

## Principles for Balancing Rules

### Executive Summary

#### Overall balancing issues

This report aims to establish more robust set of principles in relation to balancing rules reflecting the need to better define roles and responsibilities that need to be established as industry re-structures itself to meet the requirements of the second Gas Directive.

These principles are established to meet a number of objectives. These include from a TSO's perspective that balancing regimes result in safe, reliable and efficient operation of the transportation network. For a network user's perspective that the rules do not hamper competition, in particular that they do not result in an excessively penal system. This is clearly a function of the flexibility and tools available to shippers. At the very least flexibility services such as linepack should be made available where hourly balancing is implemented. Under daily balancing could in principle also be offered, where this is efficient and there are effective means for TSO to still be able to utilise linepack within day.

The following amendments or additions to the Guidelines for Good Practice are therefore suggested by the CEER:

**Principle 1: Balancing responsibilities:** Balancing rules and incentives should be designed to ensure that there are strong commercial incentives on network users to balance their own inputs and offtakes over the relevant period [see principle 3 below]. The TSO however retains the overall responsibility for the economic and efficient operation of its system and therefore should retain a residual role to maintain physical balance to ensure the efficient and safe operation of the system.

**Principle 2: General requirements for balancing rules:** Balancing rules should be designed on a non-discriminatory and transparent manner based on objective criteria. As these rules are administered by the TSO, they should equally be applied to own commercial operations of vertically integrated companies as to third parties on a formal and verifiable basis. Balancing rules should take account, on the one hand, of the operational considerations of the network (i.e. the actual capabilities of the system may require different balancing rules) and commercial incentives of TSOs. On the other hand balancing rules should facilitate effective competition and participation between shippers and avoid discrimination and raising undue barriers for new entrants and small players. Therefore, balancing rules should be reflective of the actual flexibility and tools available to shippers to balance the system while ensuring there are sufficient commercial incentives on shippers to balance.

**Principle 3: Frequency of balance:** The choice of an appropriate balancing period clearly needs to be based on a balanced assessment of a number of objective criteria. These should include:

- the operational capabilities of the transportation system to balance the system;
- the inherent flexibility and tools to balance that market participants have over the relevant period; including the availability of linepack services;

- the interaction of balancing period with effective commercial incentives to balance, in particular interactions of shorter balancing periods in electricity markets with potentially longer periods in gas;
- availability and accuracy of the information over the relevant period;
- the costs imposed by particular balancing regimes, for example the requirement more regular information flows over shorter balancing periods; and
- nomination procedures complementary to the frequency of balance.

**Principle 4a: Balancing costs:** TSO's should have commercial incentives to ensure that the costs of balancing actions and associated operational costs that the TSO incurs are efficient. However, the regime needs to ensure that the TSO remains broadly cost-neutral in relation to the balancing actions it takes so that any revenues or costs provide correct incentives in relation to the timing and size of balancing actions.

**Principle 4b: Charges for imbalances:** Charges for imbalances should aim not to distort competition and/or trading activities in wholesale gas and storage and flexibility markets. A well designed "cash-out" regime should ensure that there are appropriate commercial incentives on shippers to balance their inputs and offtakes, such that, **in aggregate** the participants of the system face strong incentives to physically balance the system in an efficient way. Charges for imbalances should be non-discriminatory. In particular, there should also be accurate targetting of system balancing and operation costs to those participants that caused them to be incurred. Any costs that cannot be targeted should be allocated back to shippers in a non-discriminatory manner.

**Principle 4c: Trading of imbalance positions:** Network users should be provided with the ability to trade imbalance positions, with each other, for instance as if the two (or more) shippers in question were acting in aggregate (i.e. in a similar manner to the way a single shipper is able to reschedule its portfolio of flows). Ex-post trading of imbalances should in principle be permitted provided that it creates an appropriate balance between necessary flexibility for shippers to avoid exposure imbalance penalties while providing effective incentives, which in aggregate, might be expected to minimise the incidence of residual balancing actions.

**Principle 5: Tolerance "services":** Tolerance services in particular for less mature or less liquid markets is a useful tool to facilitate competition and a pragmatic means to handle some of the uncertainties surrounding balancing. Where offered, tolerance levels shall be designed in a way which, reflect the actual technical capabilities of the transmission system for example taking into account daily effective temperature. However, particular account should be taken of the extent to which tolerances may be utilised by shippers to offer "balancing gas" or cause balancing costs to be incurred by the TSO that are subsequently socialised. Therefore, careful consideration is in sufficiently liquid and developed markets of the necessity of tolerances where this leads to a significant socialisation of imbalance costs. In any case, the secondary trading of tolerances should be permitted.

**Principle 6: Information and transparency:** Market participants shall be provided with sufficient, well-timed and reliable information about their balancing status and imbalance charges to be updated on at least on a daily basis and in function of the balancing period

applied, where such information can be provided at reasonable costs. Information on imbalance positions shall allow system users to take timely corrective actions.

**Principle 7: Harmonisation of balancing rules:** TSO's should ensure compatibility of balancing regimes (tolerances, imbalance charges etc.) in order to facilitate gas trade across borders of different TSO systems. European TSOs shall endeavour to harmonise balancing regimes and streamline structures and levels of balancing charges in order to facilitate trade. Where it is justified that balancing regimes (tolerances, imbalance charges, balancing periods etc.) remain different between interconnected networks, standardised agreements and procedures between TSOs should be put in place in order to facilitate gas trade. Such arrangements shall be published and notified to the relevant regulatory authority.

In addition to the above principles, this report summarises the second benchmarking exercise conducted by the Commission, which shows a diversity of approaches in relation to balancing rules. Based upon the principles suggested in this report, it is possible for a diversity of approaches to co-exist. However, a number of network users in various discussions have complained that balancing rules in certain Member States are too onerous – this might suggest that they are not in compliance with the above principles. Therefore, a **useful exercise in the Commission's next benchmarking study would be to consider whether these balancing rules comply with the new principles suggested for the guidelines for good practice.**

In addition, the diversity of approaches potentially acts as a barrier to trade between Member States. As stated in principle 7, already contained within the Guidelines for Good Practice, TSO's should aim to facilitate trade across borders. **The CEER therefore suggests that GTE (in consultation with network users) to conduct an analysis of the possible barriers to cross-border trade resulting from different balancing rules; and whether existing practice are sufficient or further solutions are required, in particular in light of the re-organisation necessary under the 2nd Gas Directive.**

## Introduction

### Context

Reflecting the October 2002 Madrid Forum conclusions, the CEER Gas Task Force established a range of work streams. This paper considers the issue of European gas balancing and the need to develop further the Commission's Recommendations on Guidelines for Good Practice (GGP).

The 5th meeting of the European Gas Regulatory Forum (the Madrid Forum) on 7-8 February 2002 adopted a set of Recommendations on GGP in relation to Balancing. These recommendations aimed at:

- clarifying the roles and responsibilities of the main parties in gas transportation;
- ensuring the application of the principle of non-discrimination;
- facilitating cross-border trade and customer choice through competition in the internal market; and
- avoiding distortions to trade.

This paper does not intend to duplicate the recommendations provided by the GGP but aims to build on this work and identify more detailed principles for balancing rules and a better means to determine the division of responsibility between network users and TSOs.

### Approach in the paper

It should be noted at the outset that there remains a diversity of practice between Member States in terms of balancing regimes. This does not automatically imply that harmonised rules should be established in relation to balancing. Indeed a good starting point, would be to consider appropriate principles for balancing rules by first describing the balancing "problem" both from a TSO and shipper's perspective. Taking into account these two perspectives, it is necessary to determine what enables a balancing regime to operate effectively and efficiently and what are the risks to system integrity and according need for incentives to avoid imbalances. This discussion will help provide a guide to determine the appropriateness or otherwise of different approaches to balancing in other member states.

Clearly, the discussion of balancing issues, should not be on a purely theoretical basis, therefore bench-marking of existing rules or practices in Member-states can aid understanding of the materiality of particular issues identified in the previous section.

The next step is to understand how differences in balancing rules may act to distort trade between member states. The difficulties that can be identified may then suggest consideration additional mechanisms to deal with these distortions or to identify the minimum level of harmonisation necessary to address these concerns.

We therefore suggest in line with the existing practices that industry participants identify the difficulties and potential barriers in relation to different balancing systems and possible solutions to resolve these issues.

## Identifying gas balancing issues

### The gas balancing problem

At the simplest level, the problem of gas balancing is to ensure that what goes into the pipeline system comes out. Pressure in pipelines has to be maintained within certain thresholds. In general terms, if the amount of gas offtaken is higher than the amount input, this will lead to a reduction in pressure. As pressure falls (increases) there is increasing threat to network integrity, and ultimately network failure is inevitable if pressure is allowed to continue to fall (increase)<sup>1</sup>. Both the safety perspective and the costs of re-establishing the network in such circumstances potentially being far in excess of the costs of ensuring network balance justify ensuring network balancing is maintained. The key issue is therefore how to manage system balancing in an appropriate form and establishing where the responsibilities for network balancing lie.

Clearly, with an integrated company solely responsible for transportation and supply there was relatively little need to define the division of responsibility for balancing actions. To the extent that imbalances in inputs and offtakes occurred, the network was designed to be able to cope with such imbalances for a certain period or integrated entity could simply direct for further supply or demand changes, including interrupting customers. To the extent that the costs incurred in choosing these approaches were generally passed on to consumers, there were relatively blunt incentives and signals to weigh up the relative costs of different solutions.

However, with the separation of responsibilities under the new Gas Directive, the role of different industry players is changing. Many transportation networks are in a transitional phase and need to adapt from networks operated largely for one supplier to a system capable of handling a number of network users (shippers). The end-point would be an independent TSO (free from production and supply interests) providing effective and non-discriminatory access to its network. However, due to the lack of detail in the new gas Directive, it does not provide precise details as to how the division of responsibility for many activities, including balancing should be handled.

#### The division of responsibility between TSO's and network users

**Principle 1: Balancing responsibilities:** Balancing rules and incentives should be designed to ensure that there are strong commercial incentives on network users to balance their own inputs and offtakes over the relevant period [see principle 3 below]. The TSO however retains the overall responsibility for the economic and efficient operation of its system and therefore should retain a residual role to maintain physical balance to ensure the efficient and safe operation of the system.

In this framework, it should be clear that a network operators principle concern should be in relation to the aggregate balancing position and TSO's should have the final responsibility for ensuring that the safe and efficient operation of its network.

The move to effectively competitive markets, implies multiple shippers with a range of customers, which clearly introduces an additional dimension to the balancing issue. Information needs to flow between network users to the TSO, and clearly these information flows need to be handled more explicitly than perhaps occurred under the integrated regime. Although the current state of play in Europe is that there has been varying degrees of progress in opening up markets, in many cases, the degree of third party access remains limited. The balancing mechanisms in place are not necessarily geared to full market opening. Such conclusions were clearly highlighted in the Commission's second benchmarking report.

In addition, given that primary responsibility should fall to shippers to ensure that they maintain their portfolio in balance, the TSO also has a role in applying the rules that aim to ensure that shippers have incentives to maintain their portfolio in balance. This issue is discussed later, and

<sup>1</sup> Strictly speaking imbalances can be handled to some extent by linepack buffers, this is discussed in more detail in this section.

the key point is the need to ensure the costs of balancing actions incurred by TSO's are appropriately targeted back to those shippers responsible.

Ultimately, it is the aim of liberalisation to introduce the benefits of market-based arrangements wherever appropriate. This includes maximising the ability of shippers to compete without impediments which is one of the reasons for delegating responsibilities. Nevertheless, there is a danger of placing all of the responsibility for balancing on shippers or at the same time placing obligations on shippers that they may not be able realistically to meet. This is discussed in more detail in the following section.

#### Understanding the shipper perspective

**Principle 2: General requirements for balancing rules:** Balancing rules should be designed on a non-discriminatory and transparent manner based on objective criteria. As these rules are administered by the TSO, they should equally be applied to own commercial operations of vertically integrated companies as to third parties on a formal and verifiable basis. Balancing rules should take account, on the one hand, of the operational considerations of the network (i.e. the actual capabilities of the system may require different balancing rules) and commercial incentives of TSOs. On the other hand balancing rules should facilitate effective competition and participation between shippers and avoid discrimination and raising undue barriers for new entrants and small players. Therefore, balancing rules should be reflective of the actual flexibility and tools available to shippers to balance the system while ensuring there are sufficient commercial incentives on shippers to balance.

It is a reality of the gas system that gas does not necessarily always flow onto the transportation system at an equivalent rate to the offtake consumption patterns of end-users. However, shippers do have some choice over flow rates and inputs and (to some extent) offtakes<sup>2</sup>, so commercial decisions are made by shippers in controlling these variables. These choices will have two main dimensions from the shipper's perspective, namely: the incentives to ensure balance is maintained and available flexibility to control inputs and offtakes.

- **Sufficient Incentives:** In general, over a relevant time-period, shippers that have arranged for gas to be input into the system have incentives to ensure that, ultimately, gas is offtaken by its customers or that they gain some financial reward for inputting gas onto the network for example by trading that gas<sup>3</sup>. On the other hand, without sufficient incentives, rules and means of detection in place, there is a danger that shipper's using shared transportation system would not necessarily ensure that enough gas is input into the system to match offtakes of their particular customers, effectively a "free-rider" problem.

This leads to a need for commercial balancing to ensure that each shipper is injecting sufficient quantities of gas to meet their customers offtakes.

- **Available flexibility:** there are a number of factors both on the demand or supply-side that may prevent sufficiently incentivised shippers from maintaining supply and demand balance, including gas-supply failure upstream of the transportation network in question, changing demand situations etc. The degree of supply and demand-side flexibility will be influenced by

<sup>2</sup> This could include demand-side participation or choices over supplier customer portfolios (for example adding large consumers with very flat consumption profiles).

<sup>3</sup> On networks where it is possible, to subsequently trade with another party wishing to offtake gas on the system.

a number of factors, including the technical capability of supply or demand to respond, rules imposed by a TSO or services and tools available to shippers.

As stated above, there is also an important inter-relationship between incentives and flexibility, because shippers can possibly "procure" flexibility either in supply or demand (e.g. in its contracts with upstream producers that provides for beach swing). By definition, if the incentives to maintain individual balance are not strong enough, then a shipper will have limited incentives to procure additional flexibility. By contrast, where the possibility to procure flexibility on the supply or demand-side is constrained or is simply not available (e.g. shipper nominated interruptible services aren't offered), even if incentives are sufficient this is not a guarantee that shippers will realistically be able to achieve desired objective.

For both incentive and flexibility considerations there is a crucial interaction between the time element (i.e. the relevant period – hourly, daily, monthly) over which a shipper is required to balance the system. This time period is often referred to as the frequency of balance.

It should also be noted regarding incentives on shippers that the CEER wishes to emphasise that shippers can only operate within the "rules" placed upon them. The objective of the liberalisation and deregulation is to ensure that network users make commercial decisions driven by competitive considerations. Where, for example, balancing rules are not well designed, although shippers may be responding to the requirements, they may not deliver the desired outcomes. In this case, it is better for regulators to focus upon improving the balancing rules to deliver sufficient incentives or to address any flexibility considerations.

#### Determining "Balancing Rules"

Ideally, each shipper should control balance for its customers and inputs, which, over the relevant balancing period, would result in an aggregate balance over the same period. However, for the reasons set out above, there may be situations whereby shippers fail to balance over the relevant period. In these circumstances, clearly an independent system operator is the party best able to identify aggregate imbalances and take corrective action where necessary. In this context, it is useful to understand under what circumstances and in what form a TSO should take actions to restore balance to the system?

This question has two perspectives, first the technical operational features of the transportation system and, secondly, the nature of flows made by shippers. Importantly, on this second point, it is necessary to understand that in establishing decisions on the TSO's role, this will potentially impact/impede shipper's incentives and the availability of flexibility. This highlights that an appropriate balance be struck between TSO and shipper responsibilities.

#### Operational Issues

As mentioned earlier, transportation systems have an in-built ability to tolerate (within certain thresholds) the amount of gas (linepack) within the system. The range of available line-pack will vary depending on a number of factors, including the starting levels within the system, demand conditions etc. In addition, linepack availability has locational and temporal elements related to the different timing or location of inputs and offtakes. But in all cases, there are upper and lower thresholds (albeit moving) for maintaining the integrity of pipelines at certain pressures.

One of the most important choices regarding balancing rules is the frequency of balance. There is an important link between the availability of linepack and the choice of balancing period. It would be useful to understand the nature of this interaction, which can help to determine indicate, at least from a purely operational perspective, an appropriate frequency of balance.

The simple example below highlights different situations to demonstrates the point:

	Period 1	Period 2	Period (1+2) totals
Net inputs	100	140	240
Net offtakes	150	100	250
Net Balance	-50	+40	-10

In the table above, in period 1, the TSO faces an imbalance between net inputs and net offtakes of -50. In period 2, it faces an imbalance in +50. The question is over what period should the TSO balance the system? On the one hand, if the TSO did not have sufficient linepack available then the TSO would have to undertake balancing actions to restore balance in each period. On the other hand, if the TSO were able to utilise linepack safely (i.e. the network could tolerate the imbalances of -50 and +40 at the given demand) this would imply that the system could safely cope with the imbalance positions. Therefore, from a TSO's perspective because the system could tolerate a balancing period that covered both periods 1 and 2, it may not be necessary to require balancing in both periods.

Note however, in the above example, that if the balancing period covered both periods 1 and 2, that the net imbalance over this period would be -10. This implies that there is a shortfall in gas (more was offtaken than input) over the relevant balancing period, which would imply an action by the TSO to alter the imbalance position in the relevant period by either increasing supply or reducing demand at offtakes. This helps to draw a possible distinction between linepack and balancing actions, as linepack does not imply pro-active actions to change to offtake and inputs profiles but describes the ability to accommodate supply and demand differences, whereas balancing implies specific action changes to supply and demand.

If the TSO cannot utilise linepack between period 1 and 2, then it would undertake a balancing action in each period. As outlined in later in the following sections, shippers should, in theory, face the appropriately targeted and (efficient) costs of the balancing actions taken by the TSO ([section X below discusses relevant methodologies for charging for imbalances]).

#### Commercial issues

The discussion in above noted that incentives play an important role in determining shipper's decisions. In the example above it was argued that the available linepack buffer is an important driver of the choice frequency of balance. If a system is not able to cope with imbalance positions for a particular duration of time, e.g. a daily period, then it suggests that more frequent balancing periods might be necessary. On the other hand, if the system is able to cope, through the use of linepack and other tools, this could justify longer balancing periods. However, this discussion is made from a purely operational sense. The choice between daily and shorter balancing periods also impacts on shippers. Indeed, the CEER believes that where shorter balancing periods are imposed on shippers, equally adapted tools and flexibility services should be made available<sup>4</sup>.

In the above example, if the choice were to offer daily balancing, then effectively any shipper in daily balance though with different input and offtake profiles within-day would effectively be

<sup>4</sup> GTE has noted that particular attention should be paid to locational issues when designing commercial balancing rules. If the balancing obligation put on the shippers were not designed consistently with the physical balancing needs of the TSO on a geographical basis, notably taking into account the physical capacity constraints on the network, it might lead to increased balancing costs and risks for the TSO and for the TSO and final customers. The CEER believes that locational issues are one factor among others that need to be taken into account both on the basis of commercial and operational considerations. Though equally the CEER would wish to ensure that in the long-term any constraints that may exist on a TSO's network are adequately resolved (where efficient) and do not act to constrain balancing rules where this is not the most efficient organisation of the market (i.e. balancing rules should not be constrained simply by virtue of necessary incentives are not in place elsewhere on the network).



obtaining linepack without directly being charged<sup>5</sup>. However, the availability of linepack is a scarce resource. And to the extent that shippers value this service but are not charged its use, theory would tend to suggest that linepack will therefore be over-utilised (i.e. there may be significant within-day imbalances by shippers even if they are able to maintain a daily balance). Demand for linepack in excess of available supply with no means to ration that demand, for example through prices, necessarily implies that the system will be unable to cope with net input and offtake imbalances within-day – therefore the TSO will have to undertake balancing actions and because shippers may be in balance over the day, it will not be possible to target these costs to the shippers contributing to them.

It is possible to point to practical experiences in the GB, where a daily-balancing regime applies, but where Transco has sometimes taken balancing actions to address within-day imbalances due to profiling by shippers. The question is whether a daily balancing regime in this case is sufficient to ensure that shippers do not over-utilise linepack or whether it needs to be complemented by additional rules concerning within-day profiles or shorter balancing periods?

Given the different stage of development and nature of the gas and electricity markets in GB, including for example the importance of gas generation in UK, it is not necessarily the case that what is introduced in GB should be adopted elsewhere. And clearly the choice of balancing period should relate to the materiality of the problem. This latter point is important, as moving to shorter balancing periods necessarily places greater burdens on shippers to procure greater flexibility. It also entails additional mechanisms to measure input and offtake profiles within-day. The essential point from the above analysis, however, is that “operational assessments” of relevant balancing periods do not provide the complete picture, full account needs to be taken on the likely incentives and the ability (and cost) of shippers to respond to shorter balancing periods, based on a realistic assessment of available flexibility.

In general it is likely that a daily balancing period is most appropriate. Indeed Ofgem’s recent decision to maintain daily balancing recognised that the concerns regarding security of supply and profiling behaviour were not considered a sufficiently large concern to justify the costs of introducing a higher frequency of balance. However, it was noted that continued evolution of the GB market needed to be monitored.

**Principle 3: Frequency of balance:** The choice of an appropriate balancing period clearly needs to be based on a balanced assessment of a number of objective criteria. These should include:

- the operational capabilities of the transportation system to balance the system;
- the inherent flexibility and tools to balance that market participants have over the relevant period; including the availability of linepack services;
- the interaction of balancing period with effective commercial incentives to balance, in particular interactions of shorter balancing periods in electricity markets with potentially longer periods in gas;
- availability and accuracy of the information over the relevant period;
- the costs imposed by particular balancing regimes, for example the requirement more regular information flows over shorter balancing periods; and
- nomination procedures complementary to the frequency of balance.

<sup>5</sup> This fits with the lack of TPA to linepack services, whereby there is currently no TSO in Europe that has a clearly identified linepack service with published tariffs

### Balancing costs, imbalance charges and incentives

The section above discussed the need for there to be effective mechanisms placed on shippers to incentivise them sufficiently to balance their own inputs (offtakes) of gas. It is generally accepted industry practice that this should take the form of charges for energy imbalance, by targeting costs wherever possible to those who are 'out of balance'.

#### Balancing costs

**Principle 4a: Balancing costs:** TSO's should have commercial incentives to ensure that the costs of balancing actions and associated operational costs that the TSO incurs are efficient. However, the regime needs to ensure that the TSO remains broadly cost-neutral in relation to the balancing actions it takes so that any revenues or costs provide correct incentives in relation to the timing and size of balancing actions.

As stated above, TSOs should be able to recover from Network Users the costs incurred in undertaking balancing actions. In addition, it should be allowed to recover from the generality of Network Users those balancing costs, which cannot be targeted to Network Users who are out of balance provided that:

- The costs are efficiently incurred; and
- The method of cost recovery is non-distortionary and non-discriminatory.

In addition, TSO should generally be cost-neutral with respect to balancing, this is to ensure that the balancing rules do not create incentives or disincentives to incur costly balancing actions. The balancing rules should ensure that the TSO actually responds to the need to physically balance in an efficient manner<sup>6</sup>.

For Member States where the TSO is prevented from accepting bids and offers for balancing gas as a means to balancing the system requires that the TSO contract for gas in other ways, often on a long-term basis for storage or contracts with shippers. In these circumstances balancing actions may not always occur for every balancing period, but these TSO's may need to have storage or contracts on stand-by. In these circumstances, there is a question as to how these costs should be charged back to shippers and it is important that non-discriminatory methodologies are adopted.

#### Determination liability for imbalance position

**Principle 4b: Charges for imbalances:** Charges for imbalances should aim not to distort competition and/or trading activities in wholesale gas and storage and flexibility markets. A well designed "cash-out" regime should ensure that there are appropriate commercial incentives on shippers to balance their inputs and offtakes, such that, in aggregate the participants of the system face strong incentives to physically balance the system in an efficient way. Charges for imbalances should be non-discriminatory. In particular, there should also be accurate targetting of system balancing and operation costs to those participants that caused them to be incurred. Any costs that cannot be targeted should be allocated back to shippers in a non-discriminatory manner.

<sup>6</sup> GTE has suggested that there is potentially a contradiction between cost-neutrality and providing incentives to minimise the total costs of balancing. However, a number of regulators currently apply mechanisms to achieve a practical balance between these two objectives under price controls.

An issue that has been raised in the Madrid Forum is whether balancing charges based on costs would provide a sharp enough incentive on shippers. One response would be to impose sufficient penalties, however, this could be detrimental to competition, as the burden of risk on a new entrant with a small portfolio would be excessive. It also seems undesirable to penalise shippers where those penalties bear no relationship to the costs to the TSO of acting to address the net imbalances that the individual shipper may have caused.

In addition, where the balancing regime does not realistically fit with available flexibility on demand and supply-side, it would appear that shippers are being penalised for imbalances they cannot remedy. This will be of particular concern, where incumbent shippers are able to gain access to flexibility services that are not available to other shippers, including new entrants and smaller players. In this sense, charges for imbalances can importantly act against competition.

#### Tolerance and flexibility

The discussion in previous section highlighted that linepack buffers can enable some tolerances of imbalance positions, in certain circumstances the availability of linepack might be insufficient to specify a daily linepack service, however, it might be possible to offer some flexibility or tolerances.

First, there is a need to ensure that tolerances are non-discriminatory, for example, that shippers do not gain an undue advantage due to portfolio size. In particular in the early stages of market opening, tolerance services could be tailored towards facilitating competition, at least until sufficient numbers of new entrants have entered the market.

In general, however there are a number of permutations for providing tolerance or additional flexibility. Therefore, it seems appropriate to establish some principles for tolerances e.g. temperature correction.

It should be noted however that an underlying assumption in relation to the provision of tolerances for imbalance positions, is that overtime the level of linepack will remain broadly stable within the appropriate thresholds. However, by definition, where over time linepack is either depleting or being replenished, the TSO will eventually have to undertake a balancing action. And the costs incurred in undertaking this action will not be targetted to the shippers, as it is as a result of tolerance or flexibility, i.e. deferring balancing actions to later periods.

Clearly, the tolerances have the advantage of providing some simplicity to shippers. However, there is certainly a concern if the size of these smeared balancing costs used to offer tolerance services are significant and unduly distort shipper incentives.

One concern, in providing a tolerance allocation to each shipper is that they will utilise tolerance services that they would otherwise not require. There could be strong incentives to do this, for example, in GB where shippers provide offers to the balancing mechanism to introduce gas into the network. Clearly with generous tolerance provisions, an unintended consequence could be that shippers use these free tolerances to provide short-term balancing gas for the TSO.

However, for less mature markets there appear to be real competition benefits in providing certain tolerances. To overcome some of the concerns regarding the "overuse" of tolerance services by shippers that do not need them, it could be possible to enable the trading of tolerance allocations between shippers.

The above discussion suggests the following principle:

**Principle 5: Tolerance "services":** Tolerance services in particular for less mature or less liquid markets is a useful tool to facilitate competition and a pragmatic means to handle some of the uncertainties surrounding balancing. Where offered, tolerance levels shall be designed in a way which, reflect the actual technical capabilities of the transmission system for

example taking into account daily effective temperature: However, particular account should be taken of the extent to which tolerances may be utilised by shippers to offer "balancing gas" or cause balancing costs to be incurred by the TSO that are subsequently socialised. Therefore, careful consideration is in sufficiently liquid and developed markets of the necessity of tolerances where this leads to a significant socialisation of imbalance costs. In any case, the secondary trading of tolerances should be permitted.

### Netting of imbalances

Ignoring the discussions in relation to the use of linepack, the costs incurred by TSO to resolve net imbalances occur when it has to take or request action to physically change inputs and offtakes by shippers. Therefore, shippers should be able to trade imbalances. There is a question whether it is preferable for this to take place through a centrally organised point such as a bulletin board. Nevertheless, the TSO will need to organise its operations to facilitate the netting of imbalances.

The potential beneficial impacts of ex post trading include:

- The netting of offsetting imbalances allows shippers to avoid cash-out prices. This improves cost targetting as it is only the aggregate imbalances that result in system balancing actions; and
- The ability of shippers to react to changes in information – ex post trading allows shippers to correct their balancing positions following the receipt of improved information about actual allocations.

These points suggest that (ignoring timing mismatches and transportation constraints) offsetting imbalances that net off should not have any impact on the aggregate system balance and should not lead to any balancing costs being incurred by the TSO. Ex post trading allows the aggregate shipper exposure to trading imbalances to better reflect the actual residual balancing actions undertaken by the TSO.

The potential downside is that ex post trading allowing shippers to avoid the need to trade out positions before the end of balancing period may impact on the liquidity, as shippers with long or short positions that would otherwise aim to offer surplus gas delivered to the system or to purchase any shortfalls would instead rely on ex-post trades. Lower liquidity in turn may increase the balancing costs for the TSO. On the other hand, the strongest case for ex post balancing may be where there is relatively limited gas market liquidity as it maximises the flexibility to shippers<sup>7</sup>.

### Sharpness of incentives

Related to the above point, an issue that has been raised in the Madrid Forum is whether balancing charges based on costs would provide a sharp enough incentive on shippers. One response would be to impose sufficient penalties, however, this could be detrimental to competition, as the burden of risk on a new entrant with a small portfolio would be excessive. It also seems undesirable to penalise shippers where those penalties bear no relationship to the

<sup>7</sup> With respect to trading of imbalances, GTE has argued that the possibility to pool together their imbalances on an "ex-ante" basis should be permitted provided the responsibility of balancing vis-à-vis the TSO is clearly allocated to one specific legal person and subject to appropriate check of creditworthiness of that person. GTE did not support ex-post trading on the basis that it might blunt incentives. In reaction, CEER would argue that the GTE prerequisites in relation to creditworthiness, would probably be handled via relevant network access agreements, which would cover, among others, relevant rights and responsibilities in relation to balancing. However, the CEER does agree that (to the extent that this is the intention of GTE's wording), for the trading of imbalances vis-à-vis the TSO, each party remains responsible for its imbalance position until the net imbalances that result from pooling actually occur.

costs to the TSO of acting to address the net imbalances that the individual shipper may have contributed to.

In addition, where the balancing regime does not realistically fit with available flexibility on demand and supply-side, it would appear that shippers are being penalised for imbalances they cannot remedy. This will be of particular concern, where incumbent shippers are able to gain access to flexibility services that are not available to other shippers, including new entrants and smaller players. In this sense, charges for imbalances can importantly act against competition.

### Transparency and Information

**Principle 6: Information and transparency:** Market participants shall be provided with sufficient, well-timed and reliable information about their balancing status and imbalance charges to be updated on at least on a daily basis and in function of the balancing period applied, where such information can be provided at reasonable costs. Information on imbalance positions shall allow system users to take timely corrective actions.

Clearly any well functioning balancing regime requires information to flow between parties in an efficient and effective manner. Ideally, the TSO needs to know well in advance possible imbalance positions supply and demand for a particular period in order to take timely corrective actions. Timely information may also assist in improving the efficiency of balancing actions.

In addition network users need to have access to information regarding their likely imbalance positions. There are a number of complexities regarding balancing rules and responsibilities. For instance, in some countries for certain classes of customers (e.g. small industrial and domestic customers) the TSO is responsible for forecasting demand and calculating nominated demand (on behalf of shippers) for these loads. In some of these countries, the TSO may also update these nominations throughout the day in light of forecast weather or other conditions. As it is the shippers responsibility to remain in balance, clearly they need timely information on these forecasts and any updates. After the trading periods there are also reconciliation processes that occur as better information becomes available due to meter readings on actual use.

Where nomination is not delegated as a TSO responsibility or for example shippers have some choices regarding whether to rely on TSO forecasts or their own information, it is important that the rules permit shippers an appropriate level of flexibility to renominate as new information becomes available. Shippers should also act to provide information, that in their opinion, is an accurate reflection of their intended use.

GTE has also noted that the information that the TSO disseminates will be dependent on the quality information provided by other parties. For example, responsibility for collecting and forwarding electronically read meters may lie with network users. In such circumstances, an appropriate balance needs to be struck regarding the responsibility for timely and accurate information inputted to TSO. However, the TSO should also compile this information accurately (to the extent possible based on the quality of the information it may receive).

### Bench-marking of existing rules or practices in Member-states

The European Commission's compliance report with the Madrid Guidelines, illustrated the considerable differences between MS's treatment of gas balancing and storage (refer to Appendix 1). For some Member States imbalance energy is charged at a multiple of the

wholesale price without reference to market mechanisms. According to the Commission's compliance report these multiples range from 1.5 to over 9 depending on the country and the circumstances.

It should also be noted that some TSO's are actually restricted (by law) in the tools available to them to balance the system. Equally, other shippers do not have sufficient flexibility tools.

In general the benchmarking exercise conducted by the Commission shows a diversity of approaches. Based upon the principles suggested in this report, it is possible for a diversity of approaches to co-exist. However, a number of network users in various discussions have complained that balancing rules in certain Member States are too onerous. Therefore, it would be a useful exercise in the Commission's next benchmarking study to consider whether these balancing rules comply with the new principles suggested for the guidelines for good practice. In addition, the diversity of approaches potentially acts as a barrier to trade between Member States. This is discussed in more detail in the next section.

### **Analysing the need for harmonisation**

The Commission's second Benchmarking Report<sup>8</sup> stated that one of the most significant barriers to the development of competition is balancing regimes that are unnecessarily stringent, being non-market based and not reflective of the costs incurred. The guidelines for good practice outlined a range of important recommendations for gas balancing to ensure non-discrimination between related undertakings and third parties, avoid potential distortions to trade, and facilitate efficient use of the gas network, gas market liquidity and trade across borders of different TSO systems.

The CEER recognises the diverse range of balancing rules operated amongst Member States and the corresponding degrees of competitive market opening and national specificities. As a first step to reducing the barriers for new entrants across Europe, market participants need to consider the harmonisation of principles for gas balancing that complement the GGP.

One has to take into account that without harmonisation the balancing regimes could potentially negatively impact upon each other. However, the need for harmonisation should be based around an objective assessment of the impacts of these differences. And this assessment must also take into account that a top-down harmonisation may resolve some of the problems for cross-border trade but may create others.

Indeed building on the existing principle of the guidelines for Good Practice the CEER recommends the following:

**Principle 7: Harmonisation of balancing rules:** TSO's should ensure compatibility of balancing regimes (tolerances, imbalance charges etc.) in order to facilitate gas trade across borders of different TSO systems. European TSOs shall endeavour to harmonise balancing regimes and streamline structures and levels of balancing charges in order to facilitate trade. Where it is justified that balancing regimes (tolerances, imbalance charges, balancing periods etc.) remain different between interconnected networks, standardised agreements and procedures between TSOs should be put in place in order to facilitate gas trade. Such arrangements shall be published and notified to the relevant regulatory authority.

<sup>8</sup> Commission Staff working paper: "second benchmarking report on the Implementation of the internal electricity and gas market", SEC(2002)1038, 02 October 2002.



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This principle recognised that the diversity of approaches potentially acts as a barrier to trade between Member States. The CEER therefore suggests that GTE (in consultation with network users) to conduct an analysis of the possible barriers to cross-border trade resulting from different balancing rules; and whether existing practice are sufficient or further solutions are required, in particular in light of the re-organisation necessary under the 2nd Gas Directive.

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