

**Initial Proposals
Consultation
Document**

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

Version 1.0

Issued 30 October 2009

Responses requested by 11 December 2009

nationalgrid

The power of action.™

Executive Summary

This year, at Ofgem's request, National Grid has led on the development of and consultation on Initial Proposals for Gas System Operator (SO) Incentives commencing 1 April 2010. This is the third year that National Grid has led the development of Initial Proposals.

This year's consultation commenced in June 2009 with presentations to a number of industry meetings, including meetings attended by smaller suppliers and consumer representatives. Alongside these meetings a number of bilateral meetings and teleconferences have also taken place.

During summer 2009, National Grid published three consultation documents which looked at the existing individual incentives, publication of information about incentives, possibilities for new incentives and the appropriate level of bundling of the package of Gas SO Incentives. These documents and the responses to them can be found in full on the National Grid website.

Views expressed in these responses and through the industry meetings have helped National Grid to develop the Initial Proposals for Gas SO Incentives contained in this document. Responses to these proposals are requested by 11 December 2009. Responses will be published on the National Grid website and will be sent to Ofgem for consideration in its development of Final Proposals.

The key themes in this consultation are summarised below:

Scheme Bundling/Unbundling

- No changes to the current level of scheme bundling are proposed

Scheme Durations

- Proposals for schemes with a two year duration are made for a number of incentives (Residual Balancing, Demand Forecasting, Environmental and Data Publication)

New Incentives

- No proposals are made for new incentives around maintenance and other areas of environmental performance.
- National Grid proposes retaining the existing arrangements for Operating Margins costs for a further year, cost pass through for availability costs and incentivisation of utilisation costs. However, options to reintroduce an incentive on availability costs are presented.
- A new incentive around the D-5 to D-2 Demand Forecasts is proposed.

Contents

1. Introduction	4
2. Bundling/Unbundling	8
3. Residual Balancing	11
4. Demand Forecasting	22
5. Operating Margins	35
6. Environmental Incentives	45
7. Maintenance	55
8. Data Publication	59
9. Related issues	63
10. Summary of Questions	67
11. Contact Details	69

Section 1 Introduction

This introduction summarises this year's process for the development of SO Incentives commencing 1 April 2010.

To aid the reader, this section also summarises the structure of this document, and links to the SO Incentives area of National Grid's website, where further supporting information can be found.

1.1 Background to the Review of SO Incentives

1. National Grid Gas operates the high pressure Gas Transmission System in Great Britain. This System Operator (SO) function is subject to Licence¹ obligations and a number of financial incentive arrangements. These incentive arrangements encourage us to minimise the overall cost of system operation to consumers, to consider environmental impacts and to support the efficient operation of the wholesale gas market.
2. This review has looked at a number of these incentives and has been undertaken to ensure that the incentives in place from April 2010 are appropriate.
3. 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).
4. 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 be penalised should targets not be met).
5. National Grid has led the last two consultation processes² 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 in three year incentives being set for Shrinkage and Unaccounted for Gas (UAG) with a number of other incentives being set for one year.
6. Via an open letter, published on 28 May 2009³, Ofgem has asked National Grid to lead on the development of Initial Proposals for SO Incentives

¹ The National Grid Gas plc Gas Transporter Licence in Respect of the NTS

² For Incentives commencing 1 April 2008 and 1 April 2009.

³ <http://www.ofgem.gov.uk/Markets/WhlMkts/EffSystemOps/SystOpIncent/Documents1/Open%20Letter%20final.pdf>

commencing April 2010. The letter summarises Ofgem's views on the 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 our website.

1.2 Consultation Process

7. In its letter, Ofgem recognises the valuable contribution made by the industry in developing the schemes commencing 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.
8. In response to this, 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.
9. National Grid has issued three consultation documents this summer, inviting views on a range of issues that might drive the form and structure of incentive schemes. These documents and the responses to them can be found on our website.

Document	Issued	Topics	Number of responses
1	31/07/09	Residual Balancing, Demand Forecasting, Maintenance, Data Publication, System Flexibility, CV Shrinkage, Information on Incentives, Bundled vs. Unbundled schemes.	6
2	26/08/09	Environmental Incentives	3
3	14/09/09	Operating Margins	7

10. The responses to the three consultation documents, along with the feedback provided at the industry and bilateral meetings have fed into our development of these Initial Proposals for SO Incentives.
11. 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. The event will be held at Ofgem's London Offices on 18 November 2009, from 14:00 to 16:30. Further information including the registration details can be found on our website⁴.
12. Ofgem has indicated that it will come forward with initial comments during the Initial Proposals consultation period. Ofgem expects to provide some comments at the Workshop and publish further thoughts later in the period.
13. On conclusion of the Initial Proposals consultation, National Grid will publish a consultation report incorporating the responses received from interested

⁴ <http://www.nationalgrid.com/uk/Gas/soincentives/IndustryWork/>

parties. 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.

14. Responses to this consultation are requested by 11 December 2009. All responses received will be published on National Grid's website.

1.3 Supporting Information

15. National Grid's website⁵ contains copies of the consultation documents, responses, datapacks, information on the industry workshop, quarterly incentive performance reports and an archive of similar consultations from previous years.
16. At the industry meetings, interested parties requested further information on the SO Incentives, in particular a summary of the current scheme designs, past incentive performance and the link to the charges levied on gas shippers. In the first consultation document National Grid included appendices that provided this information. Following positive feedback on these documents they have now been published under the "Supporting Information" link of the SO Incentives pages of National Grid's website⁶.

1.4 Structure of this Document

17. The remaining sections of this document are structured as follows:
 - Section 2 summarises the issues around whether the package of gas incentives should be further bundled or unbundled, and concludes with a recommendation that the current level of bundling remains appropriate.
 - Section 3 describes the existing Residual Balancing Incentive, which was amended in April 2009. National Grid proposes retaining the incentive, but recognising the views expressed in the consultation responses, two options for weakening the incentive for National Grid to undertake residual balancing trades are presented. We propose that any of the variants could be set on a two year basis.
 - Section 4 describes the issues affecting the accuracy of demand forecasts. Proposals for retaining the Day Ahead (D-1) 13:00 forecast are made, with options on whether such a scheme should operate on an annual, seasonal or daily basis. Views on a proposal for a new incentive around the accuracy of the D-5 to D-2 demand forecasts are invited. We propose that any of the potential Demand Forecasting Incentives could be set for a two

⁵ <http://www.nationalgrid.com/uk/Gas/soincentives/>.

⁶ <http://www.nationalgrid.com/uk/Gas/soincentives/SupportingInfo/>

year period.

- Section 5 describes Operating Margins (OM) and the existing incentive arrangements. The issues with incentivising OM are explained and as a result National Grid presents proposals for retaining the existing arrangements for passing through availability costs for a further year and incentivising utilisation costs.
- Section 6 discusses the existing Environmental Incentive around venting from NTS compressors. Based on corrected information, which was not available when the target for the 2009/10 incentive year was set, a recalculation of the 2009/10 incentive target is proposed. Proposals to set this incentive for a further two year period are made. No new Environmental Incentives are proposed.
- Section 7 discusses the issues around maintenance and the views that have been expressed during this year's consultation. National Grid is not proposing to introduce an incentive from April 2010. We believe that there is merit in capturing more data to understand the existing maintenance process and further discussing with the industry the best way of addressing the perceived issues before taking any options forward.
- Section 8 describes the existing data publication incentive. Given the continued value that parties place on the availability and timeliness of this data we propose retaining this incentive for a two year period.
- Section 9 provides an update on two areas related to SO Incentives; the review of the CV capping rules, and the issue of system flexibility.
- Section 10 provides a summary of the questions contained in this consultation document.
- Section 11 contains the contact details for any party who wishes to discuss any aspect of SO Incentives.

Responses to the consultation should be sent to
soincentives@uk.ngrid.com

by 5pm on 11 December 2009

Section 2 Bundling/Unbundling

In its letter of 28 May 2009, Ofgem asked National Grid to evaluate the extent to which it is appropriate for the shallow incentives to operate on a bundled or unbundled basis. Through the first consultation document, National Grid highlighted the options and implications of further bundling or unbundling.

This section summarises this information and the industry's responses to the questions posed. These have led National Grid to propose retention of the current level of scheme bundling.

2.1 Background

18. National Grid currently has seven separate shallow Gas 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 with its own performance measure), although there is scope to further unbundle the schemes. The current seven schemes are summarised in the table below.

Scheme	Performance Measure
NTS Shrinkage	Cost
Operating Margins ⁷	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

Figure 2.1 - Existing Gas SO Incentive Performance Measures

19. In the first consultation document, National Grid highlighted the potential benefits and issues with changes to the level of bundling. These can be summarised as:
- Bundled schemes are well suited to areas that interact and share a common performance measure (e.g. cost minimisation);
 - Bundling together some or all of the existing schemes would require changes to the incentive structures to provide common performance

⁷ For 2009/10 there is no incentive on OM holding costs although there is an OM utilisation incentive

measures;

- Any further bundling could introduce a risk that National Grid increased its focus on those areas of largest financial value or direct control, at the expense of some of the other areas;
- Having a large number of unbundled schemes could increase the overall complexity of the arrangements but can provide transparency on performance; and
- Unbundled schemes can be designed to provide focus on specific areas but care should be taken to avoid having separate interacting incentives with competing objectives.

20. Given the lack of interactivity between the separate schemes and the different performance measures in place, we concluded that there was little merit in proposing any further bundling or unbundling of the shallow incentive schemes. Views on this conclusion were invited, these responses are summarised below.

2.2 Industry Responses

21. All six responses to the first consultation document supported National Grid's view that the current level of bundling was appropriate and that further bundling or unbundling was not required.

22. Reasons for these views included:

- The level of transparency provided by separate schemes;
- The lack of interaction between schemes;
- The different magnitudes of the existing cost minimisation incentive schemes (NTS Shrinkage and Operating Margins) and the risk of distorted incentives if they were combined;
- The ability to set individual incentive parameters for each scheme; and
- The value of stability, allowing year-on-year performance comparisons to be made.

2.3 Conclusion

23. National Grid remains of the opinion that the current level of bundling is appropriate and given the industry responses received, is therefore not proposing any changes to the level of scheme bundling for the incentives from April 2010.
24. We do recognise that this decision may need to be considered further following the completion of Ofgem's RPI-X@20 project, or at the next Transmission Price Control Review⁸.

Question 2.1	Do you agree with National Grid's conclusion that no changes to the level of scheme bundling/unbundling are required?
--------------	---

⁸ On 28/11/09 Ofgem published a consultation document on the approach and timetable for TPCR5, including discussion on how the conclusions of the RPI-X@20 project and other relevant developments in the transmission sector could properly reflected.
<http://www.ofgem.gov.uk/Networks/Trans/PriceControls/TPCR5/Documents1/Approach%20and%20timetable%20options%20for%20taking%20forward%20the%20next%20Transmission%20Price%20Control%20Review%20FINAL.pdf>

Section 3 Residual Balancing

This section summarises the existing Residual Balancing Incentive and the performance of this incentive following the changes made to the scheme from 1 April 2009.

Based on the feedback received, we present options to retain the current incentive scheme or to make minor adjustments to the scheme parameters to reduce the incentive on National Grid to undertake residual balancing trades.

3.1 Background

25. Shippers have the primary role in ensuring that 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.
26. In its role as residual balancer, National Grid has responsibility for managing the residual system end of day imbalance position, and ensuring that National Transmission System (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.
27. 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; and
 - The carrying over of physical imbalances to subsequent days could potentially lead to the costs associated with resolving imbalances being misaligned from the parties that caused them.
28. 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. The incentive is designed to encourage the delivery of the behaviours and outcomes desired by the shipping community.
29. If there was 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 Current Residual Balancing Incentive

30. 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.
31. 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. This helps to minimise the overall costs passed to neutrality, which are paid by shippers, and minimises the impact on cashout prices.
32. 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.
33. 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 to 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.
34. Between the two parts of the incentive there is an inherent tension of 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 in a narrow price band thereby minimising the spread in cashout prices.
35. During last year's review of the Residual Balancing Incentive to apply from April 2009, 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.
36. 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.

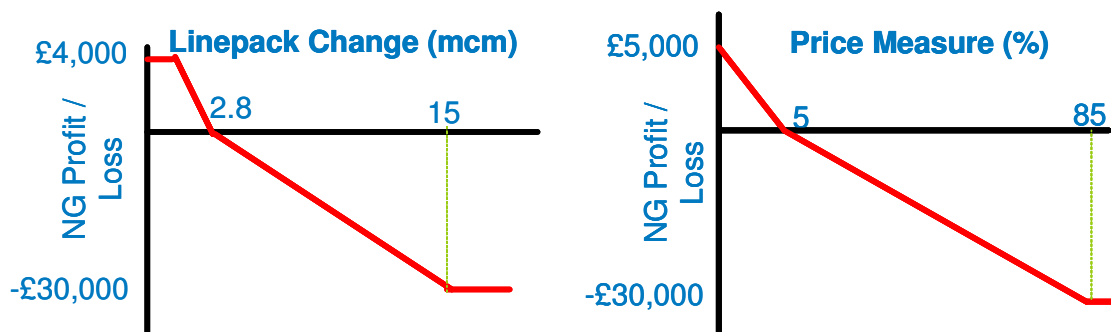


Figure 3.1 The Residual Balancing Incentive from April 2009

3.3 Issues on Residual Balancing Raised in this Year's Consultation

37. At the time of publishing Consultation Document 1 in July 2009, there were only three complete months of data on the performance of the new scheme. This limited data set, along with the expectation that any new incentive would take a period to embed, led National Grid to conclude that it was too early to identify any need for further scheme refinements.
38. We did note that some of the responses to Ofgem's Final Proposals consultation in February 2009 commented that the retention of a -£30,000/day collar on the LM could result in National Grid undertaking residual balancing trades as a result of the incentive rather than as a result of physical needs of the system. We therefore invited views on whether parties believed that there was a need for further refinement of the scheme parameters.

3.4 Consultation Responses

39. Responses to the consultation document generally supported National Grid's view that a further review of the incentive was not required this year.
40. There were a few comments supporting the view that the LM created too strong an incentive for National Grid to enter into residual balancing trades for 'polluter pays' reasons. The views of parties who made these comments ranged from a suggestion that the LM should be reviewed next year, to a suggestion that the LM should be removed altogether rather than change it to another arbitrary value.
41. The responses did not identify any specific barriers to setting an incentive scheme for greater than one year, provided an appropriate scheme was established. However, some respondents did express a preference for an annual review of the scheme.

3.5 Performance of the Current Incentive

42. In Consultation Document 1, National Grid presented information on performance under the current incentive scheme from 1 April 2009 to the end of June 2009. This section updates this information to the end of September 2009. Further data on daily residual balancing activity and incentive performance can be found in the datapack published alongside this document.⁹

43. The figures below show:

- 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 performance measure per month.

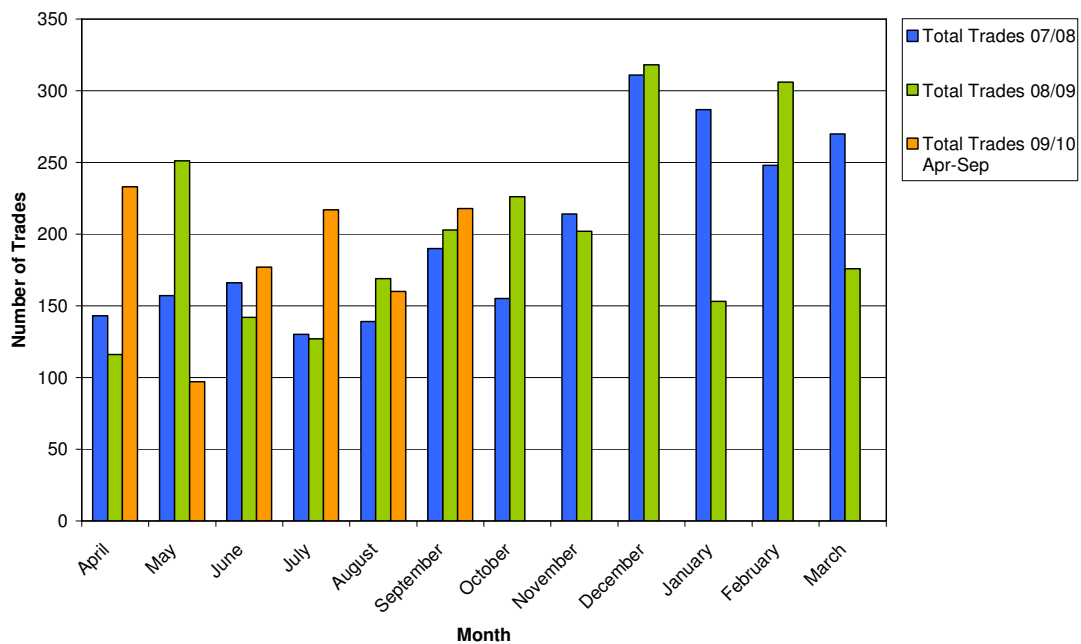


Figure 3.2 – The Number of Residual Balancing Trades

⁹ <http://www.nationalgrid.com/uk/Gas/soincentives/AnalystArea/>

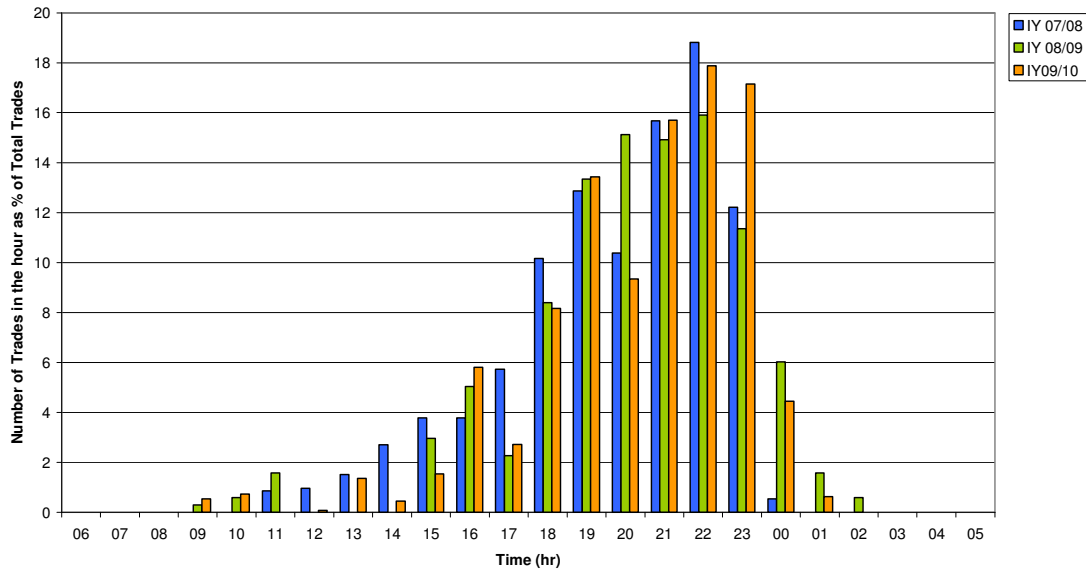


Figure 3.3 – The Distribution of the Times of Residual Balancing Trades from April to September

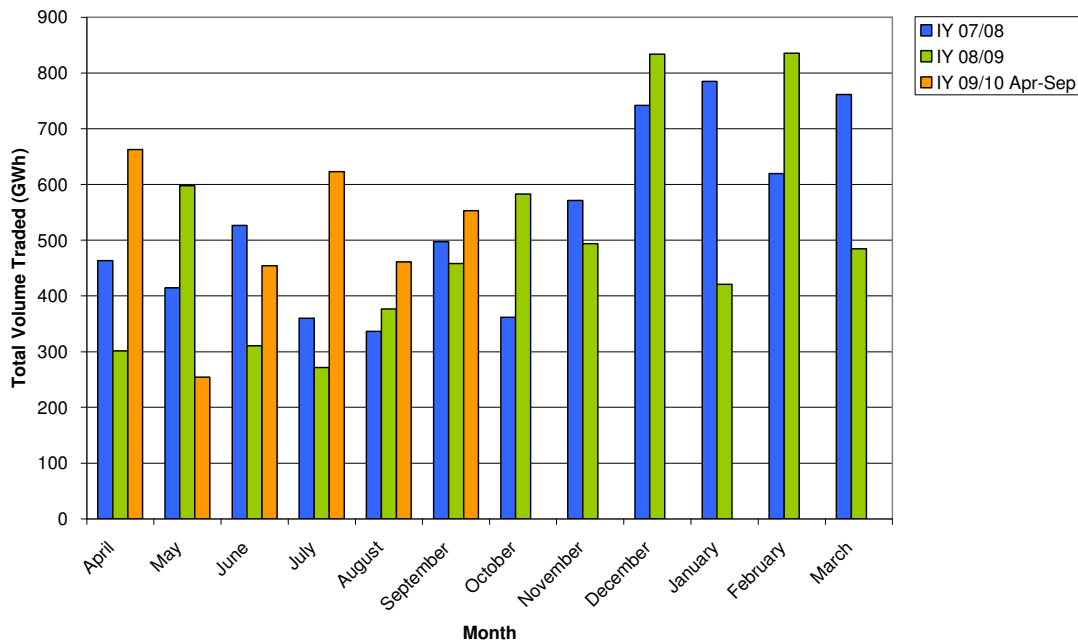


Figure 3.4 – The Aggregate Volume of Residual Balancing Trades

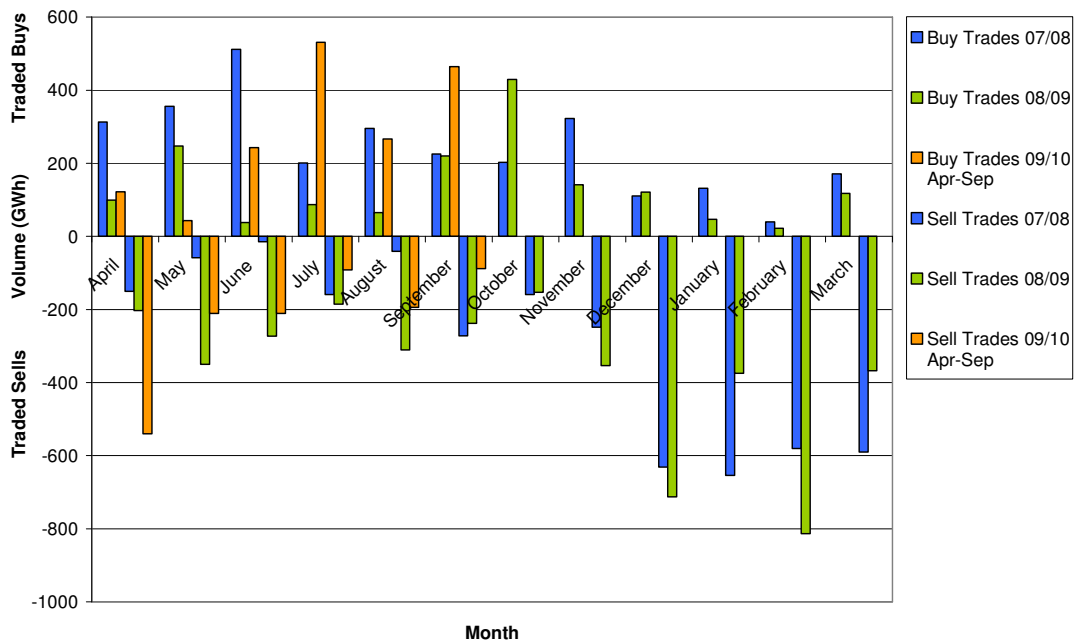


Figure 3.5 – The Volume of Buy and Sell Residual Balancing Trades

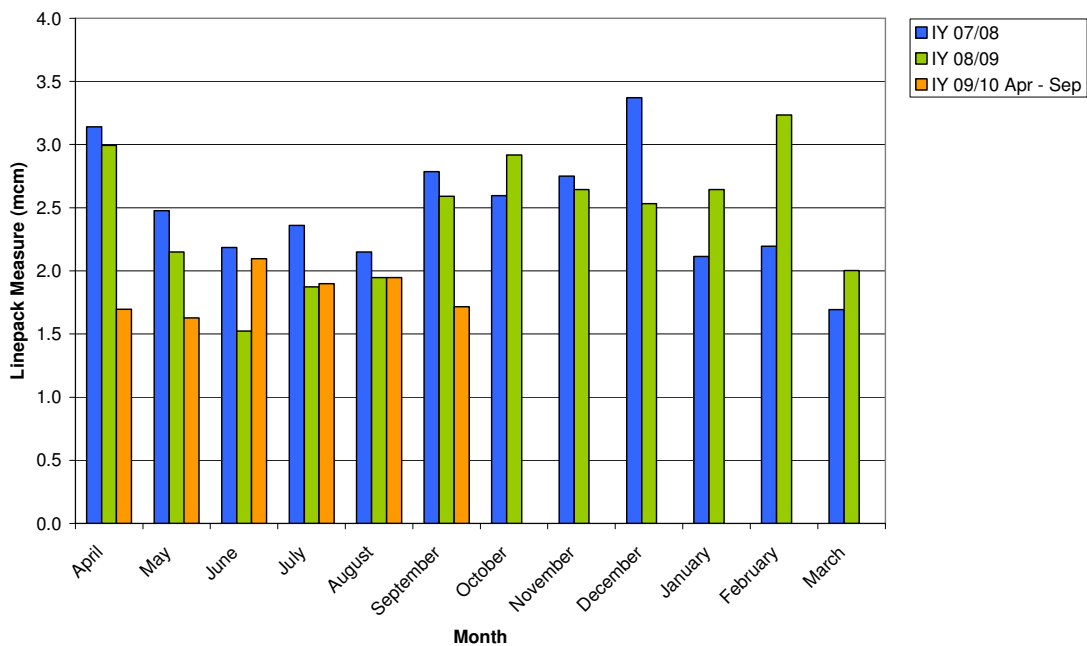


Figure 3.6 – The Average Linepack Measure

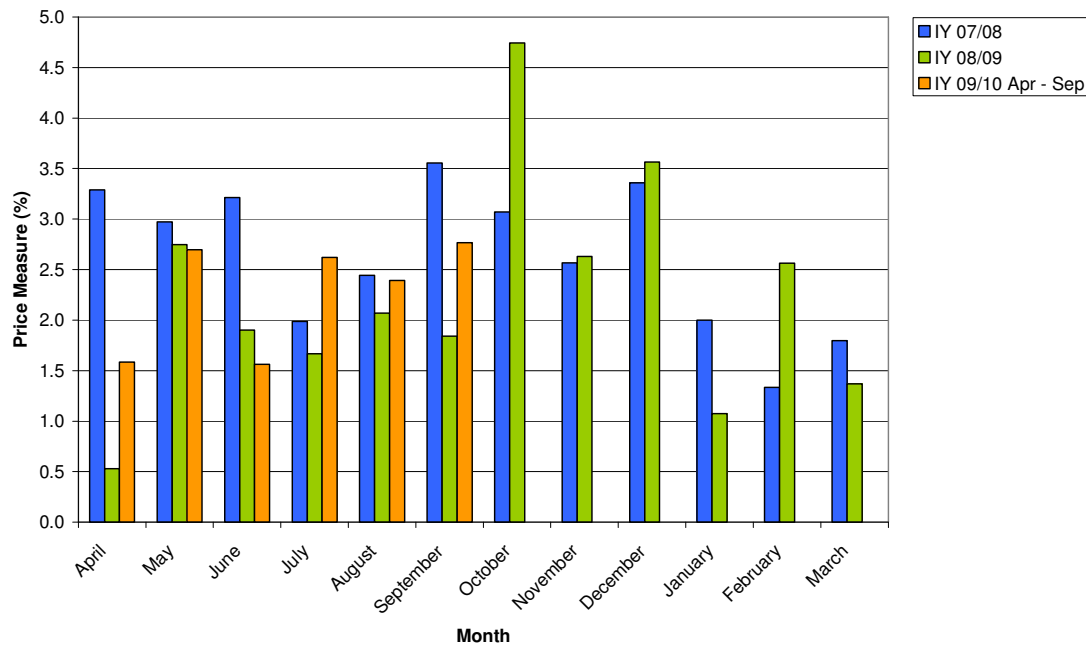


Figure 3.7 – The Average Price Performance Measure

3.6 Initial Proposals

44. National Grid continues to believe that there is insufficient evidence to suggest a need for further refinement of the Residual Balancing Incentive introduced in April 2009. In particular we believe that it is important to allow time for the new incentive to operate, including through winter periods, before any conclusions on the need for further refinement should be made. We are therefore proposing retention of the existing Residual Balancing Incentive.
45. We are not aware of any barriers to implementing a scheme for a two year period and should the industry support the retention of the existing scheme, we believe that it should be set for a two year period, providing the industry with stability and increased predictability of our behaviours.
46. As a result of the comments on the LM in the consultation responses, we believe it appropriate to also present options for weakening the LM. However, given the review undertaken last year, we believe there is insufficient evidence to bring forward proposals to remove the linepack scheme completely.
47. The incentive for National Grid to enter into residual balancing trades under the LM of the Residual Balancing Incentive could be reduced in two ways:
 - Retain the existing incentive strength but reduce the point at which the incentive collar is reached (currently set at a difference between opening and closing linepack over a day of 15mcm); or

- Reduce the strength of the incentive so that a 15mcm change between opening and closing linepack over a day causes an incentive loss to National Grid which is lower than the current -£30,000/day collar.

48. National Grid is not aware of any evidential basis for setting the parameters for a scheme designed on either approach. The options below therefore reflect the reduction in the strength of the 'polluter pays' signalled by the parties who support a change to the LM. We recognise that there may be alternative views on the amount (if any) of weakening required and invite comments on this.
49. Our first option is to retain the current linepack scheme as shown in Figure 3.8.

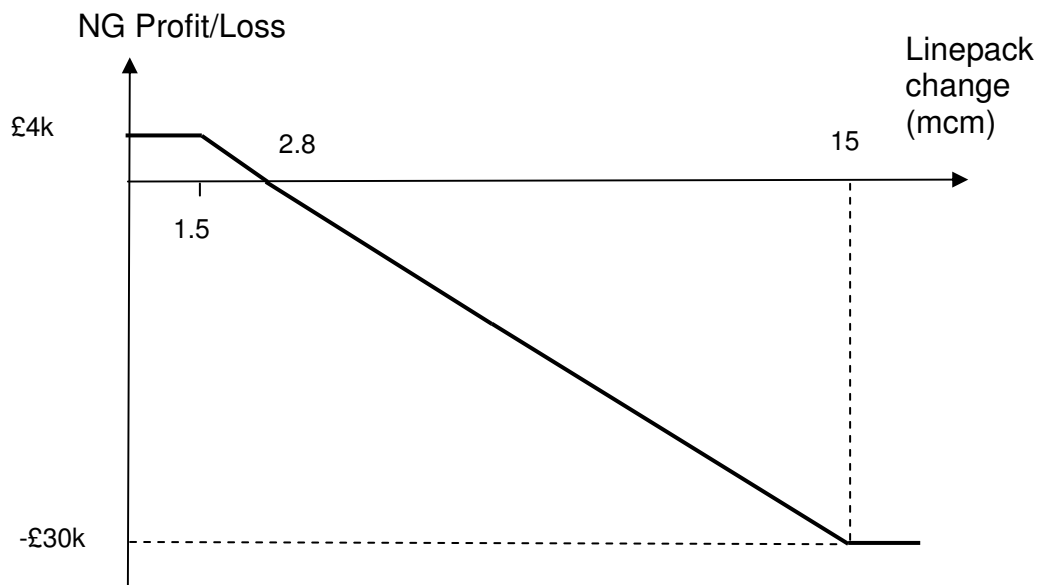


Figure 3.8 - Linepack Incentive – Current Scheme

50. Our second option is to introduce a smaller collar on the linepack scheme, retaining the downside sharing factor. The collar would apply for linepack changes greater than 7.5mcm, half of the current collar point (15mcm). This collar would therefore give a £11,557 loss, as shown in Figure 3.9.

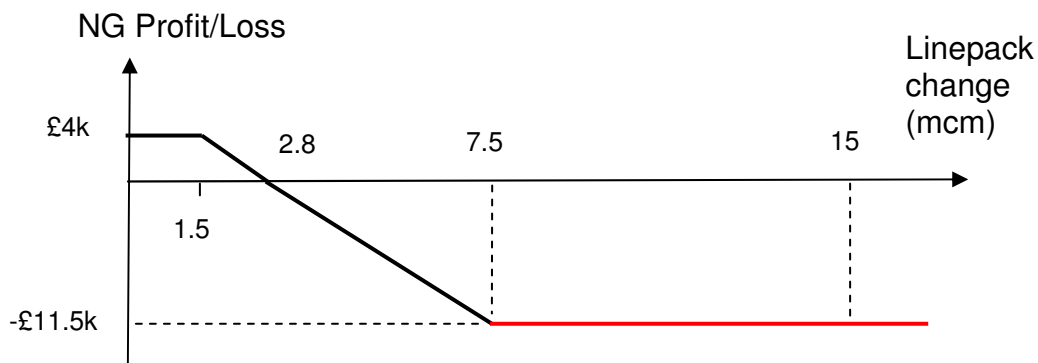


Figure 3.9 Linepack Incentive – Smaller Collar

51. The third option presented is to reduce the downside sharing factor of the linepack scheme, keeping the 15mcm collar point but reducing the collar to a £10k loss. This is shown in Figure 3.10.

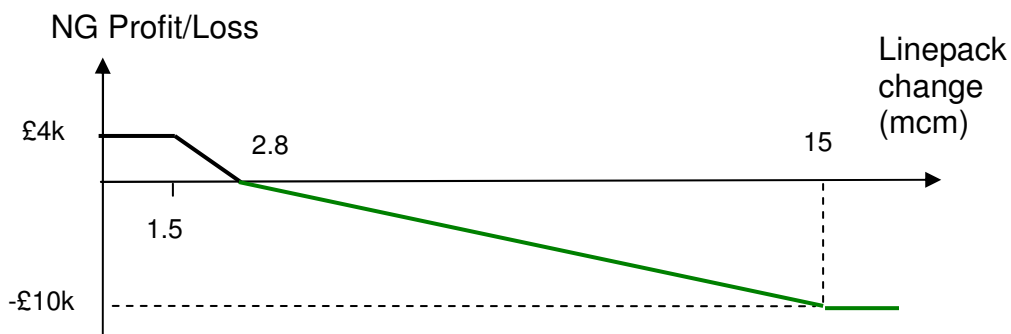


Figure 3.10 Linepack Incentive – Shallower Downside

52. Under the current incentive, there are only a few days where end of day linepack changes of greater than 7.5mcm are observed. Although option 2 (reducing the collar from 15mcm to 7.5mcm) would reduce the incentive to enter into residual balancing trades, this reduced incentive would not be apparent on the majority of days where the expected linepack change was less than 7.5 mcm.
53. Of the two alternative options, option 3 (Shallower Downside) could therefore be expected to lead to National Grid entering the market on fewer days.
54. We are not aware of any barriers to implementing either of the alternative options on a two year basis, and believe that a two year scheme would offer the industry stability and predictability of National Grid's residual balancing behaviours.

55. National Grid is not proposing that there should be any changes to the Price Performance Measure (PPM), as summarised in figure 3.1, under any of the three options for the LM. Views on this approach and the parameters used to define the PPM are invited.

Question 3.1	Do you believe that the Residual Balancing Incentive should be retained in its current format?
Question 3.2	If you believe one of the alternatives should be adopted, which one would you support and would you propose any changes to the proposed scheme parameters?
Question 3.3	Would you propose any other changes (including the PPM) to any aspect of the Residual Balancing Incentive?
Question 3.4	Would you support the setting of the incentive for two years?

3.7 Inter-Day Energy Transfer Service

56. 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.
57. This year, we have been looking in detail at the issues involved with this service. We are currently in the process of developing and evaluating a strawman for industry comment at a Joint Office of Gas Transporters Transmission Workstream later this year. We therefore are not in a position to present the details here, but can summarise the characteristics and issues.
58. We believe that such a service would be of value to shippers as a virtual storage "park and loan" service. This would provide shippers with an alternative way of managing supply/demand imbalances, besides using existing physical storage, prompt markets, and cashout price exposure. Shippers could also take greater advantage of within-day / day-ahead price differentials to reduce their costs.
59. The key issue for such a service is the impact on, and of, National Grid's residual balancing activity. We believe that the management of temporary increases or decreases in linepack should not impact on residual balancing actions, and hence if such a service was introduced, changes to the incentive to take account of parked or loaned gas would be expected.
60. These changes would need to include how to deal with unforeseen circumstances, e.g. where National Grid had allowed a party to park gas in (or loan gas from) the NTS, which later due to unforeseen operational circumstances contributed to a requirement to undertake a residual balancing

trade. These incentive interaction issues will be discussed with the community alongside our strawman for the service itself.

Section 4 Demand Forecasting

This section provides background information on the existing Demand Forecasting Incentive and the factors which are affecting the accuracy of forecasts.

A summary of the views expressed in this year's consultation is provided and proposals for the Day Ahead (D-1) 13:00 Demand Forecasting Incentive from April 2010 are made. A new Demand Forecasting Incentive on the D-5 to D-2 forecasts is proposed and views invited.

4.1 Background

61. 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.
62. 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).
63. Ofgem determined the most appropriate form of regulation to drive improvements in demand forecasting was to introduce an incentive.
64. National Grid continues to invest in systems, processes and resources to seek further 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 incentivisation of demand forecasting is appropriate as improvements deliver value to the market through better information, which enables efficient decisions to be made by market participants and in turn, the residual balancer.
65. The Demand Forecasting Incentive is based around the absolute error of the day ahead (D-1) 13:00 forecast and operates on an annual average basis. For the first full year of the scheme (2007/08) the incentive target was set at 4%. In each of the subsequent two years, the incentive target has been reduced by 0.5% and for 2009/10 is therefore 3%.

66. 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.

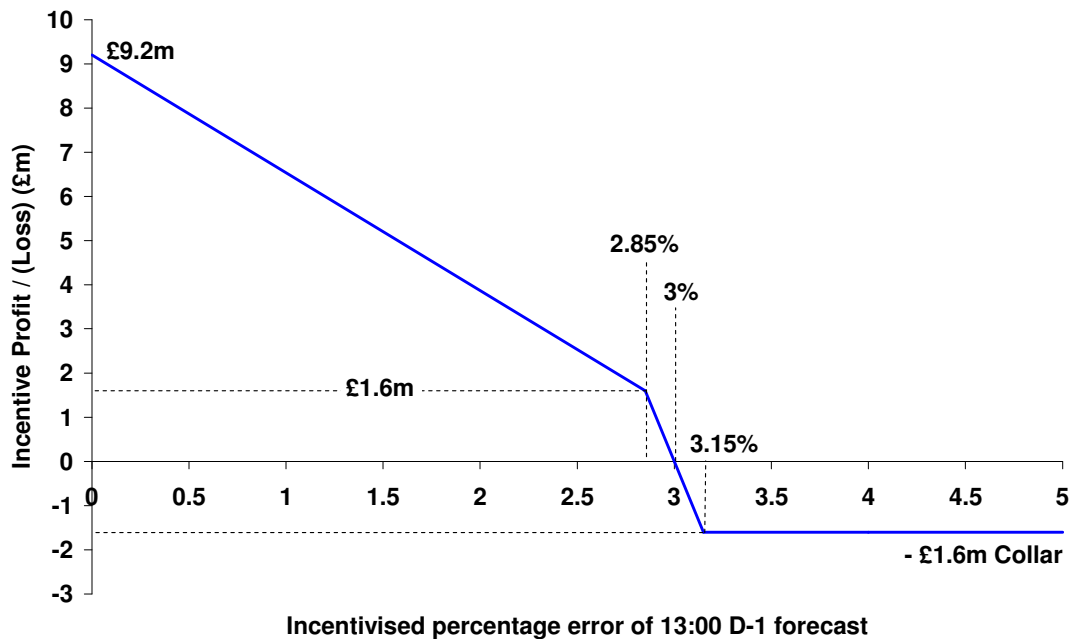


Figure 4.1 – The Demand Forecasting Incentive for 2009/10

67. The Incentivised Percentage Error (IPE) is defined as the sum over the year of the absolute errors, divided by the sum over the year of the actual demand:

$$IPE = \frac{\sum_{days} abs (forecast\ demand - actual\ demand)}{\sum_{days} actual\ demand}$$

68. National Grid's demand forecasting performance is assessed by comparing the IPE to the current 3% target on a percentage basis:

$$performance = \frac{3\% - IPE}{3\%}$$

4.2 Factors Affecting the Accuracy of the Demand Forecast

69. 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 Liquefied Natural Gas (LNG) projects could impact on the level of demand forecasting error through changes to price related demand response and volatility of exports through IUK¹⁰.
70. 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%.
71. Up to 11 October 2009, the level of demand forecasting error has been 3.18%. This is above the error for the equivalent period last year (2.81%).
72. Figure 4.2 compares outturns this incentive year with those in 2008. Total NTS demand has been around 7% lower than in 2008. This is largely caused by lower Local Distribution Zone (LDZ) demands, due to the recession. In addition, the absolute change from one day to the next, which indicates the volatility of the demand, has been on average 4% higher. This has led to a similar increase in the absolute forecast error, which is 5% higher. As a result, the percentage error on which the incentive is based, given by the average error divided by the average demand, shows a rise of ~13%.

	1 April to 11 - October 2009	Equivalent period 2008	% difference
Average demand	217 mcm	233 mcm	- 7%
Average absolute day-to-day change	7.2 mcm	6.9 mcm	+4%
Average error	6.9 mcm	6.6 mcm	+ 5%
% error	3.18%	2.81%	+ 13%

Figure 4.2 – Comparison of Incentive Year to Date with the Equivalent Period Last Year

73. Additional daily data of historic demands and the accuracy of the D-1 13:00 forecast can be found in a datapack published in the Analyst Area of the National Grid website¹¹.
74. For 2010/11 and 2011/12, we expect volatility to increase above current levels due to the expected commissioning of further caverns at the Aldbrough storage site, and increased LNG flows driving price-related demand.
75. The Aldbrough facility was the first new gas storage capacity for four years and began commercial operations this summer with two caverns. Net daily injections have been between 0 and 4.5mcm, contributing to higher day-to-

¹⁰ The Interconnector between Bacton and Zeebrugge

¹¹ <http://www.nationalgrid.com/uk/Gas/soincentives/AnalystArea/>

day changes in storage injections this summer and increasing the element of potentially price driven demand.

76. During the next twelve months, it is expected that Aldbrough will become fully operational, with nine caverns commissioned. These will be able to inject (demand) 19.5mcm/day, and withdraw (supply) 39mcm/d. This will present a challenge for our demand forecasts, and although we will learn from our experience of Aldbrough's operation we certainly expect an appreciable increase in forecast error.
77. The last twelve months has also seen a step increase in LNG terminal capacity and flows, with Isle of Grain Phase 2, Dragon and South Hook 1 all commissioning. Looking ahead, South Hook 2 is expected to be operational in incentive year 2010/11, adding 10.5bcm/yr (around 24mcm/d) to capacity at Milford Haven, while Isle of Grain Phase 3 is on target for Winter 2010/11, raising capacity by 7bcm/yr (around 19mcm/d).
78. We therefore expect to see higher levels of LNG flows than present, impacting on the outturn forecast error. This impact arising from increased amounts of volatile price-driven demands. Again, as we gain familiarity we will adapt our models and forecasting expertise to mitigate some of these impacts on the forecast.
79. Any demand forecasting improvements delivered by National Grid may be offset by the impact of the increased volatility in demand and would not be directly observable in the demand forecast error. We believe that the impact of the factors described above, over which National Grid has no control, should be taken into consideration when setting an incentive target.
80. Estimating the size of the likely additional error in 2010/11 and 2011/12 is difficult, but our current estimate is 0.5mcm to 1mcm per day. This is similar to the step up in error seen in the last winter and summer, which accompanied more volatile IUK flows and storage injection.
81. With an average demand of 270-280mcm, this means we expect forecast error to increase by the order of 0.2% to 0.4% over the two year period, although further work to refine and confirm this number would be required prior to setting an incentive.

4.3 Consultation on Incentives from April 2010

82. Through this year's consultation process, we have sought views from the industry and consumers on the value that they place on accurate demand forecasts, and whether there are specific aspects of demand forecasting that are of particular value to them, including:
 - Which specific forecast times are of the most value and importance;

- Whether it is the aggregate forecast or specific elements of the forecast;
- Whether the value of the accuracy of the forecast is in any way dependent on the time of the year (e.g. summer vs. winter); and
- Whether accuracy should be 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.

4.4 Consultation Responses

83. The consultation responses indicated that users of the forecasts continued to place value on accuracy, as this allowed them to make efficient use of resources and make more effective trading decisions.
84. The forecast perceived to be of highest value to users was the currently incentivised forecast (D-1 13:00). With respect to potential improvements to the current incentive, three of the six responses suggested that consideration should be given to seasonal targets rather than a single annual target (currently 3%), one response supported the retention of an annual average error scheme and one response proposed the introduction of an additional scheme focused on avoiding large daily errors.
85. Of the other forecast times, the highest level of support¹² for additional incentives was for the longer term forecasts (National Grid forecasts from D-7 and publishes forecasts from D-5). On the issue of whether incentives should be placed around individual components of the demand forecasts, the most interest¹³ was for the Non Daily Metered (NDM) forecast, which is currently available via the Gemini system.

4.5 Initial Proposals for Demand Forecasting Incentives

86. This section presents options for incentivising the D-1 13:00 and the D-5 to D-2 demand forecasts based on the responses detailed in Section 4.4. The issues with introducing an NDM incentive, which have led us to not propose introducing a scheme from April 2010 are summarised.

D-1 13:00 Incentive

87. Based on the responses, the D-1 13:00 remains highly valued and there is clearly an ongoing need for an incentive around it. There are options for the period over which the incentive could be applied, for example annual,

¹² 2 out of 6 responses

¹³ 4 out of 6 responses

seasonal or daily.

88. An annual scheme would retain the existing incentive structure as shown in Figure 4.1, although there would need to be agreement on the appropriate target.
89. Introduction of a seasonal scheme would reflect the fact that demand forecasting errors in the summer are on average higher than in the winter when the LDZ demand forms a larger proportion of the total demand compared to the more volatile components (e.g. storage).
90. If a seasonal scheme was introduced, National Grid would propose using separate targets for the Summer and Winter periods with the value of the current annual scheme split equally between them (i.e. the overall value of the scheme should be retained).
91. Should a daily scheme be introduced, the performance targets for each day could be set on an annual basis (i.e. the same target for each day) or on a seasonal basis (i.e. the same value for each day in the Summer and a different value for each day in the Winter). We would propose that the daily incentive value could be set with at $1/365^{\text{th}}$ of the current annual scheme value (i.e. the overall annual value of the scheme is retained).
92. Under the current annual D-1 13:00 Demand Forecasting Incentive, any forecast error (in mcm), has an equal impact on the measure of incentive performance, irrespective of when in the year this occurs. In proposing the incentive value for the seasonal and daily schemes above we have maintained this concept through an even split of the value between each season¹⁴ (or day). We welcome views on whether this is appropriate or whether there is more value attached to forecasts at particular times of the year (e.g. during the winter).
93. The following diagrams show options for the different types of D-1 13:00 Demand Forecasting Incentives. Given the consultation responses on the continued importance of the D-1 13:00 forecast, in each of the options we have maintained the current scheme value.

¹⁴ For example, we are proposing that should a seasonal scheme be introduced that the value of the existing annual scheme (£1.6m) should be split equally between the summer and winter schemes (i.e. £0.8m each)

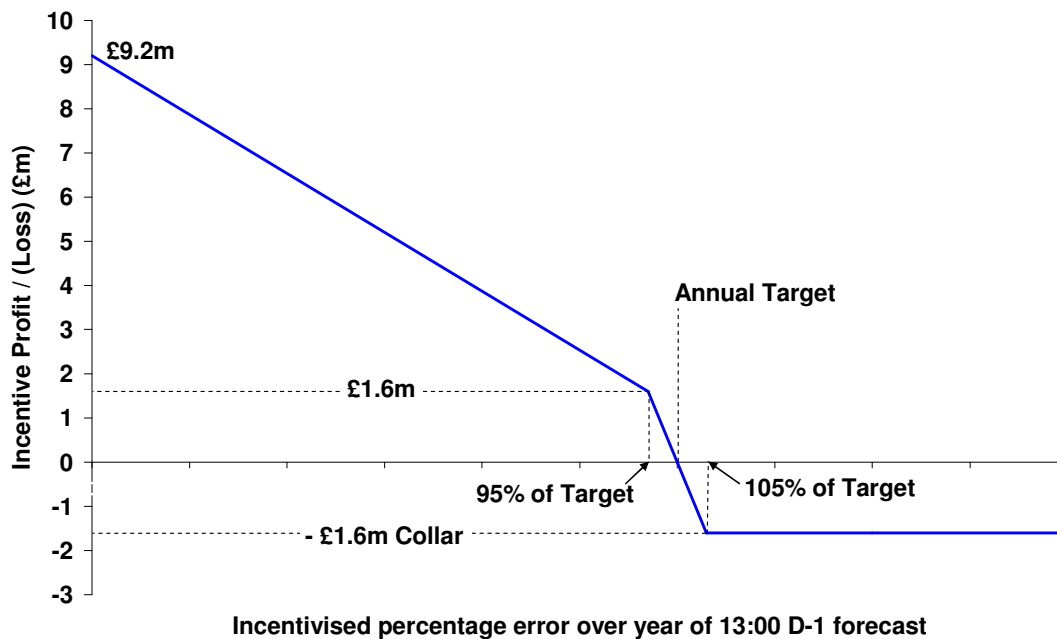


Figure 4.3 – Annual Scheme, with a Single Target for the Year

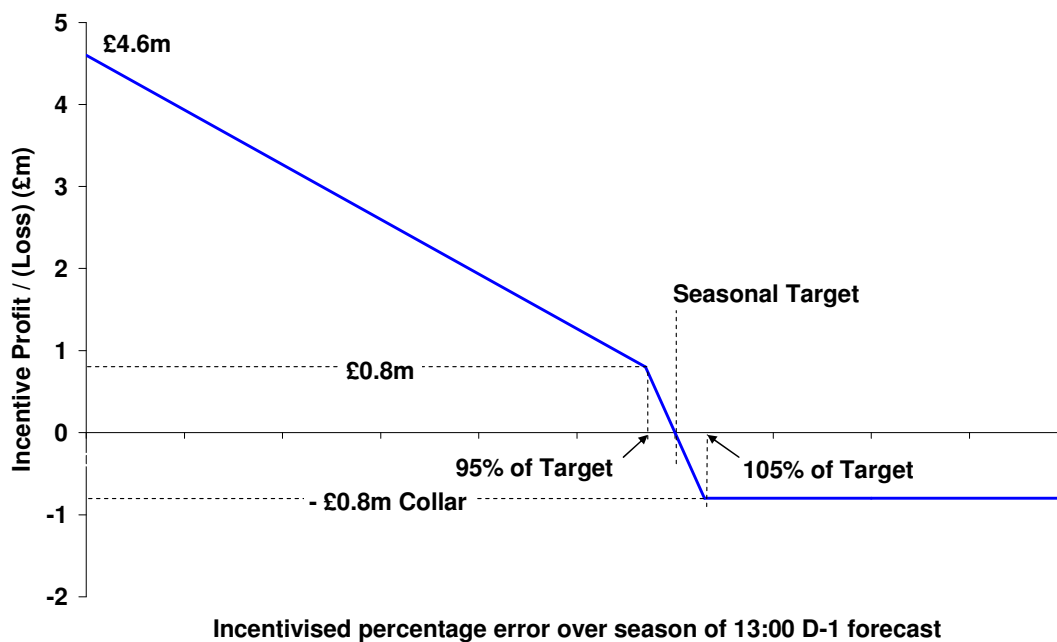


Figure 4.4 – Seasonal Scheme

This would apply for the Summer (April to September) with a single target, and again for the Winter (October to March) with a different target.

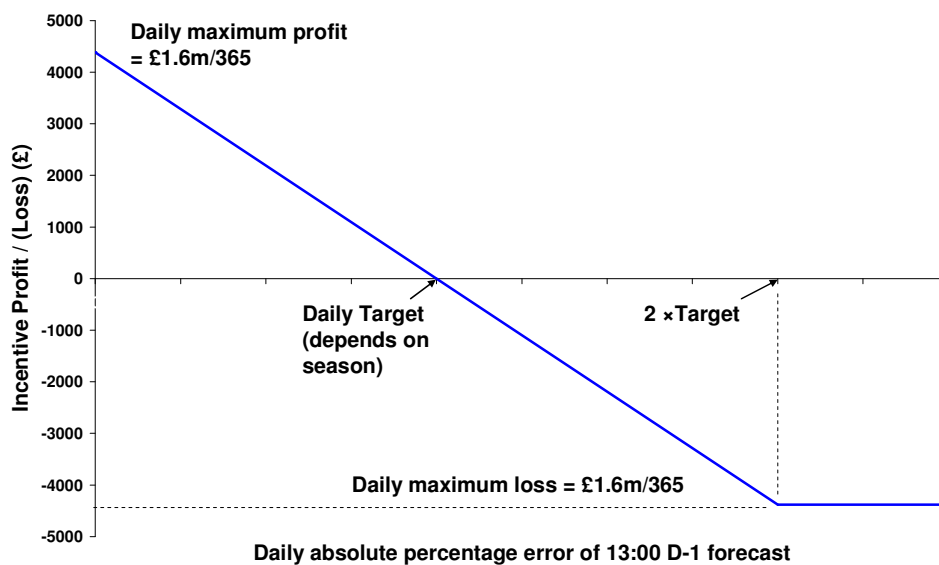


Figure 4.5 – Daily Scheme

This would apply every day, with one target during Summer and a different target in the Winter

94. For any of the schemes the outturn performance, adjusted to reflect any assumed process efficiencies and increased levels of volatility, could be used to set an appropriate performance target. The current outturn levels that could be used as a basis for considering an incentive target are summarised below. We would propose that the most up to date data is used in considering a target during the Final Proposals Consultation.

	D-1 13:00 Demand Forecast Error
Annual (12 months to 30 September 2009)	2.82%
Winter 2008/09	2.63%
Summer 2009	3.12%

Figure 4.6 – Actual Outturn Levels of Demand Forecasting

Note: This is actual data not a proposal for future incentive targets

95. Subject to agreement of suitable targets, National Grid is not aware of barriers to implementing this scheme on a two year basis. We would propose that any such scheme should be set with individual targets for each year. An alternative option would be to use the same target for each year, but we do not believe this would reflect the drive for continued improvements and the different levels of volatility in each year. We are inviting views on the appropriateness of introducing a two year scheme and should such a scheme be set, how the targets should be derived.

D-5 to D-2 Demand Forecasting Incentive

96. Following the consultation responses received, National Grid is proposing a new additional incentive around improving the accuracy of the D-5¹⁵ to D-2 demand forecasts. We believe that an incentive would increase focus on these forecasts, and the models and processes used to generate them. This increased focus should result in reduced forecast errors and should in turn help support efficient decision making by the users of the forecasts.
97. The incentive structure could be set in the same way as the D-1 13:00 incentive (i.e. annual, seasonal or daily) and as with the day ahead scheme National Grid believes that the impact of increasing external volatility factors should be incorporated in any incentive performance target.
98. To avoid proliferation of the number of incentive schemes and to minimise complexity of the arrangements, we are proposing that the incentive should use the average error of the D-5 to D-2 forecasts as the performance measure, rather than have separate incentives for each forecast. An alternative approach would be to weight the errors of each of the forecasts based on their relative value to the community. We invite views on whether a simple average or weighted approach should be adopted.
99. The current level of forecast error for these forecasts compared to the D-1 13:00 forecast, for the twelve months ending 30 September 2009, is shown in the figure below.

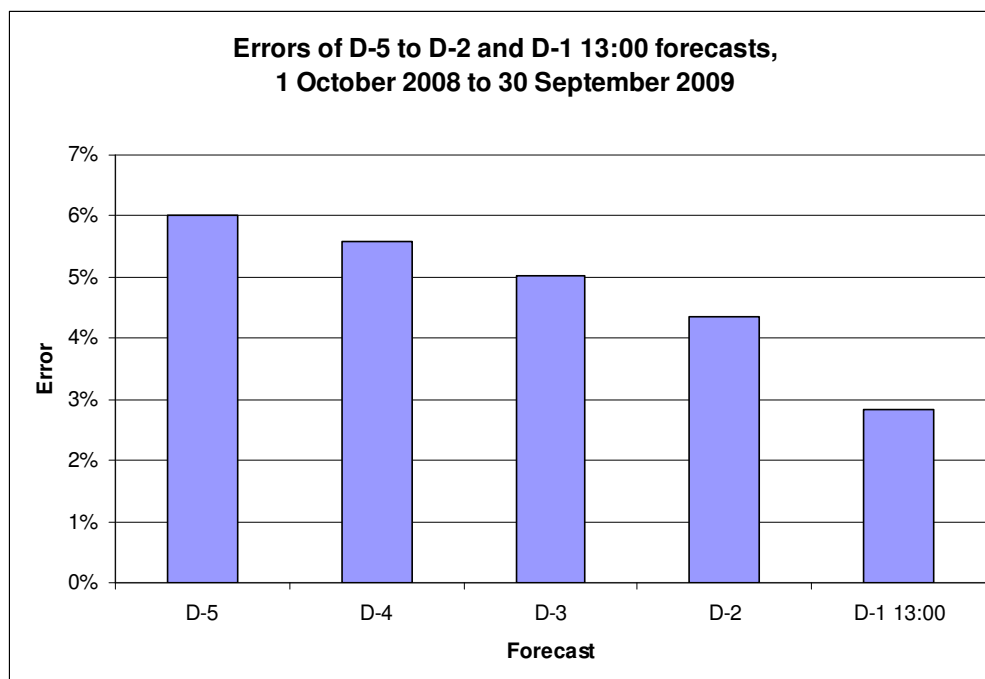


Figure 4.7 – Forecast Errors, for the Year 1 Oct. 2008 to 30 Sept. 2009.
Error is calculated as total absolute error divided by total demand.

¹⁵ The D-7 and D-6 forecasts are not currently published externally

100. A daily breakdown of these errors can be found in a datapack published in the Analyst Area of National Grid's website¹⁶.

101. The scheme could be set on an annual, seasonal or daily basis. As an example an annual scheme with a single performance measure could be defined as follows:

- For each forecast timescale (D-5 to D-2), the incentivised percentage error (IPE) would be defined in the same way as for the 13:00 D-1 forecast, by the sum over the year of the absolute errors divided by the sum over the year of the total demand, for example

$$IPE(D-5) = \frac{\sum_{day\ d} abs(D-5\ forecast\ demand - actual\ demand)}{\sum_{day\ d} actual\ demand}$$

- The combined error (CE) of the D-5 to D-2 forecasts would then be taken as the average of the IPEs of the four forecasts

$$CE = \frac{IPE(D-5) + IPE(D-4) + IPE(D-3) + IPE(D-2)}{4}$$

- Finally the performance measure (PM) would be defined by comparing the combined error with the combined target CT:

$$PM = \frac{CT - CE}{CT}$$

- As for the 13:00 D-1 forecast, an improvement in performance (PM) of up to 5% compared with the target would bring profits of up to £1.6m, with decreasing returns above this, while performance below target would lead to losses up to a maximum of £1.6m at a PM of -5%. The scheme is illustrated below.

¹⁶ <http://www.nationalgrid.com/uk/Gas/soincentives/AnalystArea/>

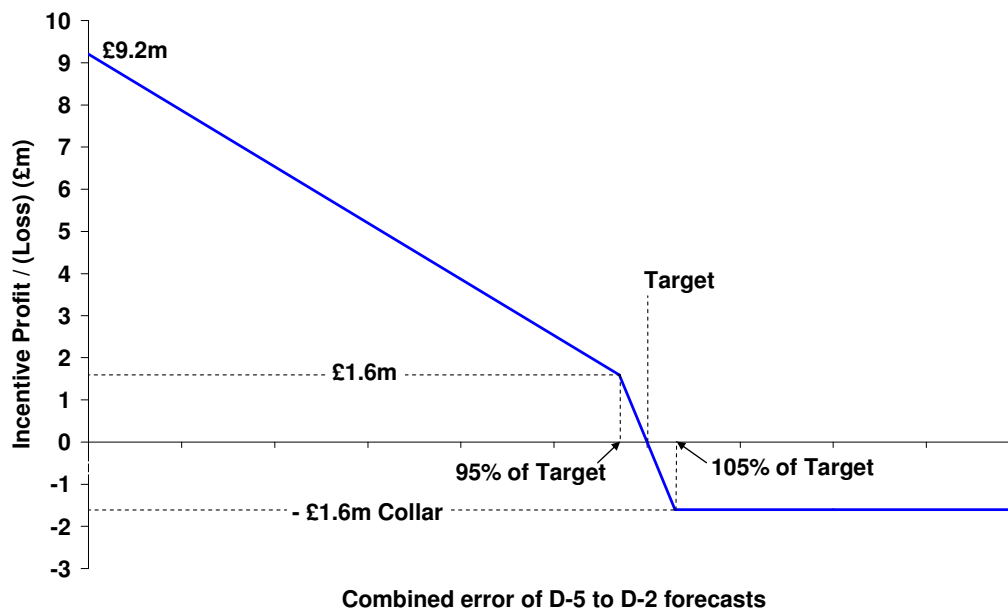


Figure 4.8 – D-5 to D-2 Demand Forecasting Incentive

102. As this would be a new incentive, we are inviting views on the introduction of this incentive and the proposed incentive scheme parameters, including whether it is appropriate for this scheme to be set using the same 5% performance measures and scheme value as the D-1 incentive. As with the D-1 13:00 scheme, this incentive could be set on a one or two year basis and views on this are also invited.

Issues with Introducing an NDM Demand Forecasting Incentive

103. Through this year's consultation, shippers have indicated that improvements to their individual shipper NDM forecasts would be of value as this forecast helps inform their NDM nominations and their balancing action decision process.
104. The current process, which results in the shipper specific NDM nominations being delivered via Gemini is summarised below.

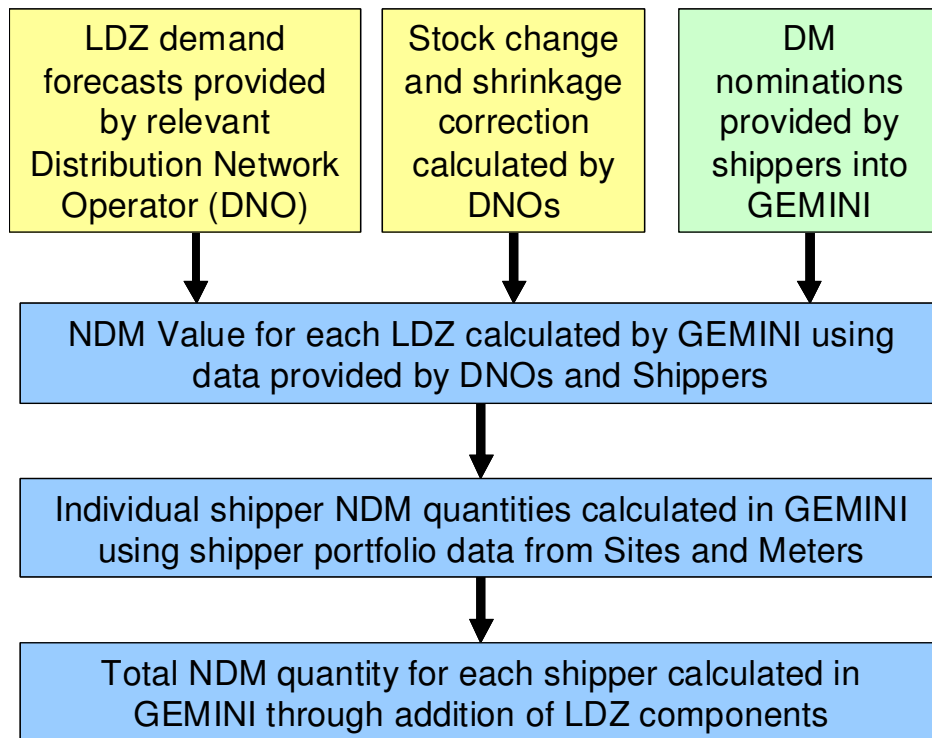


Figure 4.9 – Current NDM Forecasting Process

105. The key factors that affect the accuracy of NDM forecasts are the DN's demand forecasts (which are not incentivised) and the accuracy of the DM shipper's nominations (which are weakly incentivised through scheduling charges). Evidence from shippers suggests that the level of forecast error introduced by this process can be large.
106. As operator of the NTS, National Grid is not involved in the production of the NDM forecast and hence there is a question as to whether it is appropriate for National Grid to consider incentives in an area in which it currently has no input or control.
107. If National Grid were to be incentivised to improve the accuracy of the NDM forecasts there are two potential options available. The first option would be to look at improvements that could be made to the existing process, we expect that this would require UNC changes and significant changes to the Gemini system to deliver.
108. An alternative approach would be for National Grid to invest in a new alternative NDM forecasting capability, which would run alongside the existing processes. Development of such capability would require an amount of time and a level of cost (currently unknown). If developed this capability could provide NDM forecasts (nationally or at a DN level), which could be published on the National Grid website, and the accuracy of this forecast could then be incentivised.

109. We are not sure that development of this capability and publication of aggregated forecasts would be helpful to shippers who would still require individual forecasts for their own portfolios. In order to provide these individual NDM forecasts, it would require further investment to duplicate the processes already carried out in Gemini, including the need for secure communications with individual shippers either via new Gemini functionality or via an enhanced website secure area (or via the Shipper Information Service).
110. Both of the potential approaches identified could reasonably be expected to incur significant cost and require significant lead time to develop, and hence would not be in place for April 2010.
111. Given the lack of clarity over what role National Grid should be playing in seeking improvements to the NDM forecast, and the likely cost and timescales for any improvements to be made, we are not proposing an incentive in this area from April 2010. However, we are willing to investigate the above options further if users believe that National Grid NTS has a role to play in this area, with the aim of introducing incentive arrangements at a later date if a feasible set of arrangements could be arrived at that were acceptable to all relevant parties.
112. Pending the responses to this consultation, we will continue to look into the issues around NDM forecasting and raise these with the industry at an appropriate forum.

Question 4.1	Should the D-1 13:00 Demand Forecasting Incentive be set on an annual, seasonal or daily basis?
Question 4.2	On what basis should the performance target for any Demand Forecasting Incentive be set? What balance between continuous improvement and the increased external driven volatility should be struck?
Question 4.3	Would you support the introduction of an incentive around the D-5 to D-2 demand forecasts?
Question 4.4	Do you have any comments on the D-5 to D-2 proposed incentive scheme design and parameters, including the target and the value of the scheme?
Question 4.5	Are there particular periods of the year where accurate demand forecasts are of increased value? Is it appropriate that any seasonal or daily incentive should have equal value for each season (or day)?
Question 4.6	Are there any barriers to setting two year incentives around the D-1 or D-5 to D-2 demand forecasts?
Question 4.7	Should any D-5 to D-2 Demand Forecasting Incentive scheme operate on a simple average of the forecast errors, or should a weighted average of the forecast errors be used?
Question 4.8	Given the many issues highlighted, are you comfortable with the approach National Grid is proposing for the NDM forecast?

Section 5 Operating Margins

This section summarises the Operating Margins service, the Operating Margins requirement and the ongoing Contestability project, which is attempting to facilitate service provision from a wider pool of providers.

The issues impacting on the ability to re-introduce incentives are explained and National Grid proposes retention of the existing arrangements for a further year. Alternative incentive based options are outlined and views invited.

5.1 Background

113. Operating Margins (OM) gas is used to maintain National Transmission System (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. OM is therefore used to protect against the need to declare emergency conditions so that normal commercial market operation can be maintained where possible.
114. A quantity of OM is also procured to manage the Orderly Rundown of the System in the event of a Network Gas Supply Emergency (NGSE) whilst firm load shedding takes place.
115. National Grid's obligation to procure OM on behalf of the community is set out in the Uniform Network Code (UNC) and National Grid's Gas Transporter Safety Case in respect of the NTS (the 'Safety Case').
116. The Safety Case is a document prepared by National Grid to demonstrate compliance with the Gas Safety (Management) Regulations 1996 (GS(M)R). It primarily considers matters relating to management of the safe flow of gas within the network and the provision of an emergency service. In terms of OM, the Safety Case currently restricts OM to gas held in storage and the existing providers are therefore limited to:
 - Natural Gas Storage Facilities;
 - Liquefied Natural Gas (LNG) Storage Facilities; and
 - Liquefied Natural Gas (LNG) Importation Facilities with Storage.
117. In accordance with the provisions of the UNC, procurement from the National Grid owned LNG Storage Facilities is via regulated prices. Procurement of services from other facilities is on commercial terms.

118. Further information on OM, including the OM requirement, can be found in the consultation document published in September 2009¹⁷.

OM Requirement

119. There are three categories of OM requirement:

- Group 1: Managing pressures and the safety of the system following a beach supply failure or forecast demand change;
- Group 2: Support network pressures in the 24 hours following compressor and/or pipeline failures (which can require OM to be held both within locational zones and nationally); and
- Group 3: 'Orderly Rundown': Used to effect isolation of Very Large Daily Metered Customers (VLDMCs) and Local Distribution Zone Daily Metered (LDZ DM) loads such that the remaining predominantly domestic demand can be met with supply available at the time.¹⁸

120. Each of the Operating Margins Requirements will need a volume of gas delivered within 12 to 24 hours. Some of the Group 2 requirement is tied to a specific locational zone – as local network pressures cannot be maintained for sufficient time to transport OM services located further away.

121. The OM requirements are calculated using various assumptions including demand and supply levels, isolation profile assumptions as well as information on network topology and local demand levels¹⁹. The latest forecast volume requirement for 2010/11 compared to 2009/10 is shown in the table below.

	2009/10	2010/11 Latest Forecast
Supply Loss / Demand Forecasting change	357	337
Locational – North	10	10
Locational – West	117	114
Locational – South	93	93
Locational – Scotland	78	73
Non-locational	98	98
Orderly Rundown	577	499
Total	1330	1224

Figure 5.1: Operating Margins Requirement

¹⁷ The consultation on Operating Margins including an update on Contestability & Incentives is published here: <http://www.nationalgrid.com/uk/Gas/soincentives/docs>

¹⁸ Assumptions made in the calculation of the Orderly Rundown requirement are published within the Operating Margins Statement:

<http://www.gasgovernance.co.uk/sites/default/files/OperatingMarginsStatement200910.pdf>

¹⁹ When assessing OM requirements, National Grid bases its analysis on an assumed order of supply utilisation as described in the Operating Margins statement. Please see the latest OM Statement:

<http://www.gasgovernance.co.uk/sites/default/files/OperatingMarginsStatement200910.pdf>

OM Contestability

122. Special Condition C25 was introduced into National Grid's Gas Transporter Licence in respect of the NTS at the 2007 Transmission Price Control. This licence condition requires National Grid to use reasonable endeavours to promote competition in the provision of OM services.
123. To promote competition, National Grid is working to ensure that OM services are contestable such that any artificial barriers to competition can be reduced or removed and any provider who can reasonably provide the service is able to do so.
124. In order to facilitate the contestability of OM services, over the last two years National Grid has led developments in a number of areas to both increase the scope of potential providers and encourage further participation of existing providers.
125. Following responses from industry to the two consultations²⁰ last year and a range of bi-lateral meetings, the main focus has been on whether a reduction in demand from the NTS or an increase of supply onto the NTS could provide OM in the future. If successful, this would facilitate the procurement of OM from a wider market.
126. In order to allow this new type of provider, National Grid needed to change both the UNC and the Safety Case which stated that OM must be in the form of gas held in storage.
127. National Grid successfully proposed UNC Modification 0240 "Promoting Competition in Operating Margins Provision" to enable NTS-connected supply and demand sources to provide OM services under the UNC. This modification was approved and implemented on 16 February 2009.
128. In order for the Health and Safety Executive (HSE) to accept a material change to the Safety Case to allow OM provision from new types of providers, National Grid is required to make a demonstration to the HSE. This demonstration would need to show that these new types of provider would not increase the possibility of a supply emergency occurring when compared to the level of service that current service providers are able to deliver.
129. In order to gain the evidence necessary for a Safety Case demonstration, National Grid accepted two offers from potential new providers during last year's OM tender, with a view to testing the service from these providers during 2009. The two accepted offers were from:

²⁰ The OM Contestability Initial Consultation in Spring 2008, Conclusions on Operating Margins Contestability And Initial Thoughts for Associated SO Incentive Arrangements in Autumn 2008 and the responses received are available at <http://www.nationalgrid.com/uk/Gas/OperationalInfo/gasoperatingmargins>.

- A portfolio of supply increase and demand reduction from a number of power stations, a supply point and an industrial load from one shipper; and
- A single power station demand reduction from another shipper.

130. Testing of these providers took place this summer and National Grid has already commenced engagement with the HSE with a view to submitting the necessary information for the Safety Case Demonstration to allow OM to be provided by demand reduction and/or supply increase as soon as possible.
131. The HSE's decision on the Safety Case change could potentially allow a wider range of providers of OM, some of whom may adopt different pricing structures to existing providers. This could have significant impact on the design of any incentive and the setting of an incentive target.
132. Before discussing this and the other issues affecting the setting of an incentive further, the following section describes the current framework for dealing with the costs of OM.

5.2 Current Incentive Arrangements

133. The development of the package of SO Incentives for 2009/10 coincided with the ongoing OM contestability project, which presented a range of potential costs leading to complexity in designing an incentive scheme. These cost uncertainties arose from a lack of clarity on who would participate in the January 2009 tender process, what prices they would submit and whether Ofgem would lift the regulated prices²¹ at the LNG facilities. It was therefore decided that the availability (holding) costs, for both Deliverability and Capacity Contracts, should operate for one year on a cost pass through (subject to Ofgem scrutiny) basis.
134. For 2009/10, the relatively small utilisation incentive scheme from 2008/9, summarised in the figure below, was retained.

²¹ Charges for OM services from National Grid LNG Storage are defined in Special Condition C3 of the Gas Transporters Licence in respect of the NTS. In spring 2009, Ofgem consulted on a licence modification to enable the 'C3' prices for OM services to be suspended if appropriate.

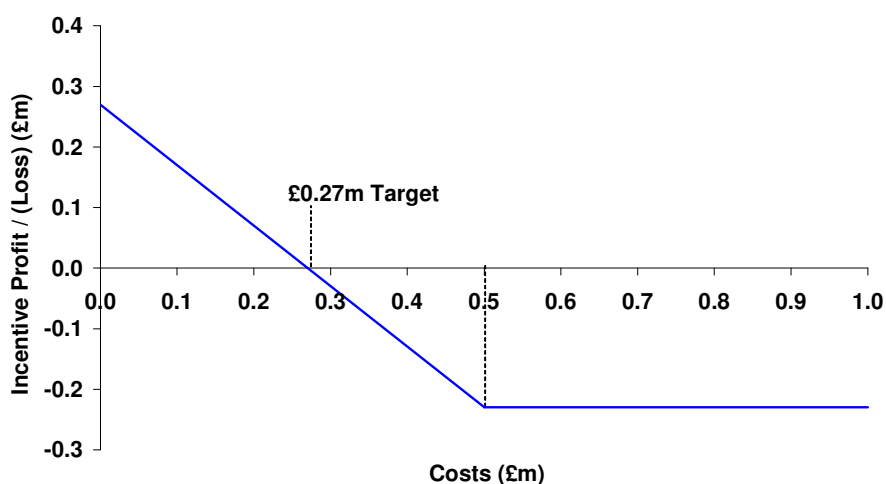


Figure 5.2: 2009/10 Operating Margins Utilisation Incentive Scheme

135. The separation between availability and utilisation schemes was introduced from April 2008 to better recognise National Grid's adopted risk profile associated with not securing full deliverability rights²² for gas held in store when required for a low probability OM event. This dramatically reduces the overall annual cost to industry and minimises National Grid's potential intervention into the wider storage market²³.
136. Gas can be held in storage for OM by National Grid or by a third party on National Grid's behalf. Where gas is held in storage by National Grid, there is a UNC mechanism that enables National Grid to recover the original cost when the gas is no longer required. However, the financing costs associated with holding this gas in store are not currently funded. This issue and a potential correction are described in more detail in Section 5.6.
137. In Consultation Document 3, published in September 2009, we invited views on a number of OM issues including incentivisation.

5.3 Consultation Responses

138. All of the responses supported the steps that National Grid had undertaken in leading the Contestability project. A majority of the responses specifically stated that new provider types could play a significant role in the provision of the OM service.
139. The responses also identified that the information provided in National Grid's Invitation to Tender (ITT) documentation and Tender Information Report were

²² National Grid would pay the facility 'over-run' charges or attempt to secure short-term deliverability rights prior to utilisation

²³ For Further details: Initial Proposals 2008

<http://www.nationalgrid.com/NR/rdonlyres/CD1B073C-77E6-4235-86F0-4F46E375B5DF/21919/GasandElectricitySOIncentivesInitialProposalsConsu.pdf>

appropriate. Respondents also stated that the additional information on the requirement and potential market for OM services, contained in the September 2009 consultation document was helpful.

140. In terms of the January 2010 tender round, the key piece of information that parties requested was as much notice as possible on the HSE decision on whether the Safety Case Revision has been accepted.
141. The majority of the responses stated that OM should be subject to an incentive or Ofgem scrutiny to ensure costs of the service are minimised. Responses generally supported a total cost incentive, although some of the responses had caveats that the HSE would need to have approved or made a decision, one way or the other, on changing the Safety Case, for this view to be held.
142. There was, however, recognition of the challenges associated with setting an incentive target. Given the uncertainties around OM, there was no support for setting an incentive for longer than one year.
143. On the issue of the financing costs of gas held in storage, the responses generally requested more information on this concept and how it would work in practice. This is discussed further in Section 5.6 of this document.

5.4 Issues Impacting on an OM Incentive

144. This section summarises the issues and uncertainties around setting an incentive on Operating Margins from April 2010.

Regulated C3 Prices

145. The National Grid owned LNG storage facilities provide OM at regulated prices (the C3 prices) set by Ofgem.
146. Should Ofgem choose to remove any or all of the C3 prices, allowing National Grid LNG to submit unregulated prices into an OM tender, then potentially significant changes to any OM incentive target would be required.

HSE Safety Case Decision

147. National Grid will be submitting a Safety Case demonstration to the HSE as soon as possible. If successful, this would remove the restriction that the service must be provided from gas in store, allowing service provision by demand reduction and supply increase.
148. The HSE's decision on whether to allow the new types of providers to participate in the OM service could impact on the design of any incentive and the value at which any incentive target should be set.

Utilisation Risk

149. Utilisation of OM is a low probability but potentially high cost event, although costs would be expected to be small in any one year. This is in contrast to availability costs which in any one year are relatively stable and predictable.
150. Any incentive design therefore needs to address the different risk profiles of, and National Grid's level of control over, the two different components of OM costs. This issue may become increasingly complex going forward should OM be provided by new types of providers who could adopt differing pricing approaches to the existing providers.

5.5 Initial Proposals

151. National Grid believes the focus on OM should be concentrated on delivering contestable arrangements that should help increase the level of competition in the provision of OM services.
152. We are therefore proposing that OM availability costs should operate on a cost pass through (subject to Ofgem scrutiny) basis for a further year. The existing type of small utilisation scheme could, with a review of the scheme target, be retained for a further year.
153. We are, however, aware of concerns that should the HSE approve a change to the Safety Case, that if any new providers adopted different pricing structures to existing providers, this could result in perverse incentives on National Grid's acceptance of any OM tenders. If availability costs are to operate on a cost pass through basis, an alternative to retaining the existing utilisation incentive would be to also allow utilisation costs to operate on a cost pass through basis for one year. Conversely, if the HSE were to reject a change to the Safety Case, and new types of providers were not allowed to provide the OM service, then some of the complexities associated with setting an incentive would be removed.
154. If parties believe that an incentive should be introduced from April 2010, then we believe there are two incentive structures that could be adopted:
- A total cost incentive; or
 - Separate incentives around utilisation and availability costs.
155. Given the uncertainties described in Section 5.4, it is not currently clear to National Grid which of the incentive designs would be most appropriate. A target set under either of these incentive structures would need to include mechanisms to adjust the target for the impact of any HSE decision and any changes to the regulated prices for OM provision from LNG storage.
156. Should any, or all, of the C3 prices be removed, we would propose that the scheme should operate on a cost pass through basis, as we believe that there

would be too much uncertainty to set a fair incentive target under this scenario.

157. As in previous years, the assumptions used to set any incentive target (i.e. volumes and prices at individual facilities) would need to be a bilateral process between National Grid and Ofgem. No potential incentive targets are presented here given the large number of potential schemes and the current levels of uncertainty.
158. We are inviting views on our proposals, the alternatives presented or whether there are other options that should be considered.

5.6 Financing of Gas in Storage

159. There are currently two different types of contractual arrangements for providing OM, which are summarised below:
- Capacity arrangements between National Grid and either a facility operator or a capacity holder at a facility, allow National Grid to store and withdraw gas from storage when required. Under these contracts, National Grid purchases gas to place into store on behalf of the industry.
 - Delivery arrangements allow National Grid to instruct a counterparty to deliver gas onto or reduce offtake from the NTS at an agreed location(s). Currently, this could be from gas that the counterparty holds in storage (either at a storage facility or from storage at an LNG importation facility). Should the HSE accept a Safety Case proposal to allow new types of OM providers, demand reduction and supply increase could also provide OM through delivery arrangements.
160. Under the existing UNC rules for Capacity Arrangements, National Grid purchases the gas that is placed in storage. When the gas is either utilised or sold (i.e. when it is no longer required), National Grid recovers the original cost of these gas purchases, with any difference (positive or negative) being passed back to shippers.
161. Under these arrangements, National Grid therefore funds the financing costs of holding the gas purchases for the duration that the gas is held in store. These costs are not recovered from the community. We believe that this funding gap is inappropriate for a service procured by National Grid on behalf of the community to protect against the need to declare emergency conditions. The funding gap may potentially also create perversities in the OM tender assessment as explained later in this section.
162. For some Delivery Arrangements, there would be similar costs associated with financing the costs of holding gas or alternative fuel in storage until it was required. However, the party incurring these costs is able to recover these

through the prices submitted in any tenders to National Grid.

163. This difference in the funding arrangements between the two types of arrangements has the potential to create perverse decisions during assessment of any tenders. A simple example of this can be shown by considering the provision of OM through holding gas in store from both a Delivery Arrangement and a Capacity Arrangement.

- This example assumes that the actual availability costs under either option are the same (£100k) and the financing costs associated with holding this gas in storage, which may not be utilised, are £5k. The provider of a Delivery Arrangement would look to recover these financing costs through an increase to the availability costs to £105k.
- The costs of potential OM tenders could therefore be summarised as;

	Availability Costs	National Grid Financing Costs	Total Costs Of OM service	Total Costs not covered by current arrangements
Delivery Arrangement	£105k (including financing)	N/A	£105k	£0k
Capacity Arrangement	£100k	£5k	£105k	£5k

Figure 5.3: Example of OM Costs under the two types of Contractual Arrangements

- Under both options, the total costs of the OM service are £105k, however under the existing arrangements National Grid is only able to recover the full amount under one of the two scenarios and there is an incentive to choose the Delivery rather than the Capacity Arrangement, although if only the tendered prices are considered this looks more expensive.

164. The following table shows another scenario, where the total costs of the contractual arrangements are different:

	Availability Costs	National Grid Financing Costs	Total Costs Of OM service	Total Costs not covered by current arrangements
Delivery Arrangement	£105k (including financing)	N/A	£105k	£0k
Capacity Arrangement	£95k	£5k	£100k	£5k

Figure 5.4: Example of OM Costs under the two types of Contractual Arrangements

- If National Grid were to choose between the two contracts, the Capacity Arrangement would be the overall economic and efficient option. However, under the current framework National Grid is exposed to £5k of costs under this option, compared to £0 for the Delivery Arrangement. Therefore there are potentially conflicting drivers that could influence tender assessment, which could result in overall higher costs of service provision.

165. These examples are intended to show the potential perversities that can exist if all costs are not considered in any tender assessment. Introducing a mechanism that would allow financing costs to be considered alongside other OM costs, would allow tenders from all types of provider, including demand side, to be assessed on a fair and equitable basis.
166. We believe there are two approaches that could be adopted to allow recovery of these financing costs. The first would be to allow National Grid to recover these costs through an incentive target or to adjust the UNC so that National Grid is allowed to recover the financing costs of the gas in storage²⁴.
167. Under a cost pass through scenario, in the absence of changes to the UNC, this would mean passing through financing costs alongside the other elements of the availability cost. The value of this amount could be calculated using the value of gas held in storage and the regulated rate of return (6.25%). As a guide, the cost of financing the current amount of gas held in storage is under £600,000.
168. Should an incentive be introduced, the cost of financing gas held in store would need to be included within the incentive target and included in any performance measure.

Question 5.1	Do you support National Grid's proposal that OM availability costs should operate on cost pass through basis for a further year? If so should utilisation costs also be passed through or subject to a small incentive?
Question 5.2	If OM was to be incentivised what structure of incentive should be put in place (i.e. combined basis or separate availability and utilisation schemes)?
Question 5.3	Should a mechanism for funding the financing costs (explained in Section 5.6) be introduced? Should any funding be provided through the incentive or a change to the UNC?

²⁴ If there were a change to the UNC rules, allowing recovery of financing costs, we believe these costs should also form part of any incentive performance measure.

Section 6 Environmental Incentives

This section describes the existing NTS Environmental Incentive and how, in response to the incentive and our environmental Best Available Technique (BAT) obligations, National Grid has identified the requirement for a recalculation of the target for the 2009/10 scheme. Proposals for this incentive from April 2010 onwards are made.

This year we have consulted on the potential extension of Environmental Incentives to other areas associated with the operation of the NTS. Based on the responses received, the current level of development of the various technologies and uncertainties over any cost/benefit of adopting these technologies, no new Environmental Incentive schemes are proposed.

6.1 The Existing Environmental Incentive on NTS Compressor Venting

169. NTS compressors are used to increase pressures in parts of the NTS and to move gas from the sources of supply to areas of demand. National Grid has compressors installed at 27 sites across Great Britain.
170. The need to operate an individual compressor on any given day will depend on a number of circumstances including the sources of supply and demand, the prevailing network conditions and the need to accommodate maintenance and construction plans.
171. These compressors release natural gas to atmosphere from a number of activities which are summarised below:
- Purging the compressor (and fuel lines on gas powered compressors) of air, prior to starting a compressor. This is necessary to remove the risk of air entering the pipeline system;
 - On some compressors, natural gas is used to start the compressor;
 - On some of the gas powered compressors, there is a small amount of leakage around a seal on the compressor shaft when the compressor is pressurised. This seal is used to separate combustion products from the areas where pipeline gas is being compressed; and
 - Depressurising a compressor and associated pipework, the largest source of venting from NTS compressors. This depressurisation does allow auxiliary electrical equipment such as ventilation fans and oil heating/circulation pumps to be switched off saving on the electrical costs and reducing the environmental impact of consuming this electricity. Depressurisation can occur for a number

of reasons:

- When the compressor is no longer required for active duty;
- To allow maintenance to be safely carried out; and
- For safety reasons, should the compressor trip²⁵.

172. It should be noted that the requirement to purge and depressurise the compressor applies equally to electrically driven compressors as it does to gas driven units.

173. The NTS Environmental Incentive was introduced from April 2008, to ensure that the environmental (equivalent carbon) cost of venting from gas powered compressors was factored into operational decisions on whether to vent or to incur the costs of keeping a unit pressurised.

174. The amounts of natural gas vented are not directly measured, and are instead calculated using a number of fixed constants (volume of pipe work etc.) and measured parameters (pressures, temperatures, etc.). The measured parameters are taken from the COAS system, which is the operational system used to optimise the performance of a compressor gas generator²⁶.

175. The incentive for 2008/9 did not include electrically driven compressors as the COAS system was not installed on these units (as they had no gas generators). For the incentive year 2009/10, the incentive was extended to include electric drive compressors through the introduction of an offline solution.

6.2 Consultation Issues on the Existing Environmental Incentive on NTS Compressor Venting

176. The existing incentive for 2009/10 is summarised in the figure below. The volume target (1777 tonnes) of vented natural gas was set on a weighted basis using the outturn vented volumes from the previous three calendar years (2006, 2007 and 2008). The incentive strength of £574 per tonne of natural gas vented²⁷ was set using the carbon equivalence of natural gas released to atmosphere and Defra's shadow price of carbon.

²⁵ E.g. in response to the compressor's control system detecting a fault or alarm condition

²⁶ The part of the compressor which combusts gas in order to provide the rotational energy required by the compressor

²⁷ Above or below the $\pm 5\%$ deadband around the target volume

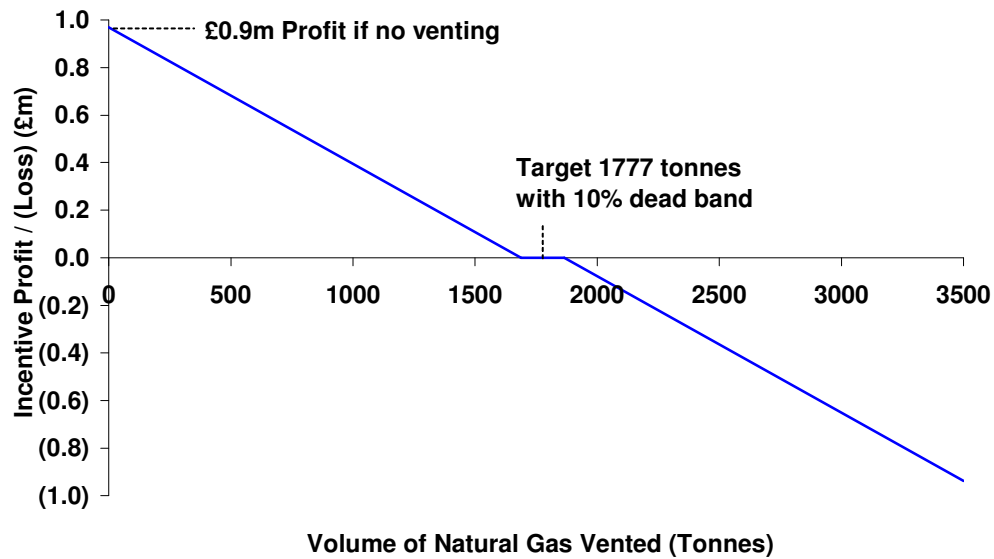


Figure 6.1: 2009/10 NTS Environmental Incentive

177. In response to the incentive and our obligations to the environmental agencies, National Grid has initiated work which reviews the methodology used to calculate the amounts of natural gas released.

- Review of vented amounts for 2008/9
 - As part of the normal end of year review in advance of submitting the regulatory reporting pack to Ofgem, the data items and their calculation were reviewed.
- Fuel Metering Project
 - All aspects of the methodology, measurements and constants are being surveyed at an approximate cost of £100k. Results are expected later this year.
- Installing emission calculation software on the electric drive sites
 - Venting from electric compressors is currently manually calculated. A software system could be installed on electric compressors to standardise and automate the venting calculation method to that on gas powered compressors.

178. The review of vented amounts for 2008/9 identified an error in the calculation of the amounts vented, with some occurrences of venting not being previously recorded. On further investigation, it was found that this error resulted from modifications made to the COAS system in the last week of December 2007. National Grid commissioned an external investigation to review the source of the error, which was rectified.

179. The recalculated amount of natural gas vented for the incentive year 2008/9 was included in the final regulatory reporting pack provided to Ofgem but as the error was found after the setting of the 2009/10 incentive, the error has not been reflected in the incentive target. The corrected amounts vented on a calendar year basis are shown in the table below.

Calendar Year	Previous calculation (Tonnes)	Corrected calculation (Tonnes)
2001	2098	2098
2002	1819	1819
2003	2383	2383
2004	1922	1922
2005	2213	2213
2006	2283	2283
2007	1887	1887
2008	1534	1934

Figure 6.2: Natural Gas Vented from Gas Powered NTS Compressors

180. During this year's consultation, we have stated that we believe it appropriate that the incentive target for 2009/10 should be recalculated, so that the incentive performance and target operate on a consistent basis. This would ensure that any incentive payments or penalties reflect genuine changes in actual performance.

181. We also highlighted that the other ongoing studies may result in the need for further changes to the calculation methodology and that these studies should be completed towards the end of 2009. Views on our proposal for a recalculation of the incentive target and whether any change should be implemented through a single change to the target, once all the relevant studies were completed, were invited.

182. Responses to the consultation supported the proposal to correct the incentive target for 2009/10, as long as the corrections were carried out on a consistent basis. In terms of the timing of any change, one party believed it a pragmatic approach to avoid multiple changes whilst the other believed that changes should be introduced annually and incrementally.

6.3 Initial Proposals for the Environmental Incentive on NTS Compressor Venting

183. For the current incentive year (2009/10), we believe the incentive target should be recalculated using the calendar year venting data corrected for the error, using the same 3:2:1 weighting factors used in the previous calculation and the same $\pm 5\%$ deadband around the target. These changes are summarised in the following table. As the Fuel Metering Project is currently ongoing, we propose that any resulting changes to the calculation methodology should not be implemented for the 2009/10 incentive year and

hence no further corrections to the 2009/10 incentive target would be required.

	Previous calculation (Tonnes)	Corrected calculation (Tonnes)
Target	1777	1977
Deadband	1688-1865	1878-2076

Figure 6.3: Environmental Incentive Volume Target for 2009/10

184. For 2010 onwards, we believe it is appropriate to retain an incentive around the venting from NTS compressors as the scheme ensures that environmental considerations are factored into the System Operator's decisions about keeping compressors pressurised or whether to vent them.
185. The purpose of this scheme is to expose National Grid to the environmental costs (or benefits) of increased (or decreased) volumes of vented natural gas above (below) the target level, set on based on historic levels of venting. The scheme therefore incentivises changes to National Grid's behaviours and is not designed to reflect total environmental costs associated with venting.
186. Last year, Ofgem set the target based on weighting factors (3:2:1) applied to the last three years of calendar year data. We believe this remains an appropriate method to set the target. For example, if the target was reduced, this would suggest that National Grid should reduce venting, which could result in compressors remaining pressurised for longer, increasing electricity consumption and potentially the overall impact on the environment²⁸.
187. Assuming the ongoing Fuel Metering Project is completed before the target is set, we believe that any resulting changes to the calculation methodology should be applied to the historic data and hence the target set for 2010/11 (and subsequent years). This will ensure that the target is set on a basis consistent with the measurement of performance.
188. We would propose retaining the existing $\pm 5\%$ deadband around the volume target as this helps protect against any windfall profits or losses from the small amount of year-on-year volatility in the outturn performance.
189. The environmental impact of releasing natural gas into the atmosphere is currently valued under the incentive based on the environmental CO₂

²⁸ The environmental impact of increased electricity consumption would be expected to be included in price paid for the electricity purchased.

equivalence of the components of natural gas²⁹ and Defra's shadow price of carbon³⁰.

190. The Government's approach to carbon valuation has undergone a review³¹, concluding in July 2009. The new approach moves away from a valuation based on the damages associated with climate change and is instead based on the marginal cost of mitigating emissions if emissions targets are to be met. This approach values traded carbon (e.g. under EUETS³² at ~£21 per tonne of CO₂ equivalent in 2009) and non-traded carbon differently (~£51 per tonne of CO₂ equivalent in 2009)³³.
191. National Grid believes that for the incentive from April 2010 it is appropriate to use the latest Government advice and update the incentive to use the non-traded carbon price calculated by the Department of Energy and Climate Change (DECC).

Incentive Year	Non-Traded Price Basis	Shadow Price of Carbon Basis
2010/11	£1100	£586
2011/12	£1156	£619

Figure 6.4 Carbon Pricing Options for the Environmental Incentive (£/tonne of vented natural gas)

192. Consistent with the view taken at the time that this incentive was first introduced, we believe even with this potential step change in carbon price, that caps and collars around the scheme are not required. Any caps or collars would imply that there was a point beyond which National Grid should not attempt to further reduce (or avoid further increase to) the amount of natural gas vented.
193. National Grid is not aware of any barriers or disadvantages to setting this incentive for a two year period and we would therefore propose that this scheme could be set for a two year period.
194. For the second year of the incentive, we would propose setting the volume target using the same weighting factors to the past three calendar years. An

²⁹ A tonne of natural gas released into the atmosphere is 20.6 times more polluting than a tonne of carbon dioxide. Calculation based on average gas composition and data from IPCC

³⁰ Shadow Price of Carbon internet page on Department of Energy & Climate Change (DECC) website:
http://www.decc.gov.uk/en/content/cms/what_we_do/lc_uk/valuation/shadow_price/shadow_price.aspx

³¹ Report on revised approach to carbon valuation from DECC website
http://www.decc.gov.uk/media/viewfile.ashx?filepath=what_we_do/a_low_carbon_uk/carbon_valuation/1_20090715105804_e_@@_carbonvaluationinukpolicyappraisal.pdf&filetype=4

³² European Union Emission Trading Scheme

³³ DECC guide to new carbon values and their use
http://www.decc.gov.uk/media/viewfile.ashx?filepath=what_we_do/a_low_carbon_uk/carbon_valuation/1_20090901160357_e_@@_carbonvaluesbriefguide.pdf&filetype=4

alternative approach would be to set the 2010/11 target for a two year period. Under either option for the second year, we would propose setting the incentive strength using DECC's 2011/12 non-traded carbon price.

6.4 New Environmental Incentives

195. This year's consultation has included consideration of whether environmental incentivisation should be extended to other assets and processes associated with the operation of the NTS.
196. In Consultation Document 2, published in August 2009³⁴, National Grid explained which assets and processes used in the operation/maintenance of the NTS result in the release of natural gas into the atmosphere. We also explained the various environmental regulations that have already led to National Grid initiating a number of studies that are investigating potential technologies, which if successfully developed could lead to a reduction in these emissions.
197. Given the potential costs of these technologies, views were invited on whether these should be considered for inclusion under SO Incentives or whether they were more suited to Price Control Review discussions.
198. None of the consultation responses supported the introduction of new Environmental Incentives, with parties commenting that they believed that there was a risk of double counting³⁵ and that the activities were asset based and hence more suited to Transmission Owner (TO) activities rather than operational (SO) activities.
199. From an incentive design perspective, one party also commented on the difficulties in setting targets and auditing performance of any scheme around ad-hoc processes with no direct measurement.
200. As the various projects looking at the potential technologies that could reduce emissions are still at the feasibility stage, none of the technologies are at a stage where they could be widely deployed in 2010/11. Given the status of these projects there is also no meaningful cost/benefit information available.
201. For a number of reasons explained above, we are not proposing the introduction of any new Environmental Incentives from April 2010.

³⁴ The Environmental Incentive consultation and its responses are available on the National Grid website: <http://www.nationalgrid.com/uk/Gas/soincentives/docs>

³⁵ With the existing Unaccounted for Gas (UAG) incentive.

Question 6.1	Do you support the proposal for recalculating the Environmental Incentive target for 2009/10 to ensure consistency with the performance measure?
Question 6.2	Do you support the proposed approach, summarised below, to setting the Environmental Incentive? <ul style="list-style-type: none">• using the weighted historic data to set the volume target;• using DECC's new non traded carbon price;• retaining the $\pm 5\%$ deadband; and• no requirement for caps and collars.
Question 6.3	Are there any barriers to setting the Environmental Incentive for a two year period?
Question 6.4	Do you agree with National Grid's view that no new Environmental Incentives should be introduced from April 2010?

Section 7 Maintenance

In industry 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 planning process and the views that have been expressed during this year's consultation.

No incentive on maintenance is proposed. Views are sought on the additional information that should be captured to inform future discussions on how the maintenance planning process could be improved and/or incentivised.

7.1 Background

202. 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 for these restrictions is defined in the Maintenance Programmes, which are managed by a process defined in Section L of 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 this essential work on the NTS.
203. 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.
204. National Grid tries to ensure that the necessary maintenance days coincide, where possible, with planned maintenance by Users. This is achieved by an iterative planning process where the needs of all parties are taken into account and, where possible, met.
205. 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 Annual Maintenance Meeting(s); and

- by 1 April National Grid NTS will publish the Maintenance Programme.

For the October Maintenance Programme:

- by 30 June, Users will provide updated estimates of their own maintenance dates;
- 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; and
- by 1 October National Grid NTS will publish the Maintenance Programme.

206. This two way process allows, in the majority of cases, 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.
207. 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).
208. The programme is communicated to all potentially affected Users by fax, describing the duration of the maintenance day and the likely impact on flows, and a copy of the maintenance programme is also made available via the National Grid website.
209. Once the programme is finalised, notification of changes to the programme initiated by National Grid or requests for changes from Users must be given with 30 working days notice. Any change request from Users is assessed by National Grid with the following issues being taken into account:
- Potential impact on Users:
 - Coincidence with their notified maintenance;
 - Flow restrictions; and
 - Previous changes.
 - Potential impact on National Grid:
 - Resource availability;
 - Cost implications; and
 - Impact on other work and Users.
210. Where possible, Users' change requests will be accommodated but there will be occasions where a change cannot be accommodated for one or more of the reasons identified above.

211. As mentioned above, 30 working days notice must be given in order to comply with the UNC process, however, under some circumstances a change may be made at less than 30 working days notice if both parties agree.

7.2 Industry Feedback on Maintenance Planning

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

213. 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 suggesting the need for the introduction of an incentive around maintenance planning.

214. Through this year's consultation process, we have been seeking further views on the exact nature of the perceived issue that had led to these comments, and whether an incentive was the best way of addressing these.

215. Overall, the feedback has indicated that the current process works well, with anecdotal evidence suggesting that each year there are a low number of events which cause significant issues for Users. The feedback we have received on the nature of the issues with the current maintenance process can be summarised as:

- National Grid should avoid changes to the original maintenance dates;
- National Grid should be more flexible if Users request changes to the agreed maintenance dates;
- Clearer information on the impact of a specific maintenance task (e.g. will the work take all day or one hour, start time and duration of a pig run, which days are contingency days etc.); and
- Further data on the operation of the current maintenance process is required to help the industry form a view on the need for change.

216. Through Consultation Document 1, published in July 2009, National Grid sought views on exactly what behaviour changes any incentive would be trying to achieve, and how any such incentive may be designed.

217. The majority of responses indicated that National Grid should capture more information on the current maintenance process, and that there should be further clarity on exactly what behaviours an incentive would be trying to address before implementing an incentive. Those that supported the introduction of an incentive indicated that this should be based around

National Grid avoiding changes to the originally notified maintenance programme dates.

7.3 National Grid's Views

218. National Grid believes there are a number of areas where further clarity is required before introduction of an incentive should be considered:

- Whether a socialised incentive scheme is the best way for resolving issues on a small number of occasions/locations per year;
- The need for a consensus view on exactly what behaviours any incentive was aiming to achieve, and whether these could be better achieved through other means:
 - For example should consideration be given to promoting the use of bilateral minor works agreements, where a party requesting a change to the maintenance plan could fund National Grid's additional costs (should there be any);
- The potential for unintended consequences of placing a commercial incentive regime around what is currently a safety-based process which relies on co-operative working between parties;
- The impact of the introduction of an incentive on National Grid's ability to efficiently carry out essential or safety related maintenance. This could particularly be the case under schemes which sought to minimise the number of maintenance dates or limited our ability to move maintenance. For example whether it is prudent and efficient to include contingency days in planning pigging runs; and
- How would any scheme be designed?
 - As the amount and type of maintenance varies year-on-year, how would a fair performance target be set;
 - What value would be placed around the scheme; and
 - How would an incentive treat events where there were different requirements from the affected parties (assuming more than one party was affected).

219. Given the number of unanswered questions, particularly whether an incentive is the best way of improving the process, National Grid is not proposing a new maintenance incentive to apply from April 2010. However, we believe that further information capture is required to help further consideration of this issue, and our views on information requirements are summarised in the

following section.

7.4 Maintenance Information Requirements

220. Information requirements can be broken down into two areas, the bilateral communications between National Grid and a User over a specific piece of maintenance, and general industry wide information, which summarises the operation of the maintenance processes.

Bilateral Information

221. Where National Grid needs to call a maintenance day, this is communicated by fax to the affected parties. These faxes contain information on the dates, nature of the work and likely time taken for the work to be carried out. Contact details for any enquires are also provided.
222. For example, on “pigging” runs these faxes include information on the types of pigs being used, whether the day is a contingency day, the expected launch time of the pig, and the expected duration of the pig run.
223. During this year’s consultation, we have received feedback that parties are not always aware of the nature of the work being carried out or the likely duration of the work. We are therefore inviting views on how the information provided via these faxes could be improved.

Industry Wide Information

224. Following the responses to last year’s Final Proposals, National Grid began capturing information on the operation of the maintenance process. This information was published in Consultation Document 1 published in July 2009 and an updated version is summarised below.

	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	11	34
Number of Users’ requests accommodated by National Grid	15	11	26
Number of Users’ requests not accommodated by National Grid	8 ³⁶	0	8

Figure 7.1 – Summary of Changes to the 2009 Maintenance Programme

³⁶ In one of these cases revised flow rates were agreed rather than the requested date changed

225. To put this level of change into context, the 2009 maintenance plan affected 54 different sites as a result of 76 separate pieces of work. The 34 requests for changes relate to 28 different sites.
226. Publication of this information has been welcomed and going forward we intend to publish this information on a quarterly basis on the National Grid website.
227. We would welcome views on whether there are any other data items that it would be useful to begin capturing and publishing, that would help parties better understand the management of, and issues with the maintenance process.

Question 7.1	Do you support National Grid's view that no Maintenance Incentive should be introduced from April 2010? If not, please explain what incentive you believe should be introduced and how the scheme parameters should be set.
Question 7.2	Do you have any suggestions of how the bilateral information provided to parties affected by maintenance could be improved?
Question 7.3	Do you support our proposal to publish information on the maintenance process on a quarterly basis? Are there other data items which you believe it would be helpful to capture?
Question 7.4	Do you have any other suggestions of how the maintenance processes could be improved?

Section 8 Data Publication

This section describes the existing Data Publication Incentive and summarises the responses to this year's consultation on this Incentive.

Proposals for retaining the existing incentive for two years from April 2010 are made and views on this proposal invited.

8.1 Background

228. 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.
229. 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.
230. 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 provide the required performance improvements, subject to such improvements actually being made.
231. This incentive related to publication of information on the National Grid website³⁷ and includes information on NTS demand forecasts, predicted closing linepack, forecast flows into the NTS and the physical flows into the NTS.
232. The incentive was subsequently changed to ensure the maintenance of the current levels of performance, rather than seeking to fund further investments and improvements³⁸. To reflect this change the value of this incentive has been reduced to a maximum profit or loss of £100,000/year.

³⁷ <http://www.nationalgrid.com/uk/Gas/Data/prevalingview/>

³⁸ Note: There is a separate cost recovery mechanism to fund delivered improvements

8.2 The Existing Data Publication Incentive from April 2009

233. Four responses to last year's Initial Proposal consultation process supported the removal of the Data Publication Incentive, whilst two responses indicated that the incentive should be retained. One of these two suggesting that the scheme should be set for the remainder of the Price Control period.
234. In its Final Proposals, Ofgem noted that the majority of responses supported removal of this incentive but that there were no responses from small suppliers and larger consumers, who may place importance on this information. Ofgem decided to retain the existing incentive for a further year, to allow further discussions with small suppliers and large consumers.
235. Under this scheme National Grid receives £75,000 if performance measures for timeliness and availability are met. There is a 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.

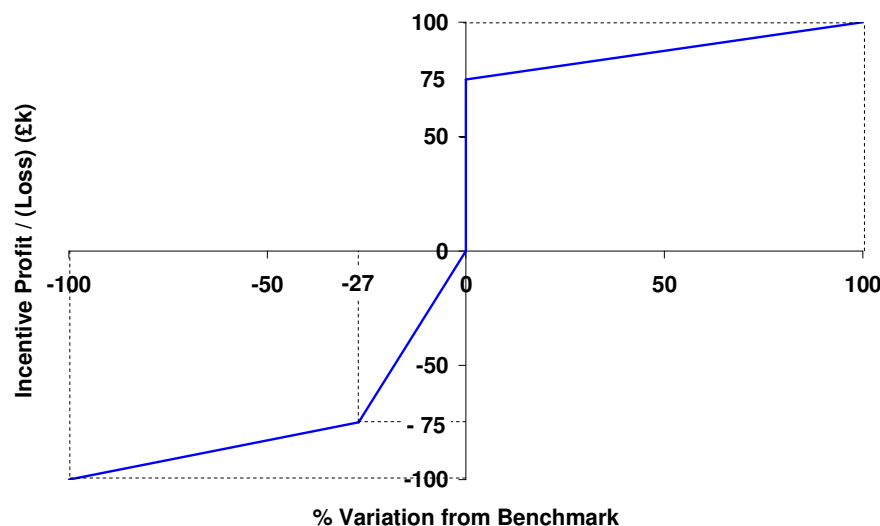


Figure 8.1 – Data Publication Incentive

8.3 Issues Raised through this Year's Consultation

236. In Consultation Document 1, National Grid highlighted the additional activities that were undertaken as a direct consequence of the performance levels specified in the incentive.
237. Through the consultation document and via industry meetings, National Grid has invited views on the value that users put to the incentivised information, whether the current incentive performance levels are set at the right level, the duration of any incentive and whether any other published data should be

included within the incentive.

238. All of the feedback we have received indicates that publication of the currently incentivised information at the current performance levels remains important and of value to the users of this information.
239. The six written responses generally showed a lack of support for the continuation of the Data Publication Incentive or at least a need to reduce the payment over time. The reasons for these responses included comments that the provision of information was a routine activity and that funding to maintain levels of service already achieved was not required. One response did state that the current incentive represented an appropriate balance between the cost to the SO and the benefits from making this data available.
240. It should be noted that the responses received were from the same organisations that responded to the consultation last year and that no new formal responses from small suppliers and larger consumers were submitted, although these groups have indicated at industry meetings that this information is very important.
241. Of the six formal responses, there were no proposals to extend any incentive to include other published data items or reports. No specific barriers to implementation of a multiple year scheme were identified in the responses (other than where organisations re-stated their belief that an incentive was no longer required).

8.4 Performance under the Current Incentive

242. Availability and timeliness performance for incentivised information on the National Grid website remains very high.

	Performance
Availability	99.7%
Timeliness	90.3%

Figure 8.2 – Average Performance under the Data Publication Incentive from April to September 2009 (inclusive)

243. This level of performance is underpinned by both the system developments that have been carried out in this area over the past few years, and the level of operational system support that is provided to support incentive performance. This support including external monitoring and alarming of the website, enhanced 24/7 service level agreements with suppliers and support staff, day staff monitoring and helpline support, management focus through internal reporting and performance indicators etc. This level of support is in many ways commensurate with a system managed as an item of Critical National Infrastructure rather than just a web reporting tool.

8.5 Initial Proposals

244. All feedback National Grid has received has indicated that the availability and timeliness of publication of key data items is valued and should be continued. We continue to believe that the Data Publication Incentive provides a small but appropriate incentive to maintain these levels of performance. National Grid therefore proposes that the existing incentive should be retained.
245. Should the incentive be removed, we believe that the operational investment that is carried out specifically to support incentive performance, such as using an external web monitoring service to monitor site performance and provide alarms directly to our application support teams when issues occur, could no longer be justified and there could therefore be a risk that the current extremely high performance levels may not be maintained.
246. As the only identified barriers to a multiple year incentive relate to whether there should be an incentive at all, should an incentive from April 2010 be implemented we believe this should be put in place for a two year period.
247. In last year's Final Proposals document, Ofgem highlighted the need for additional views on data publication from small suppliers and large consumers. The interest in data publication that these parties have shown in industry meetings has not been reflected in the formal responses received to date. Given the importance that Ofgem places on these views, we would encourage all interested parties to respond to this consultation, or to contact us to discuss the best way of ensuring that all views are captured.

Question 8.1	Do you agree that the current Data Publication Incentive should be set for a further two years?
--------------	---

Section 9 Related Issues

This section provides an update on two areas related to SO Incentives, system flexibility and the review of the Calorific Value (CV) Shrinkage capping rules.

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.

9.1 System Flexibility

248. The evolution in supply and demand behaviour driven by a number of factors such as decline of traditional UKCS supplies, increase in LNG and interconnector imports, increase in levels and types of UK storage, knock on impacts of renewable developments on the electricity system, etc., will cause greater system volatility and hence create greater strains on system operation with potentially increased costs to manage system balance and constraint issues.
249. The magnitude and materiality of these developments is uncertain, however, as a prudent operator National Grid is keen to investigate the potential impact of these changes before they occur. In order to understand the potential impacts, we need to consider what data / information should be analysed, what timescales should be monitored for trends, and what trends would be a cause for concern. To that end, an industry workshop was held on 24th June 2009 and National Grid has since been soliciting further feedback from industry participants on the issues and compiling datasets on the identified areas. Summaries of the various discussions with industry participants have been provided to the Transmission Workstream.
250. Ofgem intends to publish a consultation on system flexibility in November 2009, in which industry views are likely to be sought on:
- The adequacy of National Grid's current system management tools in light of the potential developments highlighted above;
 - The merits of additional information release by National Grid;
 - Longer term issues and potential consequences for system flexibility; and
 - The appropriateness of additional SO incentives in this area.
251. National Grid intends to hold a second industry workshop to coincide with Ofgem's consultation.

9.2 CV Shrinkage

252. 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) – the Regulations.
253. This legislation is designed to protect consumers against being materially overcharged should there be a large variance in the CV delivered to different offtakes within an LDZ, and can result in some consumers not being billed for the full amount of energy delivered to them, with the difference being allocated to NTS Shrinkage.
254. Historically, UKCS production has been high and stable, which has meant that CV Shrinkage has been at very low levels. However, as the UK moves towards a greater diversity of supplies, this may mean a greater variance in CV between different sources of gas imported from different countries. Furthermore, the development of biogas and coal bed methane projects in the UK is likely to introduce low volume, and potentially lower CV gas into the system which may lead to a greater propensity for CV capping effects under the current regime.
255. 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.
256. In setting the Shrinkage Incentive, Ofgem asked National Grid and the industry to review the current capping rules that led to the occurrence of CV Shrinkage.
257. 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 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.

258. Following the establishment of terms of reference, the Review Group held its first meeting on 26 June 2009, 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 commercially significant impact upon the costs of CV Shrinkage associated with the flow weighted average calculation. The Review Group has also discovered that shippers face an exposure to variations in daily CV when billing NDM consumers.

259. Subsequent meetings have focused on potential options available to manage the admission of low CV supply sources into the networks, notably biomethane. The options generated, which are all still in the process of evaluation by the Review Group, are as follows:

- Allow the injection of low CV supplies without enrichment;
- Transporter to set a target CV within 1MJ/m³ of the flow weighted average CV for the charging area which the producer would be required to enrich to meet at the point of entry;
- Blending;
- Smaller charging areas; and
- Alter the capping methodology.

260. It is anticipated that the review will conclude prior to 1 April 2010.

261. Further information will be available on the Joint Office of Gas Transporters website in due course at www.gasgovernance.co.uk.

9.3 General Feedback

262. 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.

263. We would also like to invite views on whether there are any other areas where introduction of an incentive may be of benefit.

Question 9.1	Would you like to make any other comments on SO Incentives that have not been captured through the other questions in this document?
Question 9.2	Are there other areas where you believe there would be benefit from introducing a new SO Incentive?

Section 10

Summary of questions

This section provides a summary of the questions contained within this document. Responses to these questions are requested by 11 December 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 11 of this document.

Question 2.1	Do you agree with National Grid's conclusion that no changes to the level of scheme bundling/unbundling are required?
Question 3.1	Do you believe that the Residual Balancing Incentive should be retained in its current format?
Question 3.2	If you believe one of the alternatives should be adopted, which one would you support and would you propose any changes to the proposed scheme parameters?
Question 3.3	Would you propose any other changes (including the PPM) to any aspect of the Residual Balancing Incentive?
Question 3.4	Would you support the setting of the incentive for two years?
Question 4.1	Should the D-1 13:00 Demand Forecasting Incentive be set on an annual, seasonal or daily basis?
Question 4.2	On what basis should the performance target for any Demand Forecasting Incentive be set? What balance between continuous improvement and the increased external driven volatility should be struck?
Question 4.3	Would you support the introduction of an incentive around the D-5 to D-2 demand forecasts?
Question 4.4	Do you have any comments on the D-5 to D-2 proposed incentive scheme design and parameters, including the target and the value of the scheme?
Question 4.5	Are there particular periods of the year where accurate demand forecasts are of increased value? Is it appropriate that any seasonal or daily incentive should have equal value for each season (or day)?
Question 4.6	Are there any barriers to setting two year incentives around the D-1 or D-5 to D-2 demand forecasts?
Question 4.7	Should any D-5 to D-2 Demand Forecasting Incentive scheme operate on a simple average of the forecast errors, or should a weighted average of the forecast errors be used?
Question 4.8	Given the many issues highlighted, are you comfortable with the approach National Grid is proposing for the NDM forecast?
Question 5.1	Do you support National Grid's proposal that OM availability costs should operate on cost pass through basis for a further year? If so should utilisation costs also be passed through or subject to a small incentive?
Question 5.2	If OM was to be incentivised what structure of incentive should be put in place (i.e. combined basis or separate availability and utilisation schemes)?
Question 5.3	Should a mechanism for funding the financing costs (explained in Section 5.6) be introduced? Should any funding be provided through the incentive or a change to the UNC?

Question 6.1	Do you support the proposal for recalculating the Environmental Incentive target for 2009/10 to ensure consistency with the performance measure?
Question 6.2	Do you support the proposed approach, summarised below, to setting the Environmental Incentive? <ul style="list-style-type: none"> • using the weighted historic data to set the volume target; • using DECC's new non traded carbon price; • retaining the $\pm 5\%$ deadband; and no requirement for caps and collars.
Question 6.3	Are there any barriers to setting the Environmental Incentive for a two year period?
Question 6.4	Do you agree with National Grid's view that no new Environmental Incentives should be introduced from April 2010?
Question 7.1	Do you support National Grid's view that no Maintenance Incentive should be introduced from April 2010? If not, please explain what incentive you believe should be introduced and how the scheme parameters should be set.
Question 7.2	Do you have any suggestions of how the bilateral information provided to parties affected by maintenance could be improved?
Question 7.3	Do you support our proposal to publish information on the maintenance process on a quarterly basis? Are there other data items which you believe it would be helpful to capture?
Question 7.4	Do you have any other suggestions of how the maintenance processes could be improved?
Question 8.1	Do you agree that the current Data Publication Incentive should be set for a further two years?
Question 9.1	Would you like to make any other comments on SO Incentives that have not been captured through the other questions in this document?
Question 9.2	Are there other areas where you believe there would be benefit from introducing a new SO Incentive?

Section 11 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

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

Electricity

Malcolm Arthur Tel: 01926 654909 malcolm.arthur@uk.ngrid.com

General enquiries: SOincentives@uk.ngrid.com