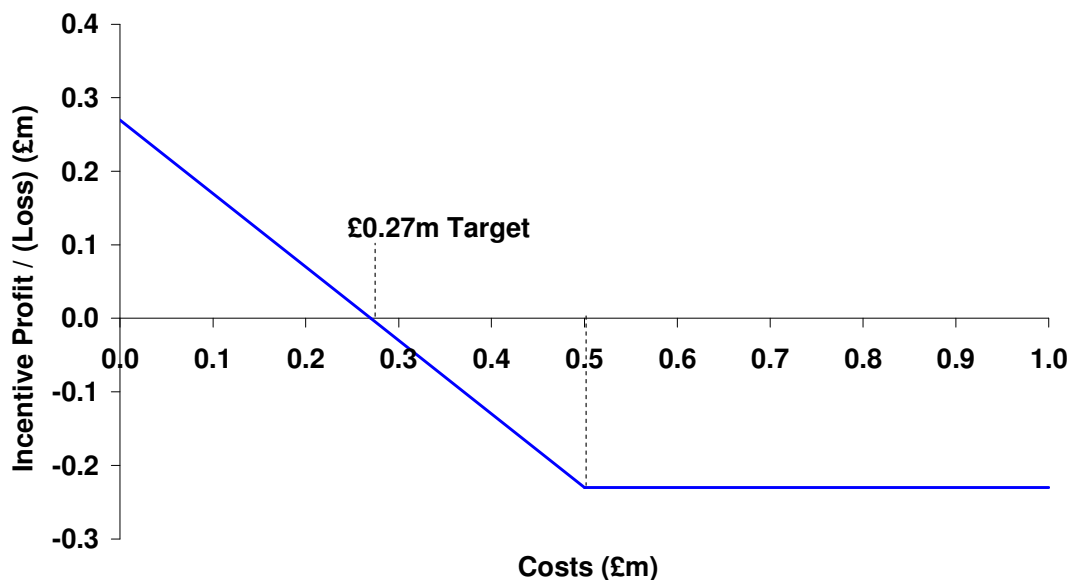
### A1.1.2 Operating Margins

Purpose: To incentivise efficient procurement and utilisation of Operating Margins Gas.

Operating Margins (OM) gas is used to maintain NTS pressures in the immediate period following operational stresses and before market balancing measures become effective. Such stresses may result from supply failure, unanticipated demand changes or failure of an NTS pipeline or associated equipment. A quantity of OM is also procured to manage the orderly run-down of the System in the event of a Network Gas Supply Emergency (NGSE) whilst firm load shedding takes place.

National Grid Gas is currently able to procure OM in the form of gas held in store. Current providers are storage and Liquefied Natural Gas (LNG) importation facilities. Procurement from the regulated National Grid Storage LNG storage facilities is via pre-emption rights on an annual basis, in accordance with the provisions of the Uniform Network Code (UNC). Procurement of the service from the other facilities is on commercial terms.

For 2009/10, costs associated with securing the availability of Operating Margins gas and developing a contestable market are not incentivised but are subject to scrutiny by Ofgem. However, National Grid is incentivised on the costs of utilisation of Operating Margins gas against a target cost of £0.27m. This is illustrated below.



**Fig A2 - The OM Utilisation Incentive**

Sharing factors for performance above and below target are 100%, i.e. National Grid is fully exposed to any under- or overspend, subject to a cost collar of £0.5m (of which National Grid would be liable for £0.23m) and a maximum profit of £0.27m.

### A1.1.3 NTS Environmental Incentive

Purpose: To incentivise the consideration of the environment when venting from NTS compressors.

The NTS Environmental Incentive scheme incentivises National Grid to make the trade-off between choosing to depressurise compressor units (venting the gas within them) or to keep units on standby - which incurs costs associated with ancillary electrical equipment (vent fans, oil pumps etc) and leakage through the shaft seal. The incentive applies to both gas and electrically driven compressors.

The amount of natural gas vented from NTS compressors (in tonnes) results from a number of areas; namely starting a compressor, purging a compressor, depressurising a compressor or through the leakage of gas through compressor shaft seal. Under the incentive this amount is compared against a target set based on historic vented volumes.

The incentive target volume for 2009/10 is 1,688 to 1,865<sup>15</sup> tonnes of natural gas. For every tonne vented above or below the target, National Grid is subject to a penalty or payment of £574. This is equivalent to £100,000 for every 174 tonnes vented above or below the target. The incentive is summarised in the figure below.

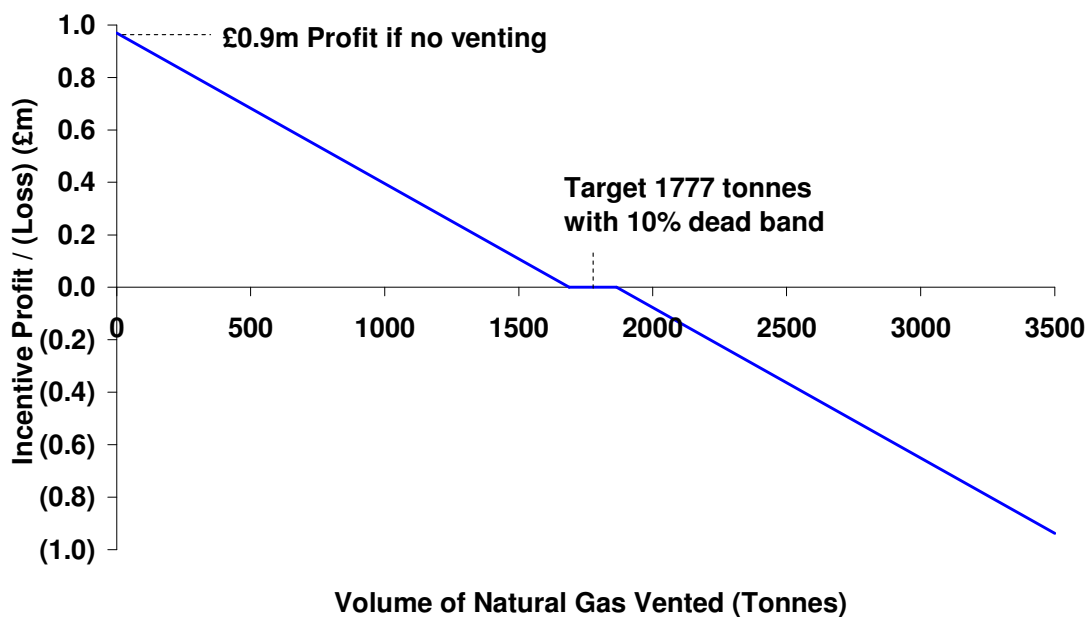


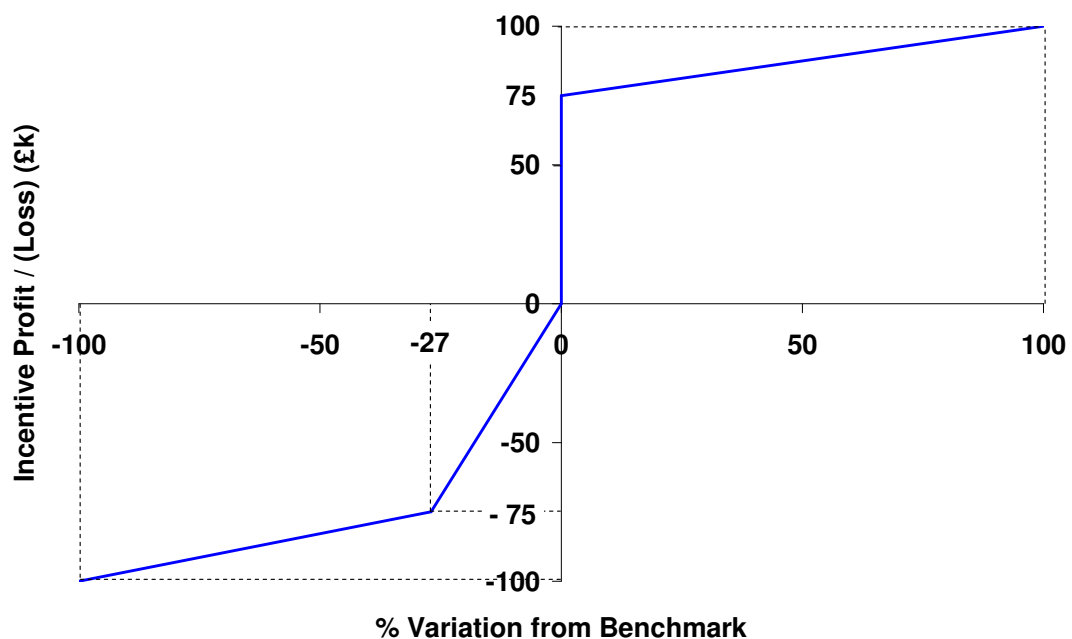
Fig A3 - The NTS Environmental Incentive

<sup>15</sup> As a result of ongoing studies there maybe a need to review the target for 2009/10. This will be covered in more detail in the next consultation document which will focus on environmental incentives.

#### A1.1.4 NTS Data Publication

Purpose: To incentivise prompt and reliable publication of key data on the National Grid website.

This incentive covers specific gas system data published on the National Grid website. National Grid is incentivised to keep three key screens (Prevailing View, Data Item Explorer and Report Explorer) available with a target of 99.3% availability, and to publish 90.5% of the hourly updates for 4 key reports (Predicted Closing Line Pack, National Forecast Flow, National Physical Flow, and Forecast NTS Throughput) within 10 minutes of the start of the hour. The incentive is summarised in the figure below.



**Fig A4 – Data Publication Incentive**

If performance is on target then National Grid receives a payment of £75,000. If performance exceeds the target then National Grid receives an increased payment up to a maximum additional amount of £25,000. If performance is below target National Grid incurs a penalty of up to £100,000.

### A1.1.5 Residual Balancing

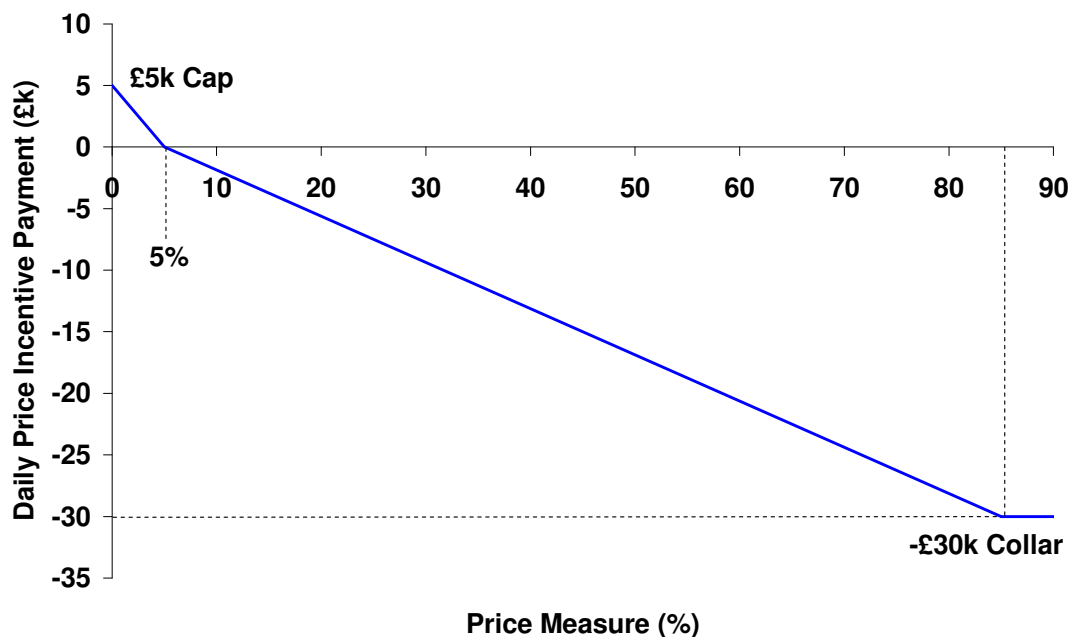
Purpose: To incentivise the daily balancing of supply and demand while minimising the impact of any actions on cashout (and indirectly) market prices.

The incentive contains two elements, the Price Performance Measure (PPM) and the Linepack Measure (LM).

The PPM is defined as the price differential between any National Grid trades, measured as a percentage of SAP, which encourages price efficiency by incentivising National Grid to carry out any balancing actions in a narrow price band. The target for 2009/10 is a price differential of 5%.

The LM incentivises National Grid to minimise any changes between starting and closing NTS linepack over a gas day (i.e. to achieve a balance between the supply and demand on the gas day). This is intended to ensure that any system imbalances are resolved on the relevant day, ensuring that the costs of resolving any imbalances are targeted to those responsible for the imbalance. The target for 2009/10 is a linepack change of 2.8mcm.

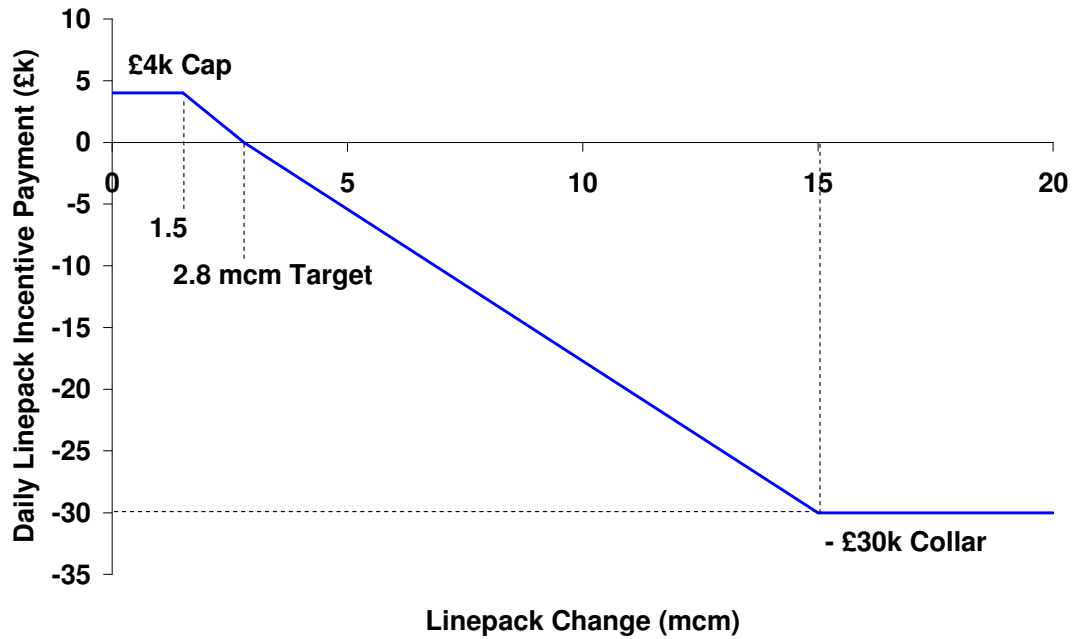
The Price Performance Measure and Linepack Measure each have their own incentive structures, which apply to each gas day in the year. The structure for the PPM is shown below.



**Fig A5a – The Price Measure of the Residual Balancing incentive**

If the Price Performance Measure is below 5% on a given gas day then National Grid receives an incentive payment up to a maximum of £5,000. Conversely if the PPM is above 5% then National Grid incurs a penalty up to a maximum of £30,000.

The incentive structure for the Linepack Measure is similar to that for the PPM and is shown below.



**Fig A5b – The Linepack Measure of the Residual Balancing incentive**

If the Linepack Measure is below 2.8mcm on a given gas day then National Grid receives an incentive payment up to a maximum of £4,000. This maximum applies at 1.5mcm, so there is no incentive for National Grid to balance the system beyond this point. Conversely if the Linepack Measure is above 2.8mcm then National Grid incurs a penalty up to a maximum of £30,000.

### **A1.1.6 Shrinkage**

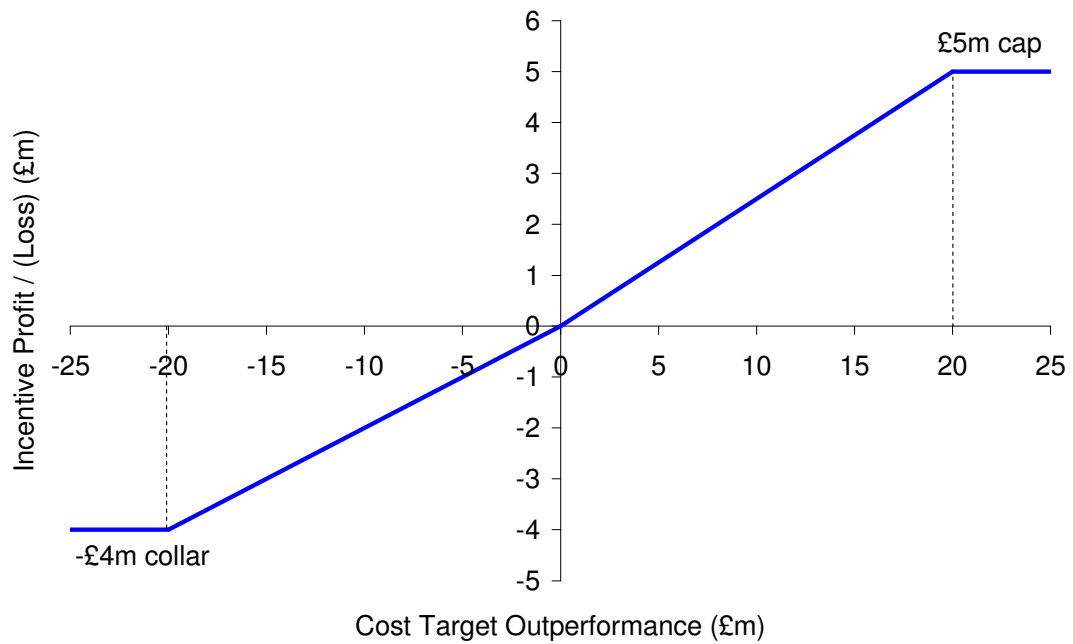
Purpose: To incentivise an efficient overall cost of shrinkage through efficient system operation and energy procurement.

NTS Shrinkage covers the gas and electrical energy which is used in operating NTS compressors, and the gas that cannot be accounted for and billed in the measurement and allocation process. The components that comprise shrinkage are summarised as:

- Compressor Fuel Use (CFU): The energy used to run compressors to transport gas through the NTS. For gas driven compressors this is Own Use Gas (OUG), for electric driven compressors this is Electric Compressor Energy (ECE);
- Calorific Value (CV) shrinkage: The energy which cannot be billed due to CV capping under application of the Gas (Calculation of Thermal Energy) Regulations 1996 (amended in 1997); and
- Unaccounted for Gas (UAG): The quantity of gas which remains after taking into account all measured inputs and outputs from the system, own use gas consumption, CV Shrinkage and the daily change in NTS linepack.

The form of the Shrinkage incentive is a bundled cost minimisation incentive across all components of shrinkage, with a target derived from a volume forecast multiplied by a gas (and electricity) reference price. The volume target consists of a forecast CFU volume (adjusted by outturn St Fergus supplies), a forecast CV Shrinkage volume, and outturn UAG volumes. This incentive has been set for three years commencing 1 April 2009.

Sharing factors are 25% upside and 20% downside with a maximum incentive profit of £5m and a maximum incentive loss of £4m. This incentive structure is illustrated below.



**Fig A6 – The Shrinkage Incentive**

If total spend against the incentive is below the target (i.e. the cost target out-performance is positive), National Grid receives a payment equivalent to 25% of the underspend, subject to a limit of £5m. Conversely, if total spend against the incentive is above the target, National Grid incurs a penalty of 20% of the overspend, subject to a limit of £4m.

### A1.1.7 UAG Incentive

Purpose: To incentivise a reduction in the gross level<sup>16</sup> of unaccounted for gas (UAG).

UAG is that energy which remains unallocated after accounting for all measured inputs and outputs from the NTS, Own Use Gas consumption, CV shrinkage and the change in NTS linepack. The primary cause is believed to be the inherent metering tolerances associated with entry and exit meters.

The UAG incentive was introduced in April 2009 and is an upside only incentive in which National Grid will receive a payment of £4.67k for every GWh that gross annual UAG is below 2,862GWh. The incentive was set as upside only incentive as it was recognised that any investment made by National Grid to reduce UAG would be made at risk, as there was no guarantee of any specific activity successfully reducing the absolute level of UAG.

The incentive was been set for three years with a cap on the amount that National Grid can earn each year of £2m in 2009/10, £3m in 2010/11 and £5m in 2011/12. The incentive is summarised in the figure below.

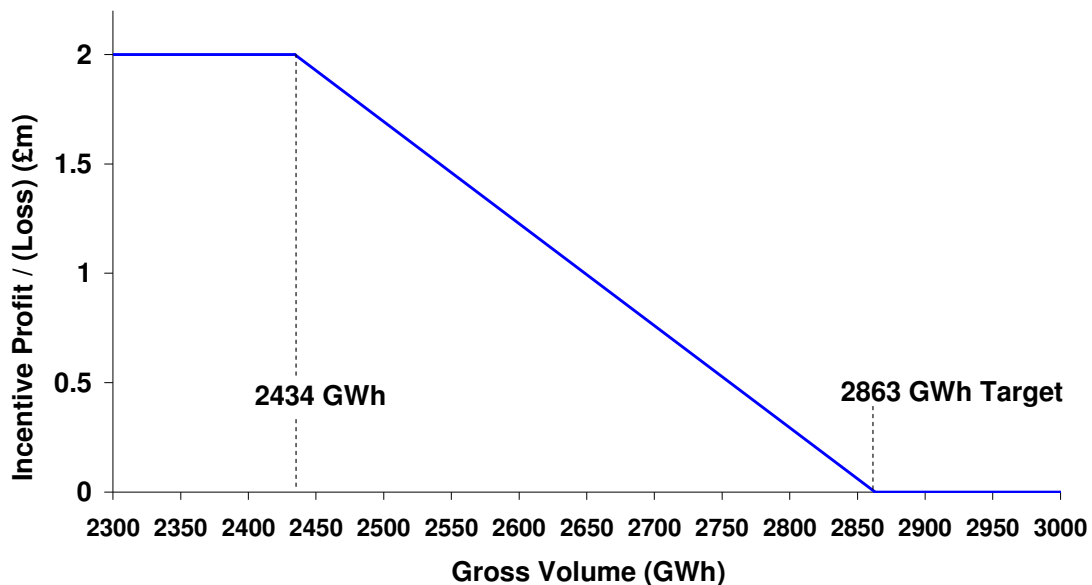


Fig A7 – The UAG Incentive

<sup>16</sup> UAG can be positive or negative on any given gas day. Gross UAG is defined as the absolute level of UAG on the day.

## A1.2 Summary of Past Performance

The following tables summarise National Grid's incentive performance for the last three incentive years.

### Demand Forecasting

Incentive Year	Incentive target	Performance	Incentive performance
2006/7 (winter only)	3.6%	2.59%	£3.44m
2007/8	4.0%	2.77%	£3.66m
2008/9	3.5%	2.65%	£3.14m

### Operating Margins

Incentive Year	Incentive target	Performance	Incentive performance
2006/7	£16.60m	£19.85m	(£3.25m)
2007/8	£25.91m	£26.12m	(£0.21m)
2008/9 <sup>17</sup>	£20.81m	£18.36m	£2.45m

### NTS Environmental Incentive

Incentive Year	Incentive target	Performance	Incentive performance
2008/9	2,086	1,850	£0.058m

### Data Publication

Incentive Year	Incentive target		Performance		Incentive performance
	Availability	Timeliness	Availability	Timeliness	
2006/7	99.86%	51.5%	99.85%	99.5%	£1.1m
2007/8	99.86%	75%	86.41%	93.3%	£0.46m
2008/9	99.3%	90.5%	99.9%	88.9%	£0.06m

### Residual balancing

Incentive Year	Incentive target (daily)		Performance (average, all days in year)		Incentive Performance Total
	Price	Linepack	Price	Linepack	
2006/7	10%	2.4 mcm	5.89%	2.41 mcm	£1.00m
2007/8	10%	2.4 mcm	2.63%	2.49 mcm	£1.41m
2008/9	10%	2.4 mcm	2.22%	2.41 mcm	£1.54m

<sup>17</sup> 2008/9 data is an aggregation of the utilisation and holding elements of the scheme, which were introduced for this year.

## Shrinkage

Incentive Year	Incentive target	Performance	Out-performance	Incentive performance
2006/7	£184.4m	£102.3m	£82.1m	£4m
2007/8	£127.0m	£79.4m	£47.6m	£4m
2008/9 <sup>18</sup>	£140.4m	£149.5m	(£9.1m)	(£0.06m)

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<sup>18</sup> Note: For 2008/9 the Shrinkage scheme operated with quarterly caps and collars

## Appendix 2. Quarterly Incentive Report Data

148. The table below summarises the information that was published for the incentive year 2008/9. Minor changes will be required for this information for 2009/10 to reflect changes to the incentives (e.g. we will need to add information on the new UAG incentive).
149. For 2009/10 National Grid is looking to supplement this information with further information on the incentive schemes, incentive performance and information on how this links to consumer charges. Further detail on this additional information can be found in Section 9 and Appendix 1 of this document.

Incentive	Data published
Demand Forecasting	Monthly values for: <ul style="list-style-type: none"> <li>• Sum of Actual Demand</li> <li>• Sum of Absolute Error</li> <li>• Cumulative Actual Demand</li> <li>• Cumulative Absolute Error</li> <li>• Absolute Percentage Error</li> <li>• Minimum Percentage Error</li> <li>• Maximum Percentage Error</li> <li>• Cumulative Absolute Percentage Error</li> <li>• Quality of demand information incentive performance QDIP to date</li> </ul>
Operating Margins	Monthly values for: <ul style="list-style-type: none"> <li>• Ops Margin Holdings Cost</li> <li>• Ops Margin Utilisation Cost</li> <li>• Volume of gas held for Operating Margins</li> </ul>
NTS Environmental Incentive	Monthly values for: <ul style="list-style-type: none"> <li>• Natural Gas Vented from Gas Powered Compressors</li> </ul>
Data Publication	Monthly values for: <ul style="list-style-type: none"> <li>• Availability Incentive Performance Measure</li> <li>• Timeliness Incentive Performance Measure</li> <li>• Prevailing View - Availability</li> <li>• Data Item Explorer - Availability</li> <li>• Report Explorer - Availability</li> <li>• Predicted Closing Line Pack - Timeliness</li> <li>• National Forecast Flow - Timeliness</li> <li>• National Physical Flow - Timeliness</li> <li>• NTS Throughput (Forecast) - Timeliness</li> </ul>
Residual balancing	Monthly values for: <ul style="list-style-type: none"> <li>• Sum of Daily Price Incentive Payment (DPIP)</li> <li>• Cumulative Sum of DPIP</li> <li>• Average Price Performance Measure (PPM)</li> <li>• Min PPM</li> <li>• Max PPM</li> <li>• Sum of Daily Linepack Incentive Payment (DLIP)</li> </ul>

	<ul style="list-style-type: none"> <li>• Cumulative Sum of DLIP</li> <li>• Average Linepack Measure LPM</li> <li>• Min LPM</li> <li>• Max LPM</li> <li>• Volume of buys</li> <li>• Volume of sells</li> <li>• Number of buys</li> <li>• Number of sells</li> <li>• Number of days - buys</li> <li>• Number of days - sells</li> <li>• SELL Min Price</li> <li>• SELL Max Price</li> <li>• BUY Min Price</li> <li>• BUY Max Price</li> </ul>
Shrinkage	<p>Monthly values for:</p> <ul style="list-style-type: none"> <li>• Shrinkage Gas - Outturn</li> <li>• Cumulative Outturn</li> <li>• Traded Weighted Average Price</li> <li>• Total Incentive Costs</li> </ul> <p>Quarterly values for:</p> <ul style="list-style-type: none"> <li>• Shrinkage Gas - Target Volume</li> <li>• Gas Cost Reference Price</li> </ul>

**Table A2.1 – Quarterly Incentive Performance Published in 2008/9**