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1 March 2001

Transco, Shippers and Other Interested Parties

Dear Colleague,

Modification Proposal 0433 'Changes to system cash-out prices'

Ofgem has carefully considered the issues raised by modification proposal 0433 *'Changes to system cash-out prices'.* Ofgem has decided to direct Transco to implement the modification, as we believe that this proposal will better facilitate the achievement of the relevant objectives of Transco's Network Code. The modification will be implemented with effect from the 1 April 2001.

In this letter we explain the background to the modification proposal, respondents' views and explain why we have directed Transco to implement the modification.

Background to the proposal

The current gas balancing regime is designed to provide shippers with commercial incentives to balance their inputs and offtakes to Transco's pipeline system, the National Transmission System (NTS) at the end of the gas day. The commercial incentives on shippers to balance at the end of each gas day are as a result of the application of a cash-out mechanism for any imbalances at the end of the gas day. If a shipper is out of balance at the end of the day, any imbalance volume is cashed-out at prices determined by trades in the On-the-Day Commodity Market (OCM). Transco may buy or sell gas through the OCM to keep the NTS within safe operational limits both within-day and at end of each day.

Cash-out prices were introduced to provide shippers with commercial incentives to balance by the end of each day and to ensure that the costs of any shipper imbalances were effectively targeted at those shippers causing them to be incurred. Under the current cash-out regime any shipper imbalance that falls within the sum of the shipper's tolerances[1] is cashed out at System Average Price (SAP) while any imbalance exceeding the sum of tolerances is cashed out at the System Marginal Price (SMP). Long imbalances, where a shipper's gas inputs exceed gas offtakes, are cashed out at SMP_{sell} while short imbalances, offtakes exceeding inputs, are cashed out at SMP_{buy}.

SAP is calculated as the weighted average of all trades on the OCM in a day. $SMP_{buy\ (sell)}$ is calculated as the highest (lowest) Transco bid (offer) for gas on the day. If Transco does not take any bids (offers), $SMP_{buy\ (sell)}$ is set equal to SAP.

[1] Shippers currently enjoy three tolerances, namely, Imbalance Tolerance Quantity (ITQ), the Absolute Tolerance Quantity (ATQ), and the Forecast Deviation tolerance. Both ITQs and ATQs will cease to apply from 1 April 2001. ITQs are defined as a percentage of each shippers' throughput and vary for each shipper depending on its customer portfolio. ATQs provide shippers out of balance by an absolute value of 7500 therms with protection from SMP cash-out exposure.

In addition to the end of day balancing arrangements, under the Network Code shippers are required to use reasonable endeavours to ensure that gas delivered onto the NTS at a rate that is constant apart from the result of a renomination and is the Implied Nomination Flow Rate. This rate is generally one-twenty-fourth (i.e. uniform delivery through the gas day), apart from where there has been a renomination during the gas day in which case it is the quantity divided by the remaining hours in the gas day. Ofgem has frequently reminded shippers of their obligations under the Network Code with respect to flow rates and has indicated in this context that a breach of the Network Code could also be found to be a breach of standard condition 2 of the shippers' licence.

Ofgem's July 2000 NGTA review document, *'The New Gas Trading Arrangements: A review of the new arrangements and further development of the regime, A review and decision document'* concluded that the operation of certain aspects of the gas balancing regime including cash-out, tolerances and the energy balancing incentive could be encouraging shippers to take imbalance positions both within-day and at the end of the day, producing a deterioration in shipper balancing performance.

Ofgem also has expressed more fundamental concerns about the cash-out regime being based around a daily balancing period, particularly in view of the increased within-day profiling of inputs and offtakes experienced by Transco on the NTS in recent months. Ofgem made clear that in its view, greater convergence between gas and electricity markets and trade across the gas interconnectors were likely to exacerbate this problem, in the absence of reform of the gas balancing regime. Ofgem's proposals for the reform of the gas balancing regime to address these issues is be set out for consultation in our gas balancing document, published 28 February 2001. Given the nature of our proposals, they are unlikely to be implemented for several months to allow sufficient time for consultation, discussion and system development.

Since the release of its July 2000 NGTA review document a number of modification proposals have been brought forward to improve the operation of the gas balancing regime in the interim period. These proposals are discussed below.

Imbalance Tolerances

Ofgem's July 2000 NGTA review document concluded that shipper imbalances had increased significantly and that there was evidence to suggest that some shippers were using tolerances for commercial purposes to avoid trading out imbalances. In August 2000, Ofgem approved modification 0415 *'Phased Reduction in Shipper Tolerances'*. This modification provided for a reduction in Imbalance Tolerance Quantities (ITQs) of 50% from 1 October 2000 and a subsequent reduction of ITQs to zero from 1 April 2001.[2]

In addition, in December 2000 Ofgem approved modification 0440 '*The cancellation of the auction of tolerance service'*. This modification removed the changes introduced into the Network Code by modification 0373, '*Changes to shipper tolerances, cash-out and the Introduction of Tolerance Services'* for the implementation of a tolerance service. This

[2] Absolute Tolerance Quantities are also scheduled to end on 31 March 2001 following Ofgem's acceptance of modification proposal 421, '*Temporary Extension of Absolute Tolerance Quantity'*, in September 2000.

service had been scheduled for implementation in April 2001 following Ofgem's acceptance of modification proposal 411, *'Postponement of Tolerance Auctions'*.

In approving both modifications 0415 and 0440, Ofgem reiterated its concerns that tolerances encourage shippers to take end of day balancing positions and may be contributing to within-day profiling activity. In particular, Ofgem indicated that the existing tolerance regime could be encouraging shippers to influence Transco's balancing actions by sending the system short early in the day to force Transco into a balancing action that sets a higher SAP. Shippers then take advantage of the higher SAP by delivering long into their tolerances.

As a result of these modifications, all imbalance tolerances will be withdrawn from 1 April 2001 and there will not be a tolerance service to replace them. In the medium term, Ofgem continues to advocate the introduction of a linepack service, based on the storage available within the pipeline system itself. This is discussed in more detail in our gas balancing document.

Cash-out and Transco's energy balancing incentive

Ofgem's July 2000 NGTA review document also raised concerns that imbalances being cashed out at SAP are potentially larger in circumstances where Transco only takes action on one side of the market. As all imbalances on the other side of the market will be cashed out at SAP, shippers could be encouraged to take imbalance positions outside of tolerances on that side of the market. Ofgem also indicated that the bias for prices being set on one side of the market could be reinforced by Transco's energy balancing incentive. Under the incentive regime, if no action is taken on one side of the market, SMP on that side is set equal to SAP and Transco receives the maximum allowed under its incentive.

Since the release of the July 2000 review a number of modifications have been raised to address these concerns.

In August 2000, V-is-on Gas raised modification 0420 '*Changes to System Prices'.* This proposal provided for the establishment of SAP-SMP differentials on those days where Transco has not taken an action on one or both sides of the market. In particular, the modification provided that:

- The SMP_{buy} would be equal to the greater of the highest market offer price in relation to a market balancing action taken for that day, or the average of the seven previous days' SMP_{buy}.

- SMP_{sell} would be equal to the lower of the market offer price in relation to a market balancing action taken for that day, or the average of the seven previous days' $SMP_{sell.}$

- On days when Transco took no market balancing actions, then SAP would be set equal to the average of the seven preceding days SAP but the rules proposed for SMPs would apply. The proposal was subsequently amended to provide that the $SMP_{sell\ (buy)}$ could not exceed (go below) SAP.

Ofgem decided not to direct Transco to implement modification proposal 0420. Although Ofgem expressed support for the intention behind the modification and recognised that it was

an attempt to deal with the problems associated with the cash-out mechanism, Ofgem was concerned that an SMP that is based upon a rolling 7 day SMP average could create differentials that are arbitrarily high and do not reflect market conditions on the relevant day. This could result in significant distortions in competition between shippers and in the gas market. Ofgem also considered that the proposals could create significant risks for shippers and may discourage trading of gas on the day.

The decision letter also stated that Ofgem remained convinced of the need to consider reform of the cash-out regime in the short term and that Ofgem would therefore encourage Transco and the industry to continue considering alternative proposals in order to address existing deficiencies.

Following Ofgem's rejection of modification proposal 0420, Transco raised modification proposal 0433 *' Changes to system cash-out prices'* to introduce a guaranteed minimum differential into the mechanism applied for the determination of system cash-out prices and to provide an additional incentive to encourage trade between shippers and greater liquidity on trading markets.

In addition, Transco has also raised modification proposal 0414 *'Energy Balancing Incentive Redesign'*. This proposal puts forward an alternative energy incentive structure that is intended to address Transco's management of system linepack levels and the bias associated with Transco setting marginal prices only on one side of the market. This modification will be released for consultation shortly and if implemented will take effect by 1 April 2001.

The proposal

It is proposed that the following mechanism should be implemented for the determination of prices to be used for energy balancing cash-out:

- The SMP_{buy} price for a gas day will be set as the greater of the SAP plus 0.0287p/kwh (0.84p/th) or the price in pence/ kWh of the highest priced Transco market action (excluding those actions specifically exempt)[3].

- The SMP_{sell} price for a gas day will be set as the lower of the SAP minus 0.0324p/kWh (0.95p/th) or the price in pence /KWh of the lowest priced Transco market action (excluding those actions specifically exempt).

The values that have been proposed for the default differential are derived from the auctions for one-year Hornsea storage product. The average yearly prices obtained from these auctions have been converted into an unbundled (injection, storage and withdrawal) daily price. Adding in Hornsea storage commodity prices in the unbundled capacity prices derives a daily Hornsea storage price. The proposal uses this price as a proxy for the value of flexibility/storage on the NTS itself and is designed to reflect the market value of flexibility on the days when no Transco balancing actions are taken.

The proposal was originally submitted for implementation from 1 January 2001.

[3] Actions that are specifically exempt include actions taken by Transco to address localised system constraints.

Transco's views

Transco supports the implementation of the proposal. In its final modification report, Transco indicates that the current cash-out arrangements may no longer be delivering shipper incentives that are consistent with the efficient balancing of the NTS. Transco states that unless it takes balancing actions that set unattractive SMPs for shippers there will be no incentive for the shippers to contain imbalances to within tolerance levels.

In this regard, Transco expresses concerns regarding the level of gas imbalances that are being experienced on the NTS on both an end of day and within-day basis. Transco also expresses concerns that the existing arrangements are not appropriately targeting the costs of imbalances. Transco comments that if imbalances cannot be corrected before the end of the gas day then the regime may generate considerable misallocation of costs between days.

Transco believes that the proposal provides a simple and pragmatic interim solution until such time as more sophisticated price mechanisms are established.

Respondents' views

Of the responses received, a narrow majority opposed the proposal. A summary of the responses appears below:

The majority of those respondents in support of the modification believed it would place greater financial incentives on shippers to achieve an end of day balance position and would benefit Transco in its role as residual gas balancer. A number of respondents also suggested that changes to system cash-out prices could increase liquidity in traded markets.

One respondent indicated that the retention of the SMP component of the cash-out mechanism was essential to ensuring appropriate incentives exist to deliver gas onto the system at times of system stress. The respondent indicated that on this basis the cash-out price outside of tolerances should be based on the greater of/lesser of Transco's daily most extreme buy/sell or the differential price. This respondent also indicated that strong shipper balancing incentives should help reduce overall balancing costs and may contribute to reducing within-day profiling behaviour. This respondent indicated that priority should be given to ensuring robust shipper balancing incentives over and above the need for cost reflectivity and cost targeting objectives.

Whilst supporting the proposal, two respondents indicated that they did not believe that storage proxy prices offer the best indicator of the value of within-day flexibility. One also expressed a number of reservations with the proposal arguing that as the spot prices increase the fixed differentials provide less of an incentive to balance. This respondent also indicated that, as a consequence of the energy balancing incentive, the existence of fixed differentials could reduce the potential for Transco to take balancing actions that would result in the setting of marginal prices within the default differentials. The respondent expressed its concern that this may hinder the discovery of market reflective cash-out prices. This respondent suggested that a volatility based cash-out mechanism should be established on the basis that it provides a better level of market reflectivity.

Nevertheless, despite these reservations both of these respondents provided their support for the proposal on the basis that it was a suitable interim measure for increasing the incentives on shippers to balance.

A number of respondents opposing the proposal expressed similar reservations to those outlined above indicating that the fixed differentials were arbitrary and would not reflect market conditions.

Several questioned the use of short-term storage as a proxy for the value of flexibility, suggesting that other sources of short term flexibility such as interruption prices or beach swing contracts have not been considered. Some shippers questioned the assumptions underlying the derivation of the fixed differentials and suggested that these assumptions have not been fully evaluated.

A number of respondents that opposed the proposal suggested that it would be preferable to address the issue of one-sided differentials through the reform of Transco's energy balancing incentive. These shippers indicated that the energy balancing incentive is the primary factor underlying the absence of differentials being set on both sides of the market and that the cash-out mechanism is a secondary consideration. Some shippers argued that a differential could be achieved by changing the way Transco takes its balancing actions so that it operates within a tighter bandwidth and takes smaller more frequent balancing actions.

A number of respondents suggested that any changes to the cash-out regime should not be considered until such time as the impact of the removal of balancing tolerances is assessed. These respondents also objected to ongoing piecemeal changes to the gas balancing regime.

A further respondent expressed disappointment that the modification had progressed to consultation. This respondent argued that the workstream report gave a misleading impression of workstream discussions and an incorrect impression of consensus.

One respondent suggested that the proposal would increase risk and impose greater costs on smaller players without significant levels of flexibility. Another suggested that the fixed differential would create an unduly penal regime during lower priced periods and suggested that a fixed percentage differential would be more appropriate.

One respondent suggested that cash-out differentials should only be introduced once tolerances have been removed. This respondent suggested that if the proposal was implemented before April 2001 then shippers with significant tolerances would be able to obtain significant rewards by trading with out of balance shippers with smaller tolerances at prices just below the level of the fixed differential.

Transco's revised proposal

In response to views expressed during the consultation process, Transco has revised the modification proposal to provide for its implementation from 1 April 2001, in line with the changes to the imbalance tolerance regime. It was previously envisaged that the modification would be implemented in early January 2001.

Ofgem's views

In our decision letter on Modification Proposal 0420 Ofgem made clear that, in our view, the commercial incentives on shippers to balance at the end of the day need to be strengthened. Ofgem expressed concern about the deterioration in shipper balancing performance and the evidence that tolerances were increasingly being used as a commercial tool. Ofgem also highlighted the possible impact of shipper behaviour and problems with the regime on prompt gas prices and forward prices.

Ofgem indicated that it would support reform of the cash-out regime that strengthened commercial incentives for shippers to balance at the end of the day, even on days when Transco had not taken any balancing actions on one or both sides of the market. On days when Transco has not taken any actions, any shipper imbalances will lead to a change in NTS linepack levels and will therefore be, to some extent, carried forward into the next gas day. If there is a problem on that day, system linepack may be depleted and this may require Transco to take more expensive actions on the subsequent day. These costs will then be targeted back to any shipper out of balance on that day, even though the problems were in part as a result of shipper imbalances on the previous day. Ofgem does not believe that the current arrangements promote competition or facilitate the efficient operation of the system as a result.

In addition to providing commercial incentives on shippers to balance their inputs and offtakes, Ofgem considers that the cash-out mechanism should target the costs of system imbalances back to those participants that are causing the imbalance. To achieve these objectives Ofgem believes that ideally cash-out prices should reflect the pattern of supply and demand throughout the day and reflect the cost to Transco of managing any imbalance. If cash-out prices do not reflect the cost to the system of the imbalance, this will distort incentives. For example, if imbalance prices are too low relative to the cost to the system of the imbalance, this will encourage shippers to go short and not to trade out their own imbalances. Conversely if prices are too high, relative to the cost to the system of the imbalance, this will encourage shippers to go long. If costs are not accurately targeted, this could distort competition as residual costs will be smeared across all shippers and not targeted at those shippers who caused them. This could result in an implicit cross-subsidy between shippers in balance to those out of balance.

Ofgem therefore supports this modification proposal on the basis that it seeks to provide a proxy price for system flexibility. This should ensure that on days where Transco does not take balancing actions on one (or both) side(s) of the market, cash-out prices better reflect the costs of imbalances and do not encourage shippers to go out of balance and sell or buy from the system.

Clearly it would be preferable if cash-out prices were based on the actual value of system flexibility over a particular balancing period. However, until a full linepack service is implemented this objective cannot be achieved. In the absence of a linepack service, Ofgem considers that any cash-out price should at least be based on some proxy for system flexibility. Ofgem believes that the methodology contained in this proposal that derives a default cash-out price from Hornsea storage prices represents a suitable proxy for implementation on a transitional basis until a full linepack service is introduced.

Some market participants have suggested a range of other methodologies for deriving cash-out prices including percentage based differentials and historical based volatility mechanisms. However, Ofgem does not believe that these methodologies provide an appropriate proxy for the use of system flexibility. For example, Ofgem considers that cash-out prices based on percentage differentials are arbitrary and do not bear any relationship to

supply and demand. There is also, in Ofgem's view, no clear basis on which the level of any fixed differential could be set. Similarly, any measure of volatility will inevitably be backward-looking and will therefore, on occasion, not reflect market conditions.

Ofgem accepts that there may be other proxy prices that could be used in place of the one year storage product but does not believe that this is a reasonable argument for delaying the implementation of this modification. Each modification must be judged on the ground of whether it better facilitates the relevant objectives. It is open to shippers to propose subsequent modifications if they believe that there are better proxy prices when measured against this test.

Ofgem does not agree that directing this modification to be implemented will adversely affect small shippers. All shippers have access to flexibility services including physical storage and virtual storage services to enable them to balance. In addition, all shippers can trade gas on the day through a variety of channels, including the OCM.

Ofgem accepts that Transco's energy balancing incentives may be part of the current problem. However, this is subject to a separate modification proposal which will be assessed on its merits and in the light of respondents' views. Ofgem does not agree with the respondent who argues that Transco should be given less discretion and less freedom to decide when to act. Ofgem believes that, consistent with the objectives and principles behind the NGTA program, Transco's role should be that of residual gas balancer and shippers should trade out their own imbalances to the greatest extent possible. Ofgem is not in favour of artificially restricting Transco's actions and forcing it into the market on more frequent occasions. Ofgem believes that this would lead to higher balancing costs, less efficient actions and could distort traded markets. Instead, Ofgem prefers that Transco be provided with the discretion to act within a defined incentive framework. In the event that this incentive framework is producing distortions, then Ofgem would be willing to consider any revisions that may be put forward.

Ofgem agrees with the views of some respondents that the implementation of this proposal should be delayed until 1 April 2001, to coincide with the elimination of shipper tolerances. Ofgem considers that in the absence of this delay, shippers with significant tolerance holdings have the potential to exploit the default fixed differential to the detriment of those shippers with smaller holdings.

In conclusion, Ofgem recognises that modification proposal 0433 may not provide an ideal solution for determining imbalance prices. However, Ofgem believes that in the absence of a fully developed line pack service this proposal will provide better incentives than the existing arrangements and will both encourage shippers to improve system balancing performance and address some of the distortions in the current cash-out arrangements.

Ofgem's decision

Ofgem considers that the cash-out methodology proposed in this modification should strengthen the commercial incentives on shippers to balance by the end of each gas day and should better target the costs of any imbalances to the shippers causing them. Ofgem does not believe that the proposal to use prices derived from storage services is ideal but the test in directing Transco to implement a proposal is whether it *better* reflects the relevant objectives.

Against this test, Ofgem believes that the proposal will better facilitate the efficient and economic operation of the NTS by Transco. As shippers will have stronger commercial incentives to balance, this should reduce Transco's role and the number of balancing actions it needs to take to keep the system in balance by the end of the day, leading to balancing costs associated with achieving an end of day balance that are lower than they would otherwise be. As the net costs associated with these actions are smeared back to all shippers, this should reduce the scope for any cross-subsidy between shippers. The storage proxy prices should ensure that on days when Transco does not take any balancing actions, the costs of being out of balance are more accurately targeted to out of balance shippers. This should better facilitate the objective of securing effective competition between relevant shippers and between relevant suppliers.

Ofgem has therefore decided to consent to this modification, as we believe that it better fulfils the relevant objectives of the Network Code.

If you would like further information in relation to this proposal, please feel free to contact me using the details above.

Yours sincerely

Steve Smith
Director, Trading Arrangements