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SO Incentives from 2013: Gas SO incentives

Ofgem stakeholder workshop,
14 September 2012

Agenda

- Gas System Operator incentives: Initial proposals
  - Output incentives
  - Cost incentives
  - Reputational incentives
- Q&A
- Gas System Operator incentives: National Grid's views
- Q&A
- Summary and next steps
- Lunch

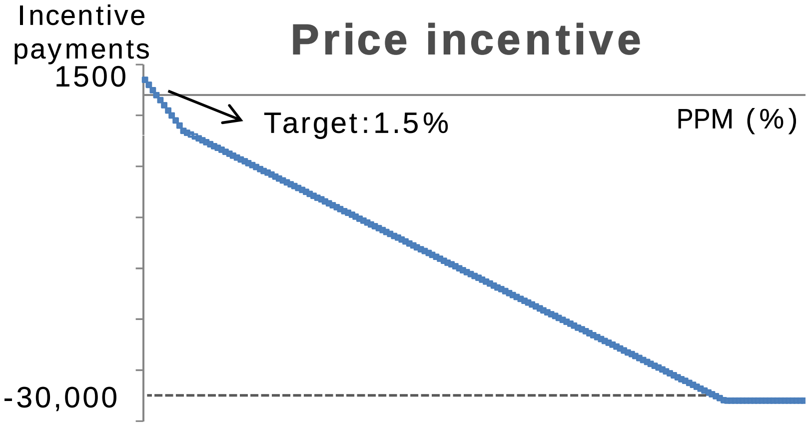
Gas SO incentives – Our Initial Proposals

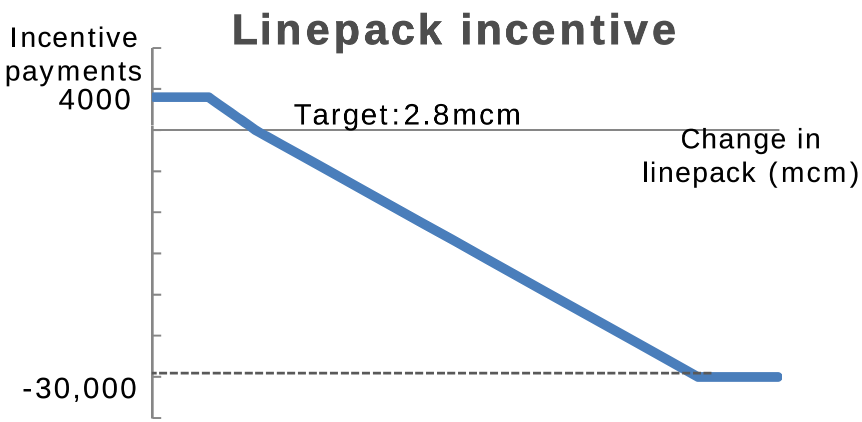
Output incentives	•Residual balancing •Greenhouse gas emissions •Demand forecasting D-1 •New incentives: • Demand forecasting D-2 to D-5 • Maintenance
Cost incentive	•Shrinkage
Reputational incentives	•Operating margins •Information provision •Unaccounted for Gas

Residual balancing

- It is not a priority to introduce a cost minimisation incentive at the current time.
  - Stakeholders consider that the current framework remains fit for purpose.
  - The Authority may reopen the scheme (not within its first 4 years) should costs increase significantly.

- <u>Our proposals</u> are for the current scheme and all of its associated parameters to be put in place for 8 years, thus providing predictability





- PPM: Maximum daily payment when NGG does not enter the market
- Annual cap: £2m, annual floor: -£3.5m.

Residual balancing

- Fixed targets incentivise NGG to keep improving its performance.
  - Will reopen scheme if within day volatility increases to the point that SO balancing role has materially changed

Incentive year	Linepack target	Linepack performance	Price target	Price performance	Incentive revenues
2009/10	2.8 mcm	1.97 mcm	5.0%	2.9%	£1.63m
2010/11	2.8 mcm	2.05 mcm	2.5%	1.6%	£0.95m
2011/12	2.8 mcm	2.46 mcm	1.5%	1.6%	£0.25m

Do you agree that by fixing the targets for 8 years will provide NGG with an incentive to continuously improve its performance in this area?

Greenhouse gas emissions

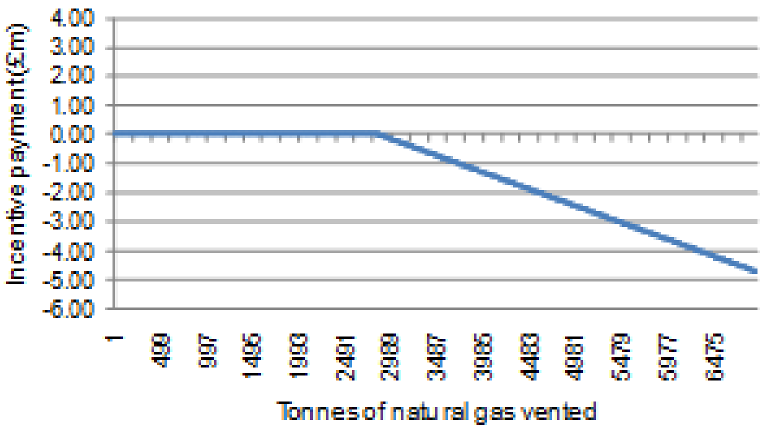
- Our proposal is for an incentive focused on the long term.
  - The incentive should encourage NGG to reduce its levels of venting each year, taking into account the environmental impact of methane emissions (21 times higher than CO_2).

- Threshold:
  - Short term based on compressor emissions only (until March 2015, at the latest): current target minus 5% per year efficiency rate.
  - Thereafter annual reduction rate of 5%.
  - Threshold based upon venting from compressors and potentially expanded to include other assets, as identified following the results from the Scheme of Work
  - Once we receive information from the Scheme of Work, we may consider revising the reduction rate.

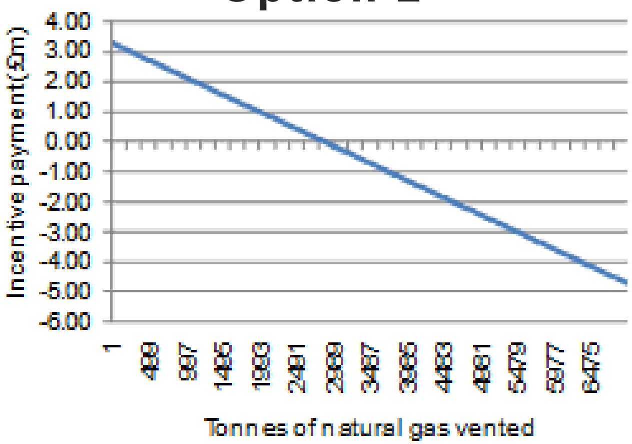
Greenhouse gas emissions

- Two options:
  - Option 1 (minded to position): Downside only scheme
  - Option 2: Reward for venting below the target, penalty for venting above the target. No deadband around the target
- In both options, emissions are valued at DECC’s non-traded price of carbon

Option 1



Option 2



Is your preference for Option 1 (penalty only) or Option 2 (upside and downside payment) and why?

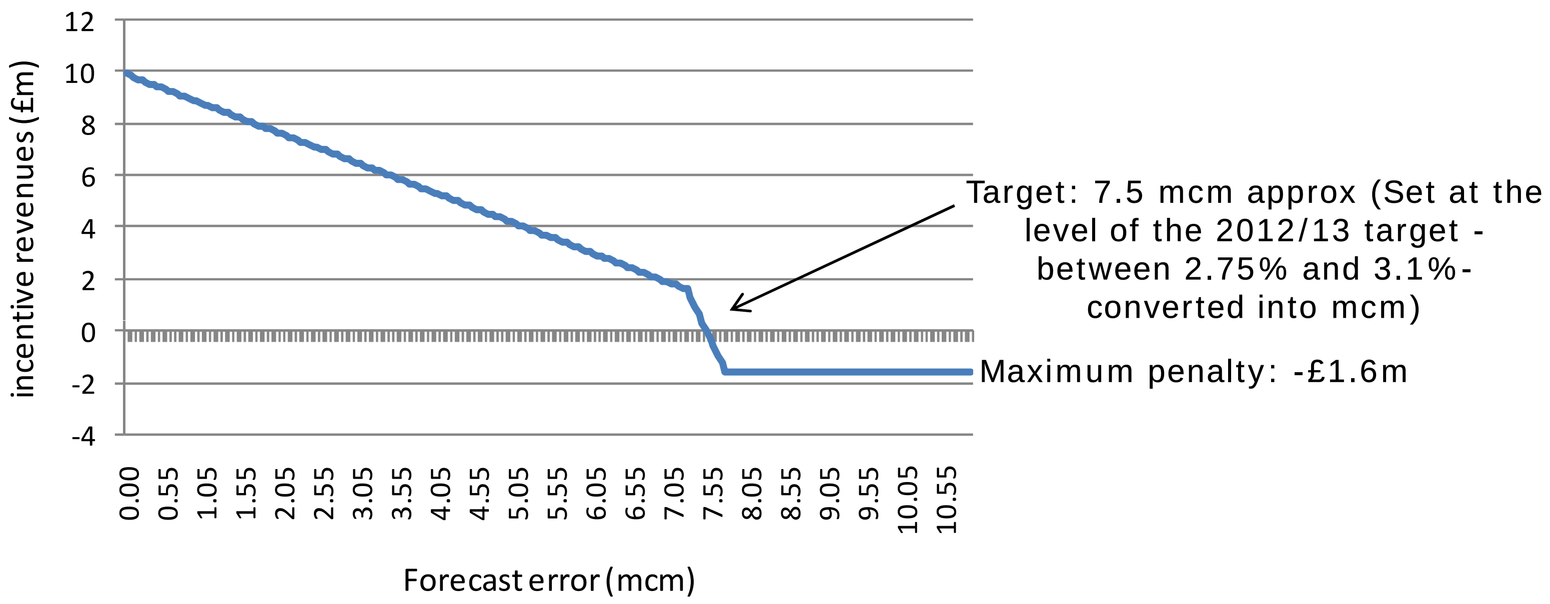
Demand forecasting

- Retain an incentive on the accuracy of NGG's D-1 13:00 demand forecast – but improve it
- Introduce a bundled D-2 to D-5 forecast
  - In response to stakeholder requests
- Leave improvement in NDM forecasts to be taken forward by DNOs

D-1 incentive

- The current performance measure:
  - Creates risks of windfall gains/losses when demand is exceptionally low/high
  - Does not create an incentive to forecast demand in winter more accurately
- We propose to change the performance measure to average error (mcm) weighted by daily demand:
  - More weight given to errors on higher demand days (i.e. winter) without introducing separate targets for each season (as NGG proposed)
- Target fixed for 8 years to encourage continuous improvement
- We do not consider that NGG’s volatility adjuster proposal is appropriate

Proposed D-1 incentive

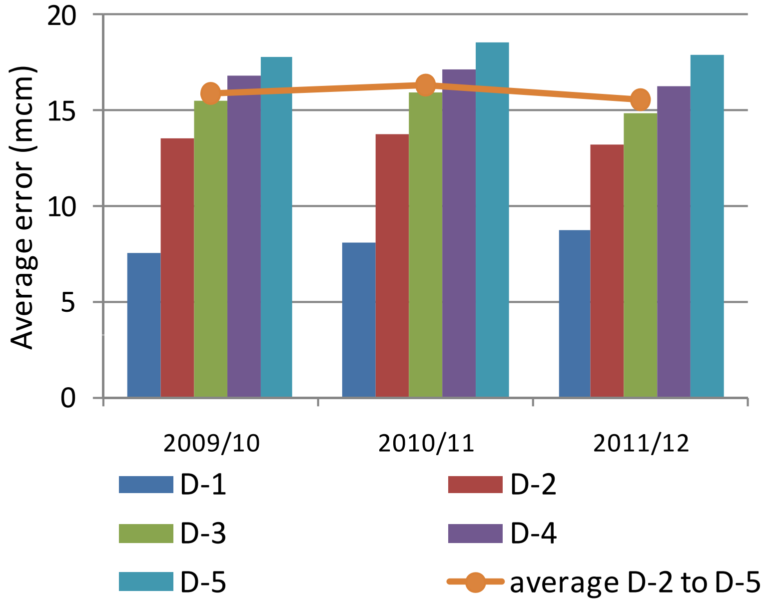


- **Do you agree that fixing the targets for 8 years will provide NGG with an incentive to continuously improve its performance in this area?**

- **Do you agree with our proposal to amend the calculation of the error, including increasing the weighting for days of higher demand?**

D-2 to D-5 incentive

- **D-2 to D-5 demand forecasts**
  - Initial 2 year incentive
  - Performance measure: bundled measure across the four forecasts (same error measure as D-1 forecast):
  - Target: 2013/14 at 14.38mcm and 2014/15 at 12.78mcm (improvements of 10% and 20% over average performance in the last 3 years)
  - Cap/floor: Maximum payment: £10m (for a zero forecast error), floor: -£0.5m



Do you agree with our proposals for the D-5 to D-2 forecast incentive?

Maintenance

- Stakeholders have raised concerns regarding NGG's maintenance planning, in particular its decisions to reschedule maintenance at short notice.

- Our proposal: two financial output incentives:

  - Efficient level of maintenance days:
  - Changes to Maintenance Plan

- Incentives set for two years initially.

Maintenance

- **Efficient level of maintenance days**:
  - Target: Based on historic data, with 10% improvement in 2013/14 and 20% improvement in 2014/15.

    Target = target number of maintenance days for in-line inspections (ILIs) per year + target number of maintenance days for valve operations
  - ± £20kfor each day above or below the target
  - Cap/floor: ± £1m.

- **Changes to Maintenance Plan**
  - Target: Based on average number of NGG's initiated changes to Maintenance plan in the last 2 years, with 10% improvement in 2013/14 and 20% improvement in 2014/15.
  - ± £50k for each change to the baseline
  - Cap/ floor: ±£0.5 million

Do you consider that our proposals could address the concerns that you have in respect of NGG's behaviour in this area?

Are our proposals appropriate and likely to be effective?

Shrinkage

- NGG buys gas and electricity that constitute the elements of shrinkage:
  - Compressor fuel use (CFU)
  - CV shrinkage
  - Unaccounted for gas (UAG)

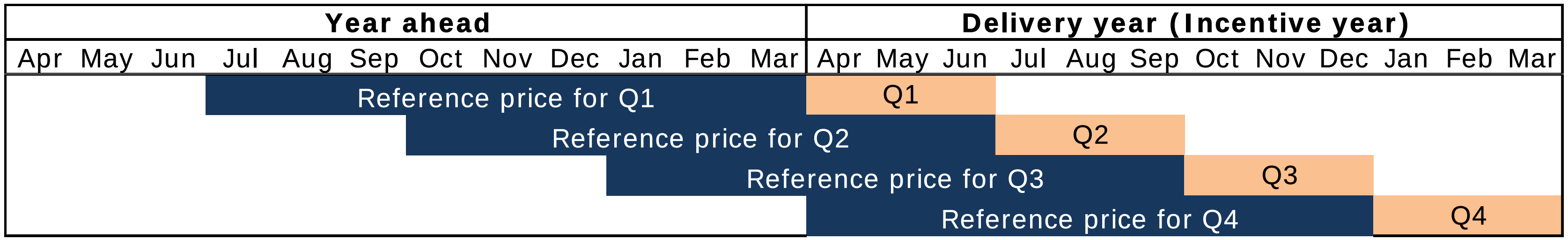
- Current incentive: NGG is incentivised to minimise the costs of purchasing shrinkage gas and electricity by setting target prices and target volumes
  - NGG has consistently achieved maximum gains

- **Our Initial Proposals**:
  - Retain the same form as the current scheme but introduce some enhancements.
    - Reference prices changed
    - Volumes set on a more transparent basis
    - Environmental adjuster removed
  - Methodology for calculating the parameters set for 8 years.

Price	×	Volume	=	Shrinkage Cost Target
Gas Cost Reference Price Electricity Cost Reference Price		Gas and electricity baseline volumes Ex post efficiency adjustment		(no environmental adjustment)

Shrinkage – Reference prices

- **For baseline volumes (gas and electricity)**
  - 9 month rolling average
  - Improves extent to which reference price for later quarters reflects current market conditions



- **Short term volumes**
  - Propose to move from month-ahead price with swing uplift to within month prices
  - Lowers short-term risk without requiring complex modelling of swing

Do you agree that the proposed changes to the reference prices are appropriate?

Shrinkage volume target

- Target would continue to be split into two parts:
  - **Baseline volumes**: set on a quarterly basis, 9 months ahead of the start of the quarter
  - **Efficiency component**: ex post adjustment
- Baseline volumes will be calculated on the basis of a published methodology statement:
- NGC went out to consultation on statement last week
  - CFU: Based on regression modelling
  - CV shrinkage: Based on network analysis
  - UAG: 90 days historic rolling average
  - Draft statement includes information on calculation swing uplift since this is NGG’s preferred option

Do you agree that it is appropriate for NGG to have in place a volume methodology statement?

Other areas

- **Environmental target adjuster**
  - No adjuster. NGG's compressors subject to the EU ETS and CRC EES
- **Other costs**
  - Pass through of TNUoS, DNUoS, electricity supplier and market costs
- **Sharing factors**
  - +/- 45%, aligned with RIIO efficiency factor (before 25% upside and 20% downside)
- **Caps/floors**
  - To be determined after consultation on methodology statement, but may increase due to higher sharing factors.
- **Interim arrangements for 2013/14**
  - The shrinkage incentive requires baseline targets and prices to be set months in advance.
  - Hence, cannot introduce proposed scheme for 2013/14
  - Intend to retain current reference prices but use methodology statement to set volumes

Do you agree with the proposed sharing factor? Do you agree with increasing the cap and floor of the incentive?

Reputational incentives

- **UAG**
  - Propose updating SLC C29 and extend it to include NGG facilitating the help of wider industry stakeholders in investigating the causes of UAG.

    - **Do you agree that we should continue to put in place a reputational incentive on NGG in respect of investigating the drivers of UAG?**
    - **Do you support the proposed industry workgroup to assist the investigation of the drivers of UAG?**
- **Operating Margins**
  - Propose updating C25 (reputational incentive to promote competition in the procurement of OM services)

    - **Do you agree with our proposal to put in place a reputational incentive on OM and to remove the current cost incentive?**
- **Availability and timeliness of information on website**
  - Propose replacing financial incentive with reputational incentive to have an information strategy
- **Forward looking market information**
  - Propose a reputational incentive to publish this information.

Next steps

- 21 September: deadline for responses to our IP consultation
- 3 October: deadline for responses to consultation on methodology statement (shrinkage volumes)
- Mid December : Publication of our final proposals
- Mid January: Consultation closes

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Comparison of proposals

Residual balancing

NGG's views	Our views
Linepack incentive – Not a fixed target for 8 years. – Calculate the linepack target as the average shipper imbalance in the previous year. – Introduce an "exceptional event adjuster"	**Linepack incentive** – The target should not depend on past values. Previous year's balancing performance is not necessarily representative of the market's balancing performance on the following year. – Too complex: Needs annual adjustments that affect all parameters of the incentive (targets, sharing factors and maximum payments).

Price incentive
– The current performance measure may limit NGG's ability to balance while staying below the target.
– New performance measure, calculated as a the difference between the highest and lowest price of NGG's balancing actions (mcm).
	Price incentive
	– Target depends on the previous year's values of imbalances and needs annual adjustments.
	– An absolute measure is not the right approach:
	  – The target would need to be adjusted according to market conditions.
	  – It may result in NGG trading at prices too different from the SAP, while still staying within the allowed spread, potentially resulting in larger impact on the market.

Greenhouse gas emissions

NGG's views	Our views
Short tem target: ▪ Based on average venting levels of the last two years minus 1.75% efficiency factor ▪ No annual reductions after 2013/14 **Long term target:** ▪ Based on results from Scheme of Work ▪ Calculated according to a methodology defined ahead of each incentive year • 50% sharing factor (aligned with Shrinkage) • No caps and floors • 10% deadband around the target	**Short term target:** • Based on current target minus 5% efficiency factor • 5% annual reductions, subject to results from Scheme of work **Long term target:** • Based on results from Scheme of Work • Declining path, initially set at 5% reduction per year, but revised after results from Scheme of Work are available. • No sharing factors • No caps and floors • No deadband around the target

Demand forecasting

NGG's views	Our views
• Performance measure – Bundled measure (D-1 to D-5) – Performance measured by the average absolute daily error (in mcm). – Volatility adjuster • Target (D-1 forecast): the lower of 2011/12 and 2012/13 performance • Introduce a new financial incentive on a D-1 13:00 NDM demand forecast	• Performance measure: – Separate measure for D-1. Bundled measure for D-2 to D-5. Performance measured by the weighted average daily error (in mcm). This measure gives more weight to errors incurred in days of higher demand (e.g. winter) without the need to introduce separate targets for each season – Not to include an adjuster for volatility. The SO should be able to learn and adapt to a more challenging environment, accomplishing similar levels of performance every year • Target (D-1 forecast): Set at the level of current target, converted to mcm. • Not to introduce a new incentive on a D-1 13:00 NDM demand forecast

Maintenance

NGG's views

- **Number of maintenance days**
  - Performance measure weighted by number of customers affected
  - Target fixed for 2 years
  - Each day of change with respect to the target valued at £50k
- **Changes to Maintenance Plan**
  - Target set as the days affected by changes initiated by NGG as a percentage of total maintenance days called
  - Target fixed for 2 years

Our views

- **Number of maintenance days**
  - There is not enough data that allows to introduce the number of affected customer in the performance measure.
  - Target: baseline values minus 10% improvement in 2013/14 and 20% improvement in 2014/15
  - Each day of change with respect to the target valued at £20k
- **Changes to Maintenance Plan**
  - Target set as the number of NGG instigated changes to a formal maintenance notification
  - Target: baseline values minus 10% improvement in 2013/14 and 20% improvement in 2014/15

Shrinkage

NGG's views

Short tem reference price:

– Include a swing uplift.

Environmental target adjuster

– Continue to include an environmental adjuster as in the current incentive.

Cap and floor

– Increase the cap and floor to keep the same range of incentivised costs with new sharing factor (45%).

Our views

Short term reference price:

– Not to include a swing uplift. Our proposal is to have short term reference price (week ahead).

Environmental target adjuster

– Not to include an environmental adjuster. The SO is already incentivised to improve its environmental performance through the EU ETS.

Cap and floor

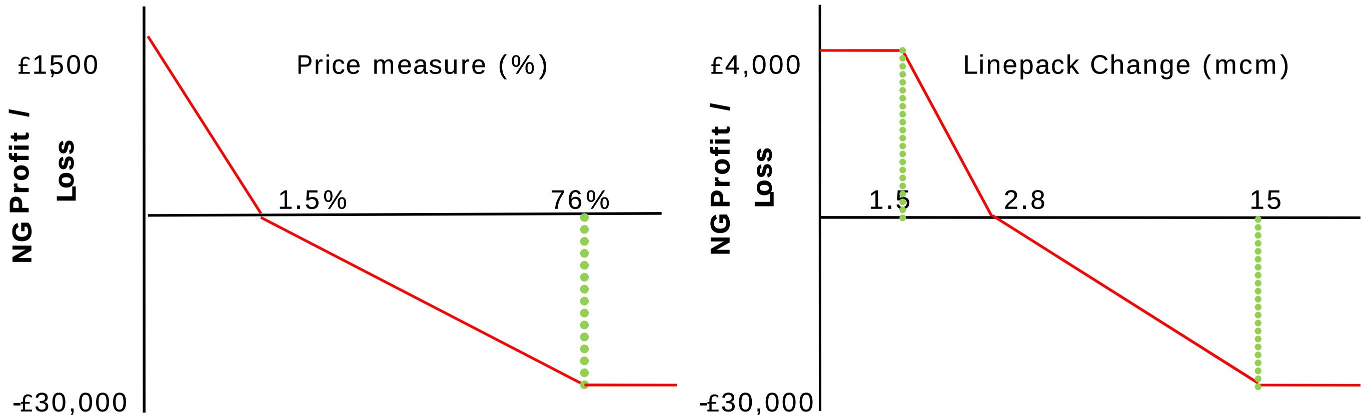
– Determine the appropriate cap and floor after analysis of methodology for setting target volumes.

Additional information

Residual balancing – Current incentive

This scheme looks to minimise the effect NGG has on the market when it buys and/or sells gas to balance the system as a result of shippers not balancing their own position. Annual payments are capped at £2m and collared at -£3.5m

- **Price Performance Measure:** This incentivises NGG to maintain the price of the gas it buys and sells for residual balancing reasons as close as possible to the market prices. Target: 1.5% of SAP
- **Linepack:** This incentivises NGG to minimise changes in the end of day linepack. Target: 2.8mcm



Greenhouse gas emissions – Current incentive

- Target:
  - Only relates to emissions vented from compressors
  - A yearly volume target of 3007 tonnes of natural gas vented from compressors (carbon cost of between £3-4m)
  - A ±5% deadband around the target (between 2857 and 3157 tonnes).
  - The target was set based upon recent history of levels of venting
- Performance measure:

Total amount of natural gas released to the atmosphere by venting from all relevant compressors	> = <	Target

  - There is no cost allowance but instead a target volume converted into an incentive payment based on outturn volumes against target
  - The difference between the target and the GHG emissions is multiplied by the non-traded price of carbon to determine the incentive payment

Greenhouse gas emissions – recent performance

Year	Target (tonnes)	Performance (tonnes)	Reference price (£ per tonne)	Incentive payments (£k)
2009/10	1876-2076	1601	574	£140
2010/11	2857-3157	3347	1100	- £209
2011/12	2857-3157	2982	1145	£0

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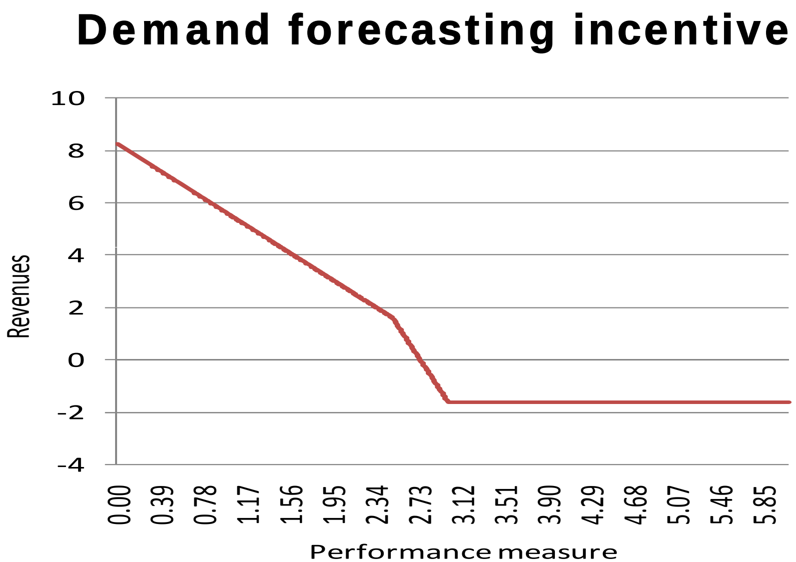
Demand forecasting (day ahead)

- Incentive on NGG to minimise demand forecasting error

- NGG receives an annual payment based on average daily error of the D-1 13:00 forecast

- Performance measure:

$$\frac{\sum \left| demand\ \ forecast - actual\ demand \right|}{\sum actual\ demand}$$



- Current target: 2.75% + adjuster for volatility from fast cycle storage sites. Maximum target for 2012/13: 3.1%

- Incentive revenues:
  - o Max (for zero forecast error), £8.8m
  - o Min (for error >= 3%), -£1.6m

Demand forecasting (Day ahead 13:00)

- We propose to change the performance measure to an average error (mcm) weighted by daily demand:
  - It gives more weight to errors incurred in days of higher demand (e.g. winter) without introducing separate targets for each season

Current performance measure (%)

$$\frac{\sum_d \left| demand\ \ forecast - actual\ demand \right|_d}{\sum_d actual\ demand}$$

Proposed performance measure (mcm)

$$\sum_d \left(\left| demand\ \ forecast - actual\ demand \right|_d * \frac{actual\ demand_d}{\sum_d actual\ demand_d} \right)$$

Demand forecasting – recent performance

Incentive year	Target	Performance measure	Incentive Revenues
2009/10	3.00%	2.66%	£2.1m
2010/11	2.85%	2.75%	£1.0m
2011/12	2.75%	3.37%	-£1.6m

Shrinkage – Current incentive and performance

- NGG Keep 25% of over performance or lose 20% of under performance against the target
- Cap:£5 million
- Collar: -£4m
- NGG has been hitting the cap (£5m) under this incentive in the last years.

Incentive Year	Incentive Target	Outturn	Out-performance	Incentive performance
2009/10	£246.4m	£139.4m	£106.9m	£5m
2010/11	£139.3m	£114.1m	£25.2m	£5m
2011/12	£124.52m	£95.76m	£28.76m	£5m

Maintenance

- **Proposed targets for Maintenance Days**

Incentive year	Target for each ILI Short run	Target for each ILI Long run	Target for Valve Operations
2013/14	4.005	5.240	42.3
2014/15	3.560	4.660	37.6

- **Proposed targets for changes to Maintenance Plan**

Incentive year	NGG instigated changes to a formal maintenance notification
2013/14	18
2014/15	16

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