



System Operators,
Transportation System Owners,
Shippers, Suppliers, Customers
and Other Interested Parties

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Dear Colleague

Date: 3 July 2008

National Grid Gas System Operator Incentives from 1 April 2008 Environmental Incentive Methane Emissions: Final Proposals

National Grid Gas (NGG) is the System Operator (SO) for the gas transportation system. The SO is responsible for ensuring the safe, secure and economic operation of the gas system. As part of the development of NGG's SO incentive schemes¹ to apply from 1 April 2008, we also committed to working with NGG to develop a new environmental incentive, relating to methane emissions, to also apply from 1 April 2008.² In response to this NGG issued its initial proposals³ for an incentive related to compressor venting on 2 May 2008, this consultation closed on 30 May 2008.

In this letter we set out our final proposal for an incentive scheme on NGG related to methane emissions from compressor venting. This final proposal has been developed based on discussions with NGG, a careful assessment of NGG's scheme options and forecast of volumes put forward in its initial proposals consultation, and consideration of respondents' views to NGG's initial proposals consultation. We consider that our final proposal represents a fair balance of risk and reward between NGG and its customers.

Provided that NGG consents to our final proposal, and subject to any representations made during this consultation and any direction received from the Secretary of State, this will be implemented retrospectively from 1 April 2008.⁴

Methane Emissions – development of an incentive

In managing flows on the NTS, NGG may be required to depressurise compressor units on the system. As part of this process natural gas (which is composed of nearly 90% methane by volume) is vented into the atmosphere. It has been acknowledged that methane is a more potent greenhouse gas than carbon dioxide. Total NTS compressor venting in 2007 was 1,761 tonnes of natural gas, whilst fugitive emissions⁵ are estimated at around 4,000 tonnes and emissions from the Distribution Networks are around 350,000 tonnes.⁶

¹ NGG is incentivised in a number of areas of its SO role (including shrinkage volumes, residual balancing and information provision).

² In our Final Proposals document we noted our intention to work closely with NGG to derive a forecast target volume for compressor venting, such that an incentive could be applied retrospectively from 1 April 2008.

³ National Grid Gas (NTS) SO Environmental Incentive: Initial Proposals Consultation, NGG, 2 May 2008.

⁴ Should NGG not consent, we would need to consider whether to refer the matter to the Competition Commission.

⁵ Emissions from operation of control equipment venting and valves on the NTS. We have asked NGG to consult on whether it is appropriate to introduce an incentive for these emissions from April 2009.

⁶ We introduced an environmental emissions incentive targeting all GDN methane emissions in the 2008 GDNCR. The incentive strength was aligned to the Shadow Price of Carbon, and the total emissions value was around £125 million p.a..

For environmental considerations, we therefore believe that NGG should have an incentive to minimise the volume of natural gas vented. Such exposure by NGG to the environmental costs of any increase or decrease in the level of natural gas vented, should act as an incentive on NGG to appropriately factor in the total costs of depressurising compressors, which may lead to a reduction in the overall level of venting.⁷

NGG's initial proposal

In its initial proposals NGG proposed an incentive to reduce the amount of emissions associated with compressor venting below a target volume, by introducing a payment to NGG for "beating" the target and the requirement for NGG to make a payment for exceeding it.

Proposed target volume

NGG proposed that the target volume should be based on the historic average of the last seven years of data. NGG proposed an average of seven years of data as this is the total historic data set, during which time there were significant unexplained year on year variations in emissions (as shown in the table below). NGG's analysis did not identify any factors which may have driven the historic levels of compressor venting.

Tonnes of natural gas vented from NTS compressors

	Total tonnes ⁸
2001	2098
2002	1819
2003	2383
2004	1922
2005	2213
2006	2283
2007	1887
Average/Target	2086

Proposed incentive price

In its initial proposals, NGG proposed a methane "price" of £546/ tonne of methane. This price is in line with the Defra⁹ guidance of using the shadow price of carbon (26 £/tCO₂e for 2008¹⁰) and converting to the methane equivalent (multiplying by a factor of 21, which equates to the Global Warming equivalent).

NGG outlined that the average NTS gas composition is 89% methane by volume, however, by weight this methane accounts for 80% of the weight of natural gas (i.e. 0.8 tonnes of methane is contained in each tonne of natural gas). NGG proposed to use this 80% factor to convert the methane price of £546/tonne of methane to a "natural gas vented price" of £437/tonne of natural gas.

Proposed incentive scheme

NGG's initial proposal was therefore for an incentive for **one year** based on a target volume of **2086 tonnes** of natural gas and an incentive price of **£437/tonne** of natural gas vented.

⁷ NGG is regulated by the Environment Agency and the Scottish Environmental Protection Agency in relation to methane and other emissions from the NTS under the Pollution Prevention and Control Regulations.

⁸ Actual data on a calendar year basis, as reported to the Environment Agency.

⁹ How to use the shadow price of carbon in policy appraisal: Defra, December 2007.

¹⁰ We note that the shadow price of carbon for 2009 is £26.5 £/tCO₂e, as pointed out by a respondent. Given that it is proposed that this incentive should be implemented from 1 April 2008 to 31 March 2009, it may be considered appropriate to amend the reference price to incorporate the 2009 shadow price of carbon. However, in the interests of keeping the incentive simple, we are proposing not to adjust the price.

NGG proposed that in order to avoid any distortions to the efficient point at which it is appropriate to vent methane and depressurise a compressor that there should be **no sharing factors or caps/floors**.

NGG noted that under this proposed incentive, if it were able to beat the historic average volume by 10% the revenue to it would be approximately £100k.

Alternative proposal: Inclusion of a deadband

NGG recognised that industry participants may have concerns that the unexplained volatility in the historic level of emissions resulting from compressor venting may lead to material windfall profits or losses to it.

It therefore considered that it may be appropriate for a deadband to be introduced around the target volume. NGG noted that the higher the deadband is, the weaker the incentive to reduce emissions would be.

Responses to NGG's initial proposal

NGG received seven responses to its consultation.¹¹ Responses in relation to the key points of the make up of the scheme were:

- Six respondents supported the introduction of the incentive;
- Six respondents supported the target being set on the basis of the last seven years' average volume (one respondent considered the target should be set at the lowest level seen);
- Respondents generally agreed with the proposed conversion factor, price and that the scheme should not have sharing factors, cap or floor; and
- Respondents' views were split on the inclusion of a deadband. Some felt that the deadband was needed to prevent NGG incurring windfall gains or losses whilst others felt that a deadband would weaken the incentive.

Other key points raised by respondents were:

- Concerns were raised as to the interactions with other incentive schemes and the need to ensure that a perverse incentive was not set;
- Two respondents considered that other greenhouse gases should be included; and
- The need to ensure effective monitoring of the incentive was noted.

Our view on National Grid's proposal

We continue to believe that it is appropriate to introduce an incentive on NGG in respect of methane emissions from equipment on the NTS. Although we note the point raised by two respondents that other greenhouse gases should be included in the scheme, in view of the relatively small level of emissions we consider it is appropriate to keep the scheme simple. We intend to ask NGG to report on how its behaviour may have been influenced by the implementation of the scheme so that we can assess how the scheme can be improved from April 2009 onwards.

As it is proposed to implement the incentive scheme retrospectively from 1 April 2008, one respondent was concerned that this could lead to a windfall gain to NGG. As stated above,

¹¹ From AEP, Centrica, EdF, E.on, RWE, ScottishPower and SSE. Available from NGG's website at <http://www.nationalgrid.com/uk/Gas/soincentives/docs/>

NGG has not identified any relationships that are driving the annual changes in the level of methane emissions. We therefore recognise that in setting an incentive scheme there is a risk that NGG may be subject to windfall gains or losses, as recognised by respondents to NGG's initial proposals, as a result of this uncertainty. Our final proposal therefore provides ways to mitigate these risks.

Forecast volumes

Whilst we recognise the point made by one respondent, that the target should be set at the lowest figure over the seven years, we note the variation in the annual figures and that NGG has so far failed to ascertain any underlying cause. We therefore agree with the majority of respondents that the target should be based on the seven year average.

Proposed incentive price

As outlined in our final proposals we believe, along with the majority of respondents, that the reference price should be based on the shadow price of carbon. We also agree that the methane price should be converted by a factor of 80% to obtain a natural gas vented price.

Proposed incentive scheme

We agree with most respondents that there should be no sharing factors or caps/ floors applied in order to avoid any distortions to the efficient point at which it is appropriate to depressurise a compressor and vent methane.

Inclusion of a deadband

Given the annual variation in the historic levels of compressor venting, we agree with the respondents who noted that this could lead to windfall profits or losses to NGG. However, it is important that the deadband does not deaden the effect of the incentive.

We consider that it is appropriate to include a deadband in the scheme. The table below shows the effect on NGG's potential payout for each of the seven years that we have actual data, for a scheme with no deadband, and deadbands of \pm 5%, 7.5% and 10%.

Potential outcome of a range of deadbands

		No deadband		± 5% deadband		± 7.5% deadband		± 10% deadband	
	Actual total (tonnes)	Variance from target (tonnes)	Payment to/from NGG	Variance from deadband (tonnes)	Payment to/from NGG	Variance from deadband (tonnes)	Payment to/from NGG	Variance from deadband (tonnes)	Payment to/from NGG
2001	2098	-12	-£5,057	0	£0	0	£0	0	£0
2002	1819	267	£116,866	163	£71,278	111	£48,484	59	£25,689
2003	2383	-297	-£129,602	-192	-£84,013	-140	-£61,219	-88	-£38,425
2004	1922	164	£71,855	60	£26,267	8	£3,473	0	£0
2005	2213	-127	-£55,312	-22	-£9,723	0	£0	0	£0
2006	2283	-197	-£85,902	-92	-£40,313	-40	-£17,519	0	£0
2007	1887	199	£87,150	95	£41,562	43	£18,768	0	£0

Based on the data in the table, we consider that a deadband of \pm 5%, (1982 – 2191 tonnes of methane) balances the need to limit windfall profits/ losses whilst ensuring that the incentive is not unduly dampened. NGG's performance under the first year of the incentive will obviously be taken into consideration when developing an incentive to apply from April 2009.

Our final proposal

Our **final proposal** is therefore for:

- a **one year** scheme from 1 April 2008 to 31 March 2009;

- a target volume of **2086 tonnes** of natural gas, with a deadband **between 1982 and 2191 tonnes**;
- a reference price of **£437/tonne** of natural gas; and
- there to be **no sharing factors or caps/floors**.

Way forward

The Appendix to this letter contains a statutory notice of our proposal to modify by agreement NGG's gas transporter licence under section 23 of the Gas Act 1986. This statutory notice proposes to implement the proposal set out in this document (subject to responses to this consultation).

We would welcome the views of interested parties in respect of the proposal set out in this letter. Responses should be sent to GB.markets@ofgem.gov.uk to be received no later than 31 July 2008 marked for the attention of:

Andrew Wright
Managing Director, GB Markets
Ofgem
9 Millbank
London SW1P 3GE

The statutory notice under section 23 of the Gas Act 1986 specifies a period of not less than 28 days for interested parties to make representations or objections and during which the Secretary of State may direct the Authority not to make the proposed modification. The Authority may make such revisions to the proposed licence modification as it considers appropriate in response to such representations, objections or directions and carry out a further statutory consultation.

NGG must consent to the proposed licence modification before it can be implemented. Subject to any representations made during consultation, direction received from the Secretary of State and NGG's consent, Ofgem intends to direct the modification to NGG's transportation licence shortly after 31 July 2008, to apply retrospectively from 1 April 2008.

Should you wish to discuss any aspects of this letter, please contact Alessandro Rubino on 020 7901 7311 or by email alessandro.rubino@ofgem.gov.uk.

Yours sincerely



Andrew Wright
Managing Director, Markets