

# Quarterly Gas System Operator Incentive Report

Q3 2013-2014 (October 2013 to December 2013)

## Introduction

### 1.1 Purpose

The purpose of this Gas System Operator Incentive Report is to provide information in respect of the performance measures that National Grid Gas is incentivised against during the relevant quarter in operating the gas transmission system

### 1.2 Nature of the Information Contained in this Report

This publication contains performance measure information associated with the Gas System Operator Incentives, and is based on the latest information at the time of publication. As future quarters are published, the information on this report will be updated to reflect the latest information available at that time. Changes to preliminary data that occur after the publication of the relevant quarter's report will thus be visible in the graphs and tables of future reports.

### 1.3 Structure of the Report

This report contains a summary of the below incentives on the first sheet, and then covers the individual incentives in more detail:

Constraint Management  
Shrinkage  
Residual Balancing  
Demand Forecasting - Day Ahead and D-2 to D-5  
Maintenance  
Greenhouse Gas Emissions from Compressors

### [1.4 Supporting Information](#)

The above link downloads a PDF document that summarises the Gas System Operator Incentive Schemes applicable from April 2013

### [1.5 Consultation Documents and Responses](#)

The above link opens a page on the National Grid website that contains any current System Operator Incentive Consultation Documents and any responses that have been received from interested parties.

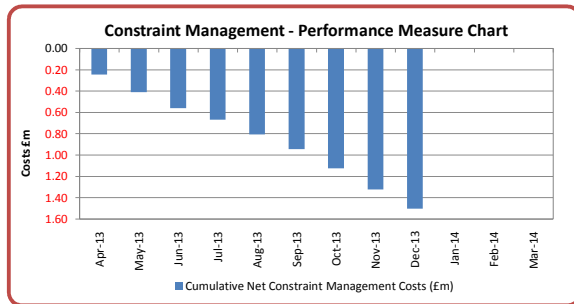
### [1.6 Ofgem's Final Proposals](#)

The above link opens the Ofgem Final proposals document for all Gas System Operator Incentives applicable from April 2013

# Quarterly Gas System Operator Incentive Report

Q3 2013-2014 (October 2013 to December 2013)

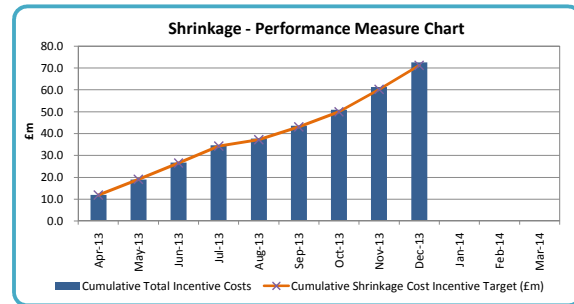
## Constraint Management



### Commentary

The chart shows the monthly cumulative Constraint Management operational performance measure. The end of Q3 performance for 2013/14 is a revenue of £1,500,700.

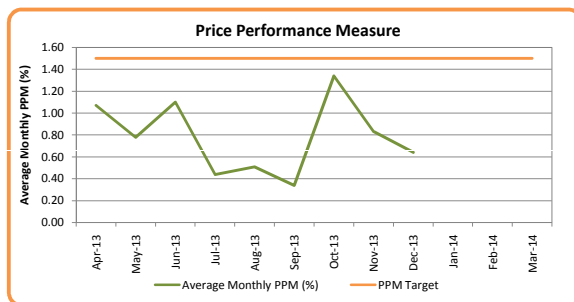
## Shrinkage



### Commentary

The end of December position NTS Shrinkage incentive costs are £72.6m compared to a target of £71.2m

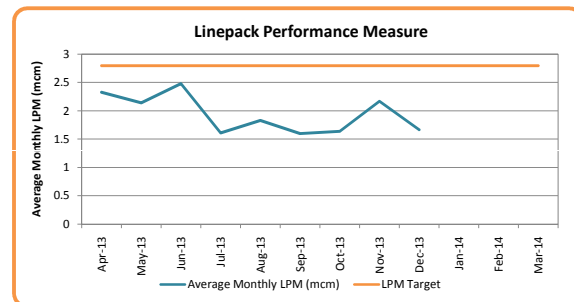
## Residual Balancing - Price



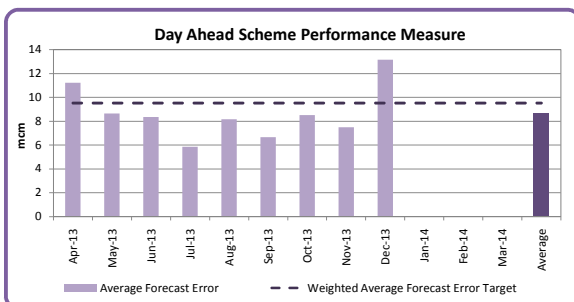
### Commentary

Over Q3 2013/14, the average price performance measure (0.9%) and linepack measure (1.8mcm) were both better than the respective target profit of £283k.

## Residual Balancing - Linepack



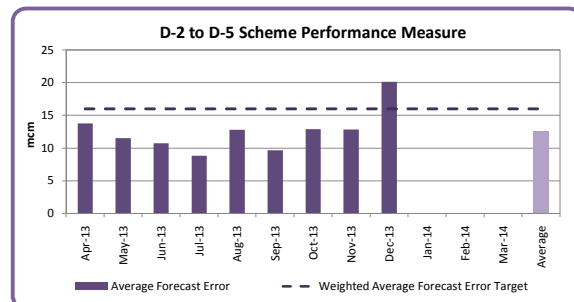
## Demand Forecasting - Day Ahead



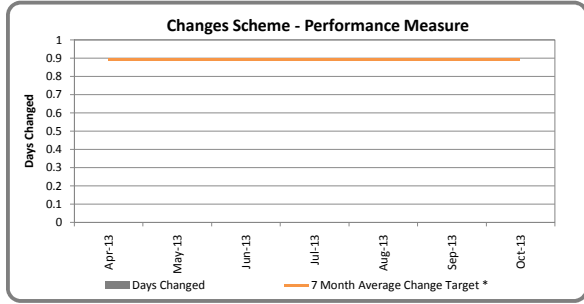
### Commentary

The weighted average forecast error for both incentives remained below their respective targets in October and November. A rise in forecasting error for both incentives was observed in December. A significant proportion of this error can be attributed to the Christmas period, with considerable uncertainty over demand. Changeable weather patterns during December also impacted demand forecasting.

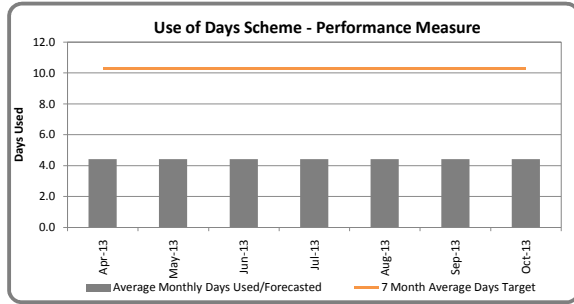
## Demand Forecasting - D2 to D5



Maintenance - Changes to Maintenance Plan



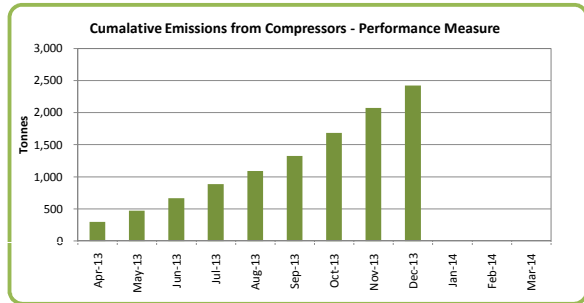
Maintenance - Days of Maintenance Used



Commentary

Maintenance day changes are currently zero against a full year target of 6.23. Our full year forecast is £0.31m profit as a result of improved data flow and planning processes. Maintenance days called to date are 31 against a target of 72.3 giving a forecast profit for days used of £0.83m. This is due to the improved use of bundling with customer outages and the re-evaluation of maintenance practices.

Greenhouse Gas Emissions from Compressors



Commentary

Venting volumes rose in winter due to increased compressor usage to transport gas to meet higher demands. In Q3 2013/14, vented volumes totalled approximately 1100 tonnes.

# Constraint Management

Q3 2013-2014 (October 2013 to December 2013)

## Scheme Purpose

The purpose of this scheme is to incentivise an efficient overall cost of System Operator Constraint Management actions through efficient system operation and the optimisation of strategies. National Grid Gas is obliged to release obligated levels of capacity significantly in excess of peak demand at both entry and exit points on the network. In the instances where we believe we cannot accommodate Shipper's flow requirements associated with booked capacity, we undertake constraint management actions.

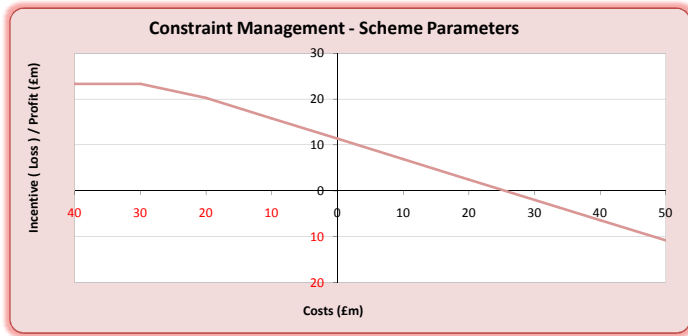
## Scheme Description

Performance Measure:- Entry and Exit operational constraint management cost.

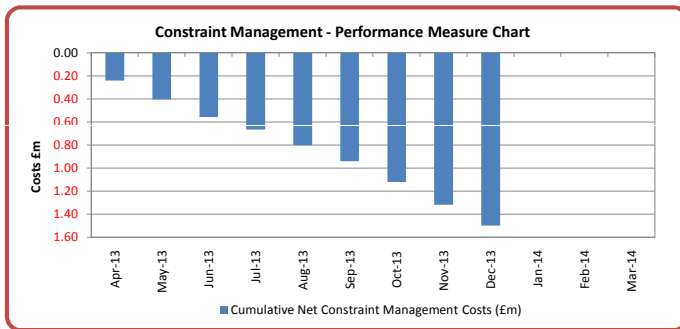
From 01 April 2013, National Grid Gas is subject to a new Constraint Management Incentive which has been set for 8 years and encompasses both Entry and Exit Capacity Constraint Management actions.

Incentive performance is driven by the difference between the net constraint management costs over a year and a target value for such costs.

For 2013/14 the target cost comprises a pre-inflation cost of £22m (in 2009/10 prices) for entry and exit operational constraint management, with National Grid Gas accruing 44.36% of the revenue or loss (the sharing factor).



## Performance



## Supporting Data

	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
Cumulative Net Constraint Management Costs (£m)	-0.24	-0.41	-0.56	-0.67	-0.80	-0.94	-1.12	-1.32	-1.50			

## Commentary

The chart shows the monthly cumulative Constraint Management operational performance measure. The end of Q3 performance for 2013/14 is a revenue of £1,500,700.

# Shrinkage

Q3 2013-2014 (October 2013 to December 2013)

## Scheme Purpose

The purpose of this scheme is to incentivise an efficient overall cost of shrinkage through efficient system operation and energy procurement.  
 NTS Shrinkage covers the gas and electrical energy which is used in operating NTS compressors, and the gas that cannot be accounted for and billed in the measurement and allocation process.

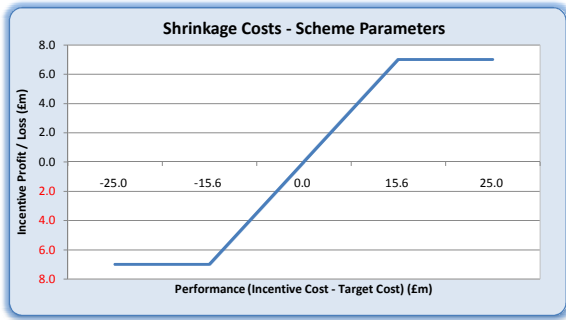
## Scheme Description

Performance Measure - Shrinkage Costs (£m).

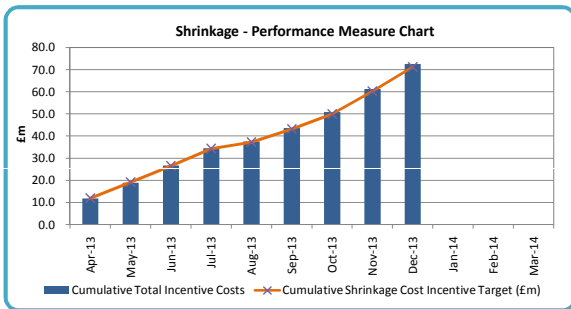
The form of the Shrinkage Incentive is a bundled cost minimisation incentive across all components of shrinkage, with a target principally derived from an energy procurement cost benchmark.

This "Energy Procurement Target" is derived from a volume forecast and variance. This is multiplied by gas and electricity reference prices to derive a cost target.

This incentive has been set for 8 years beginning on 01 April 2013. If total spend against the incentive is below the target, National Grid Gas receives a payment equivalent to 45% of the underspend, with a cap of £7m. Conversely, if total spend against the incentive is in excess of the target, National Grid Gas incurs a penalty of 45% of the overspend, collared at £7m.

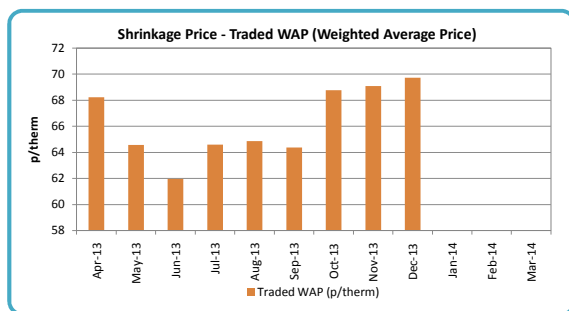
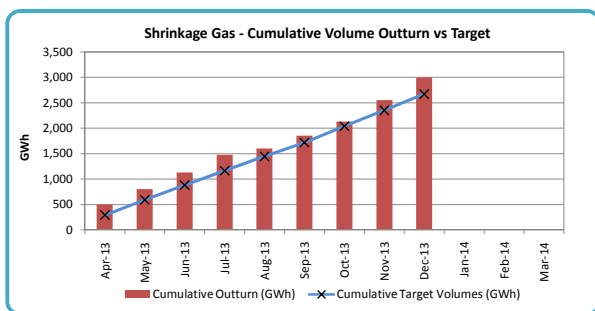


## Performance



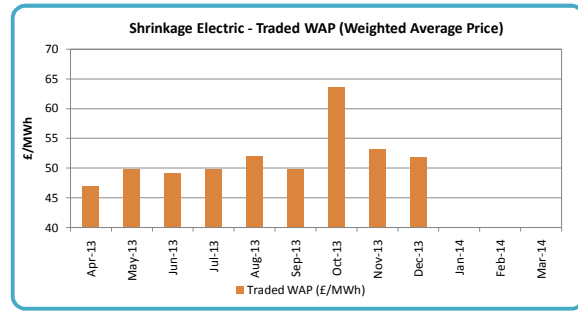
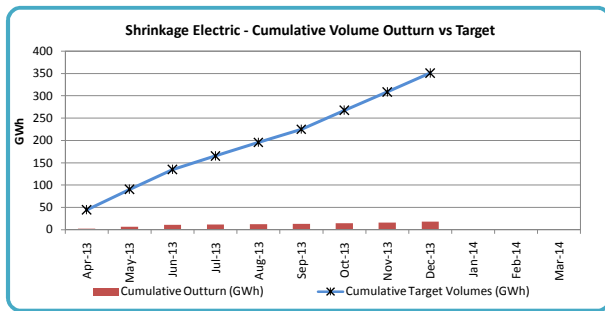
## Supporting Data (Overall - Gas and Elec)

	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
Total Incentive Costs (£m)	11.8	7.2	7.7	7.9	3.1	6.0	7.3	10.5	11.2			
Cumulative Total Incentive Costs (£m)	11.8	19.0	26.7	34.6	37.7	43.7	50.9	61.4	72.6			
Shrinkage Cost Incentive Target (£m)	11.9	7.2	7.4	7.8	3.0	5.8	6.8	10.3	11.0			
Cumulative Shrinkage Cost Incentive Target (£m)	11.9	19.1	26.5	34.3	37.3	43.1	49.9	60.2	71.2			



## Supporting Data (Gas)

	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
Outturn - Shrinkage Gas (GWh)	497	303	332	343	125	255	275	423	449			
Cumulative Outturn (GWh)	497	800	1132	1475	1600	1856	2131	2554	3003			
Incentivised Cost of Gas (£m)	9.2	7.6	5.4	8.0	3.1	3.5	7.7	9.9	9.6			
Target Volumes (GWh)	290	300	290	282	282	273	322	312	322			
Cumulative Target	290	590	880	1162	1444	1717	2039	2351	2673			



### Supporting Data (Electricity)

	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
Outturn - Shrinkage Electricity (GWh)	2	5	4	1	1	1	2	1	2			
Cumulative Outturn (GWh)	2	7	10	11	12	13	15	16	18			
Incentivised Cost of Electricity (£m)	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.3			
Target Volumes (GWh)	45	46	45	30.3	30.3	29.3	42.5	41.1	42.5			
Cumulative Target Volumes (GWh)	45	90	135	165	196	225	267	309	351			
Traded WAP (£/MWh)	47.0	49.8	49.1	49.8	52.0	49.8	63.6	53.1	51.8			

### Commentary

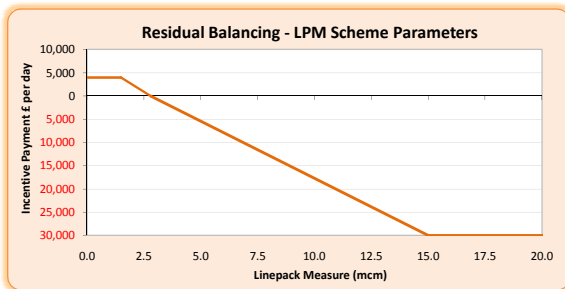
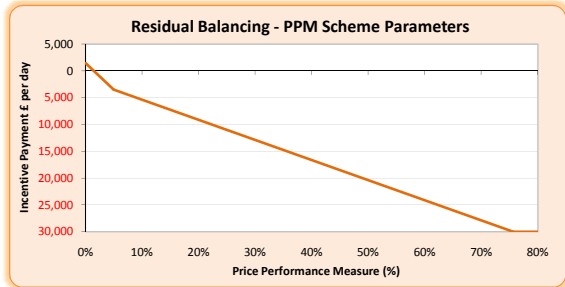
The end of December position NTS Shrinkage incentive costs are £72.6m compared to a target of £71.2m

# Residual Balancing

Q3 2013-2014 (October 2013 to December 2013)

## Scheme Purpose

The purpose of this scheme is to incentivise the daily balancing of supply and demand whilst minimising the impact of any actions on market prices. The incentive is split into 2 elements, the Price Performance Measure (PPM) and the Linepack Performance Measure (LPM).



## Scheme Description

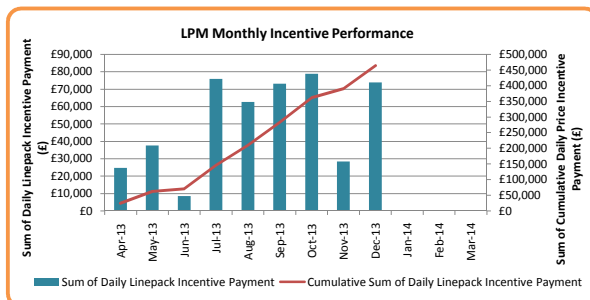
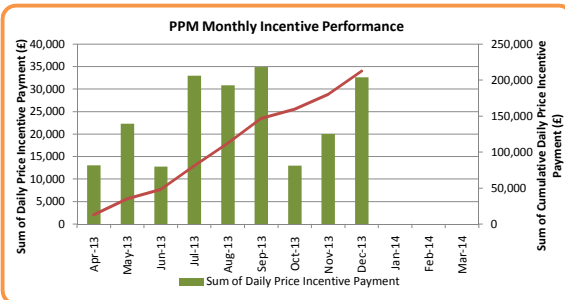
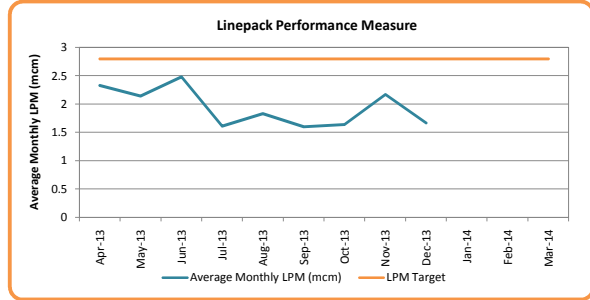
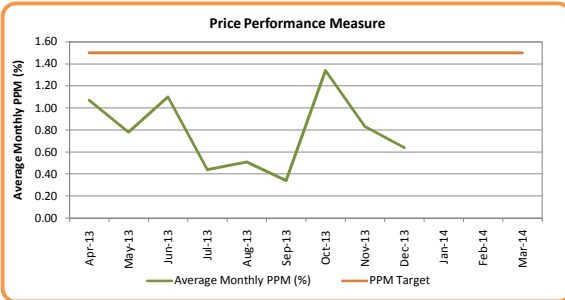
Performance Measure:- for PPM, the difference between any National Grid Gas Trades, divided by SAP (System Average Price). For LPM, the absolute difference between opening and closing NTS Linepack over a Gas Day.

The Price Element (PPM) incentivises National Grid Gas to execute any Residual Balancing trades at prices that are in a small range compared to the System Average Price (SAP) for the day. The PPM is defined as the difference between the highest and lowest prices at which National Grid Gas trades, divided by SAP. The target for 2013/14 is a price spread of 1.5% of SAP. If the PPM is below 1.5% on a given day, then National Grid Gas receives an incentive payment up to a maximum of £1,500. Conversely, if the PPM is above 1.5%, then National Grid Gas incurs a penalty up to a maximum of £30,000.

The Linepack Element (LPM) incentivises National Grid Gas to minimise any changes between opening and closing NTS linepack over a gas day (i.e. to achieve a balance between the supply and demand on the Gas Day). This is intended to ensure that any system imbalances are resolved on the relevant day, such that the costs of resolving any imbalances are targeted to those responsible for the imbalance. The target for 2013/14 is a linepack change of 2.8 mcm. If the LPM is below 2.8 mcm on a given gas day, then National Grid Gas receives an incentive payment of up to £4,000. Conversely if the LPM is above 2.8 mcm then National Grid Gas incurs a penalty of up to £30,000.

The Sum of all the daily payments for linepack and price performance under the Residual Balancing incentive are annually capped at £2m and collared at -£3.5m.

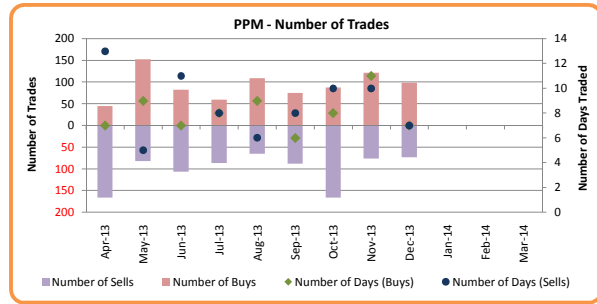
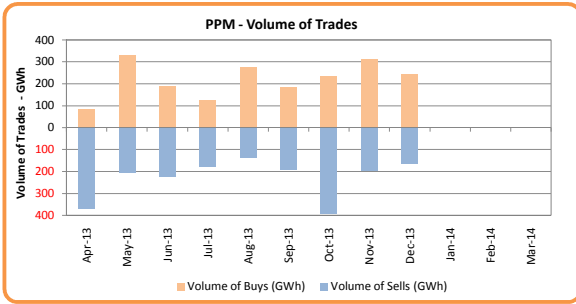
## Performance



## Supporting Data

	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
Price	Sum of Daily Price Incentive Payment	£13,088	£22,310	£12,770	£32,979	£30,828	£34,912	£12,967	£20,060	£32,634		
	Cumulative Sum of Daily Price Incentive Payment	£13,088	£35,398	£48,168	£81,147	£111,975	£146,887	£159,854	£179,914	£212,548		
	Average Monthly PPM (%)	1.07	0.78	1.10	0.44	0.51	0.34	1.34	0.83	0.64		
	Min PPM (%)	0	0	0	0	0	0	0	0	0		
	Max PPM (%)	5.16	3.79	5.68	2.32	2.71	1.71	14.4	3.09	2.01		
	PPM Target (%)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Linepack	Sum of Daily Linepack Incentive Payment	£24,801	£37,651	£8,440	£75,943	£62,736	£73,301	£78,928	£28,384	£73,997		
	Cumulative Sum of Daily Linepack Incentive Payment	£24,801	£62,452	£70,892	£146,835	£209,571	£282,872	£361,800	£390,184	£464,181		
	Average Monthly LPM (mcm)	2.33	2.14	2.48	1.61	1.83	1.6	1.64	2.17	1.67		
	Min LPM (mcm)	0.21	0.02	0.00	0	0.02	0.01	0.10	0.11	0.15		

## Trades



	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
Volume of Buys (GWh)	84.9	329.6	188.8	127.7	275.8	184.0	237.0	311.0	246.0			
Volume of Sells (GWh)	-370.0	-207.3	-227.4	-177.7	-140.0	-194.0	-392.0	-198.0	-165.0			
Number of Buys	45	153	83	60	109	75	88	122	99			
Number of Sells	-166	-82	-106	-86	-65	-88	-166	-76	-73			
Number of Days (Buys)	7	9	7	8	9	6	8	11	7			
Number of Days (Sells)	13	5	11	8	6	8	10	10	7			
Sell Min Price (p/therm)	63.5	62	38	63.4	58	63.01	47.2	65	63.75			
Sell Max Price (p/therm)	81.45	67.75	64.25	65.2	65.55	67.05	65.1	71.35	70.6			
Buy Min Price (p/therm)	65.50	64.60	42.60	65.4	64	64.25	64	66	68.75			
Buy Max Price (p/therm)	82.50	70.50	65.00	67.8	68.25	68	69.25	72	73			

## Commentary

Over Q3 2013/14, the average price performance measure (0.9%) and linepack measure (1.8mcm) were both better than the respective target profit of £283k.

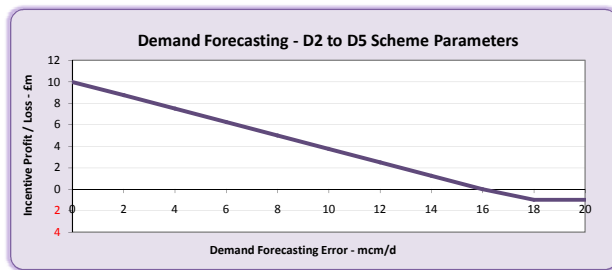
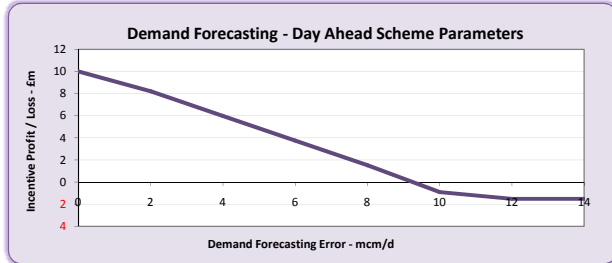


# Demand Forecasting

Q3 2013-2014 (October 2013 to December 2013)

## Scheme Purpose

The purpose of this scheme is to incentivise improvements in the accuracy of the Demand Forecasts issued by National Grid Gas. There are now 2 separate incentives under Demand Forecasting, with an additional scheme measuring the accuracy of the forecasts issued at 2, 3, 4 and 5 days ahead supplementing the existing day ahead scheme.



## Scheme Description

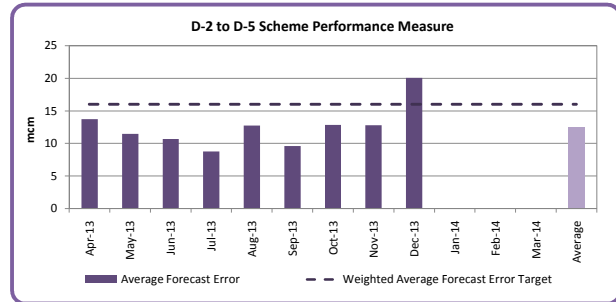
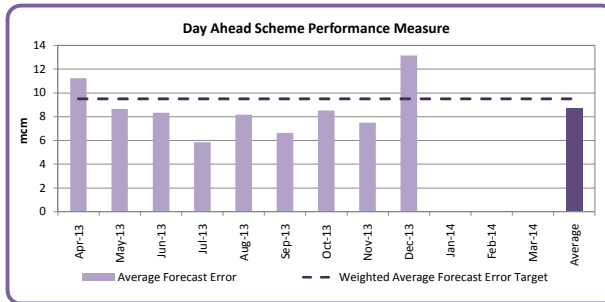
Performance Measure:- Demand Forecasting Error (mcm/d)

In respect of the Day Ahead scheme, in 2013/14, National Grid Gas has an incentive target of an annual average absolute forecast error of 8.5 mcm with an adjustment for the level of short cycle storage injection capability (to take account of the unpredictability of demand from short cycle storage sites, the target is adjusted in proportion to the additional injection capability at these sites). This adjustment revises the day ahead target absolute error of 8.5 mcm up an additional 1 mcm, therefore the maximum Day Ahead target absolute demand forecasting error for 2013/14 is 9.5 mcm. The incentive payment is capped at £10m and collared at -£1.5m.

In respect of the D-2 to D-5 scheme, in 2013/14 National Grid Gas has an incentive target of an annual average absolute forecast error of 16 mcm. There is no adjustment for the level of short cycle storage injection capability for this incentive. The incentive payment is capped at £10m, and collared at -£1m.

The Day Ahead incentive has been set for 8 years, commencing 01 April 2013, and the D-2 to D-5 scheme has been set for 2 years commencing 01 April 2013.

## Performance



## Supporting Data

		Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Average
Day Ahead Scheme	Average Forecast Error	11.22	8.64	8.33	5.86	8.16	6.64	8.51	7.49	13.13				8.66
	Weighted Average Forecast Error Target	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
D-2 to D-5 Scheme	Average Forecast Error	13.75	11.48	10.72	8.81	12.78	9.64	12.86	12.82	20.09				12.55
	Weighted Average Forecast Error Target	16	16	16	16	16	16	16	16	16	16	16	16	16

## Commentary

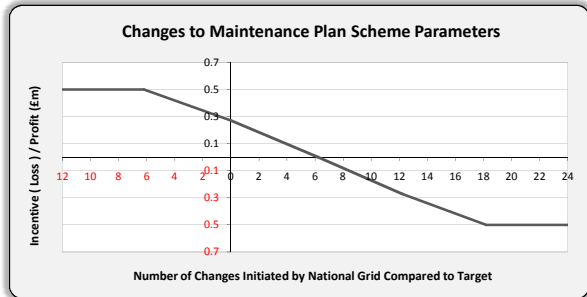
The weighted average forecast error for both incentives remained below their respective targets in October and November. A rise in forecasting error for both incentives was observed in December. A significant proportion of this error can be attributed to the Christmas period, with considerable uncertainty over demand. Changeable weather patterns during December also impacted demand forecasting.

# Maintenance

Q3 2013-2014 (October 2013 to December 2013)

## Scheme Purpose

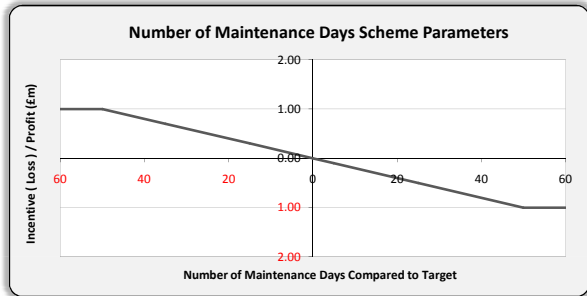
The purpose of this scheme is to incentivise the efficient planning and execution of network maintenance impacting customers at direct exit connections from the NTS. To enable customers to make any necessary arrangements, National Grid Gas is required to provide advance notice of its intention to call maintenance days in the form of a maintenance plan. This incentive is made up of 2 schemes incentivising the minimisation of changes initiated by National Grid Gas to the plan and minimisation of the use of maintenance days to perform the required maintenance.



## Scheme Description

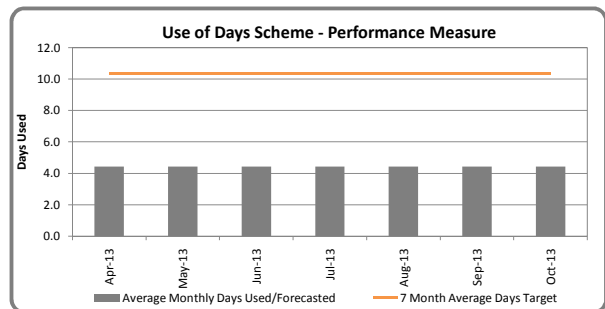
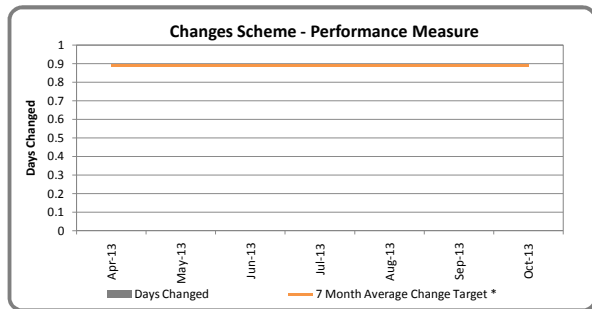
Performance Measure - Number of Maintenance Days and Changes Initiated by National Grid Gas to the Maintenance Plan.

In respect of the Changes Scheme, in 2013/14 the target number of Maintenance Days subject to change initiated by National Grid Gas is equal to 14.5% of the Maintenance Days workload throughout the year. If the actual number of days changed is equal to the target, then incentive revenue is zero. If the actual number of days changed is less than the target then a payment of £50,000 per change below target is accrued up to a scheme cap of £0.5m. If the actual number of days changed exceeds the target then a penalty of £50,000 per change in excess of the target is accrued to a scheme collar of -£0.5m.



The Use of Days scheme incentivises National Grid Gas to minimise the number of Maintenance Days it uses to undertake in-line inspections and valve operations. In 2013/14 National Grid Gas has an annual incentive target (in days) comprised of the sum of benchmark durations. If the actual number of Maintenance Days used for these activities is equal to the target, then incentive revenue is zero. If the actual number of Maintenance Days used is less than the target then National Grid Gas receives a payment of £20,000 per day below the target up to a scheme cap of £1m. If the actual number of Maintenance Days used exceeds the target then National Grid Gas accrues a penalty of £20,000 per day in excess of the target up to a scheme collar of -£1m.

## Performance



## Supporting Data

		Maintenance Period												
		Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Total
Changes Scheme	Days Changed	0	0	0	0	0	0	0						0
	7 Month Average Change Target *	0.9	0.9	0.9	0.9	0.9	0.9	0.9						6.2
Use of Days Scheme	Average Monthly Days Used/Forecasted	4.4	4.4	4.4	4.4	4.4	4.4	4.4						31
	7 Month Average Days Target	10.3	10.3	10.3	10.3	10.3	10.3	10.3						72.3

\* Target number of days changed is 14.5% of the total maintenance Days in the plan.

## Commentary

Maintenance day changes are currently zero against a full year target of 6.23. Our full year forecast is £0.31m profit as a result of improved data flow and planning processes. Maintenance days called to date are 31 against a target of 72.3 giving a forecast profit for days used of £0.83m. This is due to the improved use of bundling with customer outages and the re-evaluation of maintenance practices.

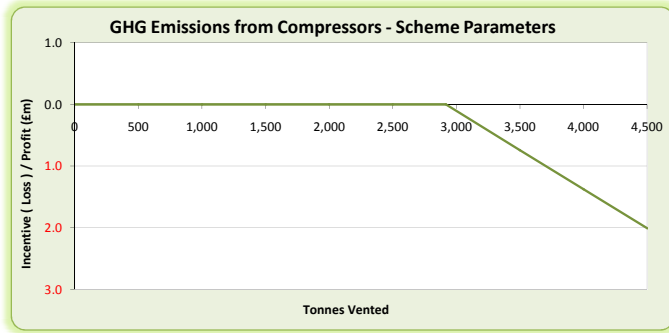
# Greenhouse Gas Emissions from Compressors

Q3 2013-2014 (October 2013 to December 2013)

## Scheme Purpose

The purpose of this scheme is to encourage National Grid Gas to consider the environment when venting from NTS Compressors.

Compressors are utilised to increase pressures in parts of the NTS and to move gas from the sources of supply to areas of demand. The need to operate an individual compressor on any given day will depend on a number of circumstances including the sources of demand and supply, the prevailing network conditions and the need to accommodate maintenance and construction plans.



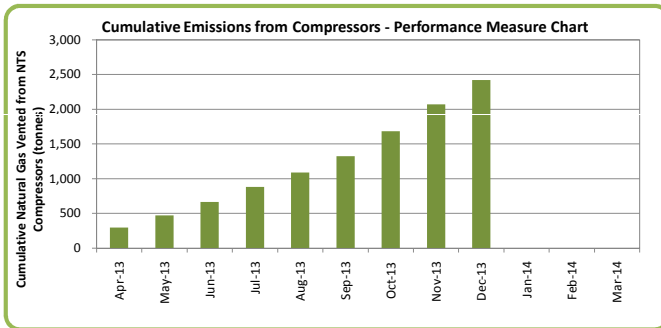
## Scheme Description

Performance measure - tonnes of Greenhouse Gases vented from NTS Compressors.

This scheme incentivises National Grid Gas to make the trade-off between choosing to depressurise compressor units (venting the gas within them) or to keep units on standby - which incurs costs associated with ancillary electrical equipment such as vent fans or oil pumps.

This incentive has been set for 3 years commencing from 01 April 2013. For every tonne vented above the target (2,917 tonnes of Greenhouse Gas Vented), National Grid Gas is subject to a penalty of approximately £1,302, equivalent to £100,000 for every 77 tonnes vented above the target. As a "downside only" scheme, National Grid Gas does not receive any payment for target outperformance.

## Performance



## Supporting Data

	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
Natural Gas Vented from NTS Compressors	298.45	174.96	193.84	217.5	207.38	231.53	359.62	388.15	348.36			
Cumulative Natural Gas Vented from NTS Compressors	298.45	473.41	667.25	884.75	1092.13	1323.66	1683.28	2071.43	2419.79			

## Commentary

Venting volumes rose in winter due to increased compressor usage to transport gas to meet higher demands. In Q3 2013/14, vented volumes totalled approximately 1100 tonnes.