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Dear Colleague

Network code modification 0707 "Amendment of Network Entry Provisions at Total E&P UK sub-terminal at St Fergus"

Ofgem¹ has carefully considered the issues raised in modification proposal 0707 to Transco's network code, "Amendment of Network Entry Provisions at Total E&P UK sub-terminal at St Fergus".

Having had regard to the principal objective and statutory duties of the Authority, Ofgem has decided to direct Transco to implement modification proposal 0707 because Ofgem considers that the proposal will better facilitate the relevant objectives of Transco's network code under standard condition 9 of Transco's Gas Transporters (GT) licence.

In this letter, Ofgem explains the background to the modification proposal and gives reasons for making its decision.

Background to the proposal

Gas Safety (Management) Regulations (GS(M)R)

The GS(M)R, which are part of health and safety legislation, set the legal parameters for gas entering into and leaving the GB gas network. These parameters are set to ensure the safe distribution and utilisation of gas. All gas entering the National Transmission System (NTS) at

¹ Ofgem is the Office of the Gas and Electricity Markets Authority. The terms 'Ofgem' and the 'Authority' are used interchangeably in this letter.

either sub-terminals or in some cases specified downstream blending points² must comply with these regulations.

Network entry agreements / legacy contracts

In addition to the GS(M)R, Transco has its own individual gas quality specifications at each entry point, which it agrees with the relevant sub-terminal operator. At some sub-terminals, these specifications are contained in Network Entry Agreements (NEAs). NEAs are subsidiary documents governed by Transco's network code. However, at some of the sub-terminals, these specifications are contained in pre-network code agreements (so called "legacy" contracts). These legacy agreements were signed primarily by British Gas and the relevant producers at the entry points prior to the introduction of Transco's network code in 1996.

The gas quality specifications contained in these agreements are referenced in Transco's network code. Under section I of Transco's network code, any changes to the Network Entry Provisions (NEPs), which include gas entry conditions, measurement provisions and the point or points of delivery, need the written consent of all users who are registered at such a date when the amendment is to take effect. Alternatively, changes to NEPs can be progressed via a modification proposal.

Gas quality parameters

Natural gas contains hydrocarbons (methane, ethane, propane, and butane), small quantities of hydrogen, inert gases such as nitrogen and carbon dioxide, and contaminants such as hydrogen sulphide, oxygen and mercury. In the UK, gas appliances are designed and tested to operate on methane. The appliances are tested with this reference gas and some tests are also performed with limit gases. The limit gases³ are those which fall at the upper and lower ends of the GS(M)R Group H Wobbe range. The Wobbe index is related to calorific value (CV) and density. The GS(M)R range for the Wobbe number is 47.2 MJ/m³-51.41 MJ/m³.

Transco's obligations

Transco has a number of obligations within the GS(M)R, the Gas Act 1986 and its GT licence that are relevant when considering changes to gas quality arrangements at entry terminals.

Transco must comply with the GS(M)R when allowing gases to enter its transportation system at either sub-terminals or in some cases specified downstream blending points.

Under section 9 of the Gas Act 1986, Transco must comply, so far as it is economical to do so, with any reasonable request for it to connect to the system and convey gas by means of that system to any premises. In doing so, Transco must avoid any undue preference or undue discrimination in the terms on which it undertakes the conveyance of gas.

² Gas Safety (Management) Regulations 1996 Regulations 2(4) and 8.

³ Limit gases relate to gas falling at the upper and lower end of the group H classification as determined by EN 437 Gas Category 2H. These limit gases have a Wobbe number of 54.7 MJ/m³ at the higher end and 45.7 MJ/m³ at the lower end. These gases are usually tested to confirm that they will operate safely, if temporary excursions up to these limits occur. It should be noted that it is accepted that "operate safely" can be achieved by controlling shutdown of the appliance in a manner that presents no hazard to the user or surrounding property.

Standard condition 4D of the GT licence also states that:

"the licensee shall conduct its transportation business in the manner best calculated to secure that neither –

- ♦ the licensee or any affiliate or related undertaking of the licensee, nor
- ♦ any gas shipper or gas supplier,

obtains any unfair commercial advantage including, in particular, any such advantage from a preferential or discriminatory arrangement."

Ofgem's statutory duty with regards to gas quality

The principal objective of the Authority is to protect the interests of consumers⁴. Further, under the Gas Act 1986, "the Authority may with the consent of the Secretary of State, prescribe standards of pressure and purity to be complied with by gas transporters in conveying gas to premises or to pipe-line systems operated by other gas transporters"⁵.

DTI/Ofgem/HSE/DEFRA study

The Government committed in the Energy White Paper with respect to gas quality, to "keep developments here closely under review. In particular we will monitor the likely effects on gas quality"⁶. Subsequently, the Department of Trade and Industry (DTI) announced the launch of a three phase gas quality exercise. This is a joint study between the DTI, Ofgem, the Health and Safety Executive (HSE) and the Department of Environment Food and Rural Affairs (DEFRA).

This study will assess the gas quality implications for the UK as it becomes more import-dependent in the coming years. The study will consider both the need to facilitate trade in the wholesale gas market and the need to ensure that customers' gas appliances function adequately. In phase one, a study was commissioned by the DTI from Ilex Energy Consulting Ltd⁷. It concluded that the UK's ability to meet gas demand could be impaired by the mismatch between the national gas specification requirements with respect to the quality of gas that could be imported and the quality of potential imported gas sources. This finding launched phase two of the study, which is currently exploring the different policy options available to the UK. Phase three, which is likely to occur in mid-2005, would begin to implement the preferred policy option.

Ofgem and the DTI are also aware of the gas quality developments that are occurring in Continental Europe. These developments are mainly focusing on the work being achieved by EASEE-gas⁸, which comprises of representatives of gas transporters and other interested parties from Europe, working to agree on common gas quality standards to aid the harmonisation of the gas markets in Europe. However, the results of this forum are voluntary and therefore EASEE-gas cannot currently force member states to adopt the standards.

⁴ Section 4AA (1) of the Gas Act 1986

⁵ Section 16 (1) (a) of the Gas Act 1986.

⁶ Energy White Paper: Our energy future creating a low carbon economy, DTI, February 2003

⁷ A copy of this report can be found on the DTI's website in the energy section.

⁸ European Association for the Streamlining of Energy Exchange, for more information see www.easee-gas.org

Entry capacity buy-back

Transco allocates NTS entry capacity rights through a series of long and short-term auctions. Under the price control regime established in Transco's GT licence, Transco is funded to provide a series of baseline output measures of entry capacity for each system entry point. These baseline output measures are based on the maximum physical capability at each system entry point and are referred to as Transco's transmission asset owner (TO) baseline output measures. Transco is obliged to offer 90% of these output measures for sale as system operator (SO) level entry capacity rights (this is referred to as Initial NTS SO baseline capacity)⁹. In the event that Transco cannot deliver the entry capacity it has sold and which shippers are intending to use, Transco is required to buy that entry capacity back from shippers at market-determined prices. Transco has incentives to manage and reduce the costs associated with buying back firm entry capacity that it is unable to make available on the day.

The entry capacity buy-back incentive is a sliding scale incentive, with a target level of costs, sharing factors and a cap and collar. The performance measure under the scheme is calculated from the costs Transco incurs in buying back entry capacity less the revenue it earns from some types of entry capacity products (on-the-day sales of firm and interruptible NTS entry capacity, sales of non-obligated incremental firm NTS entry capacity) and also revenue from overrun charges. For 2004-07 Transco has an annual cost target of £18 million. If costs are above this level, Transco faces 35% of the additional costs, whereas if costs are below this level, Transco receives 50% of savings made.

Shrinkage costs

Shrinkage gas is gas lost through the transportation system at both the local distribution zone (LDZ) and NTS level. LDZ gas shrinkage includes gas lost through leakage, theft and gas used for operational purposes. NTS shrinkage gas includes own use gas¹⁰, unaccounted for gas¹¹ and unbilled energy¹². Transco recovers the costs associated with NTS shrinkage gas through the SO commodity charge whilst LDZ shrinkage gas is recovered as part of general transportation revenue.

The costs of NTS shrinkage can be influenced by Transco's actions as NTS SO. Transco has therefore been provided with financial incentives to manage shrinkage gas costs efficiently under its GT licence as part of its NTS SO incentives. The cost target is set by multiplying forecast volumes of shrinkage gas by a reference price derived using specified forward prices. If costs are above the target, Transco faces 20% of the additional costs, whereas if costs are below the target level Transco receives 25% of the savings made. A cap of £4million and a collar of -£3million limit Transco's exposure under this incentive.

⁹ SO baseline capacity volumes for each NTS entry point are specified in Transco's GT licence.

¹⁰ Own use gas includes gas used for compression, venting and preheating.

¹¹ Unaccounted for gas arises from meter inaccuracies and discrepancies between measured flows and actual physical flows leading to differences in measured NTS entry and exit volumes.

¹² Unbilled energy is the result of differences between the actual CV of gas delivered onto the NTS and the average (flow weighted) CV upon which billing is based.

Modification proposal 0681 "Amendment of Network Entry Provisions at ConocoPhillips sub terminal at Theddlethorpe"

Network code modification proposal 0681 sought to change some of the gas quality parameters currently in place at ConocoPhillips sub-terminal at Theddlethorpe. These parameters included extending the current Wobbe range from 48.3 – 51.3 MJ/m³ to 47.36 – 51.41 MJ/m³, increasing the lower limit of CV for the gas from 36.9 MJ/m³ to 37.3 MJ/m³ and aligning hydrogen, soot index and incomplete combustion with the GS(M)R limit. Ofgem accepted modification proposal 0681 on 16 July 2004 after assessing that there was no identified increase in direct costs as a result of the changes to the gas quality parameters at entry.

The modification proposal

Modification proposal 0707 was proposed by Total E&P UK on 14 July 2004. This modification proposal seeks to amend the NEPs and specifically increase the Wobbe number upper limit at Total E&P UK's sub-terminal at St Fergus from 51.0 MJ/m³ to 51.41 MJ/m³. The effect of this proposal is to increase, for a given volume of gas, the energy content of the upper Wobbe limit at the relevant sub-terminal.

Total E&P UK requested that this modification proposal be granted urgent status to ensure that a decision would be received before the start of the next gas year which commences on 1 October 2004. On 14 July 2004, Ofgem agreed to grant urgency status to ensure that the modification proposal would be in a position to be decided upon and if appropriate implemented in readiness for the gas year 2004/05.

Transco's cost paper

Transco published a paper assessing the costs of implementing this modification proposal on its system. Transco noted two main potential costs; entry capacity buy-back costs and shrinkage costs.

Entry capacity buy-back costs

Transco considered that, if approved, this modification proposal would increase the proportion of demand being met by supplies from St Fergus and that as a result there would be an increase in the cost of managing entry capacity constraints at St Fergus. Transco also considered that it would not anticipate any offsetting saving in buy-back costs at other entry terminals in the immediate future. Transco produced a range of estimates dependent on the extra volumes of gas flowing through St Fergus on the basis of a sustained increase in flows. On the basis of incremental flow volumes of between 0 mcm/day and 20 mcm/day, Transco estimated that the level of buy-back costs would be in the range of £0-£25 million for the summer period and in the range of £0-£1 million for the winter period.

Shrinkage costs

Transco considered that if flows from St Fergus increased as a consequence of implementing this modification proposal this would be expected to increase the costs of compression needed to transport the gas to the rest of Transco's system. In Transco's opinion, the incremental

compression costs vary from £0-£5 million per annum for an increase in the flow rate volume of between 0 mcm/day and 20 mcm/day.

Other costs

Although Transco did not consider there should be any further material costs, it noted that there may be additional locational costs at other system entry points, due to constraints at St Fergus.

Transco also considered that there may be a positive financial impact on Transco and shippers through the entry capacity buy-back incentive scheme. If shippers increase aggregate flows at St Fergus and purchase additional entry capacity rights, this would increase the revenue attributed to Transco's entry capacity buy-back incentive scheme to the extent that the capacity sold was non-obligated, interruptible or sold within-day and not offset by a revenue reduction elsewhere.

Respondents' views

There were 11 responses to this proposal, all of them offering broad support to the modification proposal.

The majority of the respondents supported the principle of facilitating the delivery of additional gas supplies to the UK. One respondent stated that this modification proposal would strengthen medium-term security of supply by creating a commercial environment required to further exploit UK gas reserves.

Several of the respondents conceded that the probability of buy-backs occurring due to this modification proposal being implemented could increase. However, it was considered that the potential increase in buy-back costs would occur if similar quantities of gas meeting current entry specifications were to be delivered at St Fergus and therefore it would be inappropriate to consider the extra buy-back costs in isolation. One respondent noted that while St Fergus capacity has already been offered in both the long and short-term auctions and Transco has sold non-obligated capacity for the winter, the overall capacity level is however still below the NTS output measure as detailed in the licence. Furthermore, the summer baseline for 2005 is higher than the 2004 baseline. It was noted by another respondent that Transco manages its exposure to buy-back through the use of various tools, which are not limited to the spot buy-back market and therefore if shippers have purchased the necessary entry capacity, they should be permitted to flow against it. Another respondent considered that any additional buy-back costs should be met by the revenue from the sale of additional entry capacity as well as other charges for the flow of additional gas through the system.

One respondent noted that in Transco's cost paper, it is assumed that no action has been taken to mitigate the risk but in reality Transco's planning process and indications at long-term auctions would provide the appropriate signals to Transco. Two respondents highlighted the fact that as gas supplies from the UKCS decline, these new supplies would be replacing the declining supplies and in this scenario there would be no net change in the likelihood of buy-back actions and costs.

A few of the respondents acknowledged Transco's estimates for the increase in compression costs if this modification proposal were to be implemented but did not consider these costs to be significant. It was suggested by one respondent that although shrinkage costs could increase,

they should be weighed against the benefit the increase in gas supplies would have on consumers and system integrity. It was also suggested by a respondent that increasing the upper limit of the Wobbe number to the GS(M)R limit at all sub-terminals could help move the balance of gas entry to the south, which would ultimately lower system operation costs. Another respondent stated that Transco may be able to accommodate the increase in the compression costs within its current allowance for NTS shrinkage. A further respondent noted that it did not agree with Transco's estimates for the increase in compression costs. The respondent stated that the costs of local compression required to bring in gas from the sub-terminal are paid for by those shippers entering gas as an additional sub-terminal throughput charge.

Several respondents considered Transco's view that this modification proposal, if accepted, could cause the marginal cost of gas to fall. Several respondents agreed that increasing the Wobbe number at Total's sub-terminal at St Fergus could lead to a fall in the marginal cost of gas, however one respondent did not consider that it had enough information regarding potential gas flows to calculate whether there would be a positive or negative effect on prices.

Respondents also considered that this modification proposal would improve the existing arrangements because it would align the sub-terminal gas quality specifications with GS(M)R specifications. One respondent suggested that there would be considerable merits in increasing all the sub-terminals' Wobbe specifications to the GS(M)R limit, unless there were clear operational or economic reasons why this could not be achieved. This respondent stated that it would appreciate Transco demonstrating if there are any sub-terminals where the upper Wobbe number must be lower than the levels permitted by the GS(M)R. This respondent further considered that failing to allow this harmonisation of upper Wobbe numbers could constitute undue discrimination. One respondent stated that if this modification proposal is implemented it should be the case that any similar requests for widening the Wobbe index within GS(M)R should be granted.

One respondent was concerned with any safety issues associated with increasing the Wobbe up to the GS(M)R limit. At present, the respondent acknowledged that the current Wobbe limit included some allowance for variation in the Wobbe value. Raising the limit up to GS(M)R removes that tolerance and thus the threat of excursions above this limit would be greater. These potential excursions could increase the amount of carbon monoxide in domestic appliances and therefore this respondent believed that Transco and the sub-terminal operator should closely monitor the Wobbe limit to ensure that the gas does not exceed GS(M)R levels.

It was also suggested by a respondent that there may be merits in considering the carbon dioxide limit. The respondent considered that an increase in the carbon dioxide limit from 2% to 2.5% would be beneficial. It considered that the increase would make the UK a more attractive and economic destination for the Norwegian gas and thus ease security of supply problems.

The HSE did not respond to Transco's consultation.

Transco's views

Transco notes that this modification proposal, if approved, would enable additional gas supplies to be delivered at the St Fergus entry point. Transco states that this would enhance security of supply by creating the commercial environment required for the development of reserves. Furthermore, Transco states that by enabling the economic and efficient delivery of additional

gas supplies at St Fergus, this modification proposal would be expected to facilitate the achievement of securing effective competition between relevant shippers and relevant suppliers. In summary, Transco supported the approval of this proposal.

Ofgem's view

Ofgem has carefully considered the views of all the respondents and Transco on this modification proposal. Having had regard to its principal objective, Ofgem considers that this modification proposal does better facilitate achievement of the relevant objectives (a) and (c) of Transco's network code.

Relevant objective 9(a) of the GT licence – the efficient and economic operation by the licensee of its pipe-line system

This modification proposal allows for additional gas supplies to be made available at St Fergus. This additional supply of gas will, other things being equal, increase competition in the provision of gas balancing and other system services that Transco must procure to operate the system. Greater competition will lead to more efficient and economic operation of Transco's system. Therefore, Ofgem considers that this modification proposal better facilitates achievement of relevant objective (a) of Transco's network code.

Relevant objective 9(c) of the GT licence – securing effective competition between relevant shippers

The modification proposal would allow new gas to flow at St Fergus, not just from Total E&P UK but any other producer that wishes to land gas which complies with the sub-terminal's revised gas quality specifications. Ofgem agrees with Transco and respondents that by enabling these sources of gas to come on stream this would therefore increase competition in the wholesale gas market which could lead to downward pressure on gas prices. Therefore, Ofgem considers that this modification proposal better facilitates achievement of relevant objective (c) of Transco's network code.

Other considerations

Comments on Transco's costs paper

Ofgem notes that Transco considers there to be two main potential costs associated with implementing this modification proposal; entry capacity buy-back costs (in the range of £0-£25 million for the summer period and in the range of £0-£1 million for the winter period) and shrinkage costs (in the range of £0-£5 million per annum).

In Ofgem's view, all of the costs identified by Transco are driven by the *quantity* of gas flowed as a result of this modification proposal, rather than changes to the *quality* of the gas in question¹³. These additional costs would, therefore, be incurred if volumes of gas flowing

¹³ Ofgem acknowledges that both the quantity of the flows and the quality of the gas concerned can affect CV shrinkage costs, however, the costs presented by Transco in relation to this modification proposal refer only to costs linked to any resultant increase in the quantity of gas flows through St Fergus, rather than as a result of any variation in the quality of the gas.

through the relevant sub-terminal were to increase whether or not this modification proposal was made. They are not driven by changes in the quality of the gas concerned¹⁴.

Any additional costs would be treated in the usual way under the relevant incentive schemes that were explained in the earlier background section. Furthermore, Transco has obligations under its licence to have in place (and to keep under review) a charging methodology. This methodology should meet various objectives, including a requirement that charges reflect costs. It is therefore for Transco to keep under review whether the current charging methodology gives rise to charges relating to buy back costs and shrinkage that reflect the costs incurred and their drivers. If Transco concludes that they do not, Transco is able to raise modifications to the charging methodology.

Non-discrimination

In assessing the modification proposal, Ofgem has also had regard to its wider duties. In particular, Ofgem has considered whether approving the proposed change to the gas quality entry specifications could lead to an unfair commercial advantage to shippers using this sub-terminal relative to shippers using other terminals. Ofgem has also considered whether the arrangements would be unduly discriminatory.

When considering whether a set of arrangements are consistent with a duty to avoid undue preference or discrimination, it is normally the case that users should be charged similar prices for similar services. A set of arrangements where different users are offered different levels of service may not be unduly discriminatory if either of the following conditions is met:

- ◆ users face different prices for the different service levels and these prices reflect the costs associated with providing the different service levels; and/or
- ◆ all users are free to choose which service level they wish to have and are charged the same price irrespective of the service level.

In this context, the level of service being provided by Transco in accepting gas at an entry terminal is, at least in part, determined by the gas quality specifications set out in the NEA. Under the current arrangements, different users are receiving a different level of service at different entry terminals. Transco does not, at this time, levy any entry terminal specific charges to reflect these different service levels.

This modification proposal would, in effect, offer an enhanced service level to users of Total E&P UK's sub-terminal at St Fergus by allowing them to deliver gas of higher specification than under the current arrangements. However, Transco is not proposing to introduce a charge at this time for the enhanced service being offered. Ofgem considers that offering this enhanced service without introducing a charge would be consistent with Transco's duties and obligations subject to the following conditions:

- ◆ that offering the service does not give rise to any significant additional costs relating to the changes in gas quality specifications proposed; and

¹⁴ Ofgem considers that costs linked to, for instance, any accelerated deterioration of pipes caused by differing gas quality characteristics are an example of costs associated with variations in gas quality.

- ◆ that Transco would be willing to offer the same level of service at other entry points if requested to do so.

As outlined above, on the basis of the evidence provided by Transco in its cost paper, Ofgem does not consider that the modification proposal would lead to any material additional costs being incurred as a direct result of the changes to the specifications being proposed. Therefore, Ofgem considers that the first condition is satisfied. In cases where additional costs are directly associated with variations in gas quality specifications, offering an enhanced service without a related charge could be unduly discriminatory and hence inconsistent with Transco's licence obligations. Therefore, the question of whether or not any variations in gas quality specifications directly lead to additional costs being incurred is of great importance. The second condition is also satisfied as any user who wished to request the same level of service could seek to do so through a modification to Transco's network code. Ofgem is therefore satisfied that the proposal would be consistent with Transco's duties and obligations.

It is possible that changes in the patterns of flows on the network or in the number of users requesting similar services could lead to costs specifically linked to variations in gas quality characteristics arising in future. If this happened, Transco would, consistent with its obligations, have to consider introducing a charge to reflect costs at different entry terminals. Alternatively Transco could seek to modify the gas quality specifications at all entry terminals to a level that would prevent costs being incurred.

Safety

Ofgem's principal objective is to protect the interests of consumers. In carrying out its functions, the Authority has regard to safety and the environment¹⁵. Delivery of gas with inappropriate quality parameters to customers can result in a wide range of undesirable consequences. Transco considers that there are no safety issues in accepting higher Wobbe gas at Total E&P UK's St Fergus sub-terminal and the HSE has not raised any safety issues in relation to this modification proposal. Ofgem notes Transco and other respondents' views on this issue. As the higher Wobbe gas remains within the GS(M)R limit, Ofgem has no evidence to suggest it is likely to cause any significant safety issues for Transco or customers.

Way forward

Ofgem notes that it is for market participants to raise any further gas quality modification proposals and also notes that any further modification proposals raised will be considered on a case by case basis.

As highlighted in its decision letter in relation to modification proposal 0681, Ofgem will shortly be publishing an open letter highlighting current and potential gas quality issues. This will, in part, propose a way forward regarding gas quality issues in a wider context. Ofgem also notes that the route adopted to deal with the gas quality issues will need to account for the outcome of the DTI/Ofgem/HSE/DEFRA gas quality study.

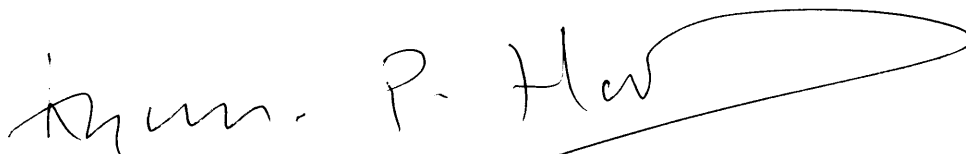
¹⁵ Section 4AA of the Gas Act 1986

Ofgem's decision

For the reasons outlined above, Ofgem has decided to direct Transco to implement network code modification proposal 0707 because it considers that it better facilitates achievement of the relevant objectives as outlined under standard condition 9 of Transco's GT licence and is consistent with the principal objective and statutory duties of the Authority. In particular, Ofgem considers that the additional gas supplies at this sub-terminal should better facilitate achievement of the relevant objective set out under standard condition 9 (a) of the GT licence – increase the efficient and economic operation by the licensee of its pipeline and the relevant objective set out in standard condition 9 (c) of the GT licence – securing the effective competition between the relevant shippers and the relevant suppliers.

If you have any further queries in relation to the issues raised in this letter, please feel free to contact Simon Bradbury on 020 7901 7249 or Fiona Lewis on 020 7901 7436.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Kyran P. Hanks', with a large, sweeping horizontal flourish extending to the right.

Kyran Hanks
Director, Wholesale Markets