



Gas Balancing
An EREG Discussion Paper
For Public Consultation

2005-07-18

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Chapter 1: Introduction

a. Background

Gas balancing has a key role to play in underpinning the development of an effective competitive market. A well functioning gas balancing regime provides appropriate incentives to market players that help ensure the efficient and safe operation of the gas transportation system and that adequate gas supplies are made available to consumers. If the balancing regime does not operate effectively (for example, the availability and transparency of information is not sufficient) there is a risk that market players will make decisions that lead to higher costs for consumers, that barriers to entry are created and possibly that security of supply is threatened.

In order to help ensure that gas balancing arrangements support the development of a competitive market the CEER¹ produced a set of high level gas balancing principles to be used by national regulatory authorities (NRAs) and transportation system operators (TSOs) to design gas balancing regimes. It was originally intended that these high level principles would form part of the Recommendations on Guidelines for Good Practice (GGP) for access to transportation – which were adopted at the 5th meeting of the European Gas Regulatory Forum (The Madrid Forum) on 7-8 February 2002. They were not included in the GGP as it was felt that they needed to be developed further and subject to additional consultation with stakeholders.

CEER published its gas balancing principles in September 2003.² These were designed to establish a robust set of principles in relation to the roles and responsibilities for the industry as it restructures to meet the requirements of the second Gas Directive.³ The balancing principles proposed by the CEER were intended to promote competition and liquidity in the European gas market. The CEER report recommended that it would be important to understand how differences in balancing rules may act to distort trade between Member States. It also suggested that further work be undertaken to better understand difficulties and potential barriers in different balancing systems and to identify possible solutions to overcome these.

¹ The Council of European Energy Regulators (CEER) is a “not for profit association” which brings together the independent national energy regulators from the Member States of the European Union (EU) and European Economic Area (EEA).

² CEER “Principles for Balancing Rules” September 2003 <http://www.ceer-eu.org>

³ Directive 2003/55/EC concerning the common rules for the internal market in natural gas and electricity of 26 June 2003

The recently adopted Gas Regulation⁴ on conditions for access to the natural gas transmission networks includes Articles in relation to gas balancing and imbalance charges. These specify high level requirements for gas balancing regimes including for example the need to ensure that balancing rules are fair and non-discriminatory. The annex to the recently adopted Gas Regulation includes more detailed guidelines on certain issues such as third party services but does not include gas balancing. The Gas Regulation will come into force on 1st July 2006.

The 2004/5 CEER workplan identified gas balancing as a priority area of work and a Task Force was created to take the work forward. This has been chaired by Ofgem. Although the work on gas balancing has been taken forward initially by CEER this consultation has been produced by ERGEG⁵. This is because ERGEG is responsible, under the Commission Decision of 11 November 2003, for providing advice on regulatory issues to the Commission.

NERA and TPA Solutions (NERA/TPA) were commissioned to review the existing CEER gas balancing principles under funding provided by the Belgium energy Regulator, CREG. They also spoke to a wide range of market participants (TSOs, incumbent shippers, new entrants and regulators). A high-level review of the existing gas balancing regimes in Belgium, the Netherlands, France, Great Britain, and Spain was also undertaken. They were selected as being reasonably representative of gas balancing regimes across Europe.

⁴ Regulation on conditions for access to the natural gas transmission networks as adopted by the Council on the 12th July 2005 (soon to be published in the Official Journal).

⁵ The European Regulators Group for Electricity and Gas (ERGEG) acts as an advisory group to the European Commission. ERGEG comprises Members (who are the Heads of regulatory authorities in Member States) and Observers (Norway, Iceland, the ten new Member States and the three candidate countries, Bulgaria, Romania and Turkey) as well as representatives from the European Commission.

b. Purpose of this document

This document:

- Explores issues associated with gas balancing, including linepack, and identifies problems that may exist in the design of existing balancing regimes; and
- Reviews and suggests some improvements to the existing CEER gas balancing principles.

A final view on changes to the gas balancing principles will be published before the end of 2005. These principles will then be used by ERGEG to develop more detailed guidelines for good practice for gas balancing in 2006 - which will be informed by transparent consultation with stakeholders consistent with the procedures published by ERGEG in August 2004.

The document is structured as follows:

- ♦ **Chapter 2** – introductory information on the way in which gas balancing regimes are designed and how they differ across Member States;
- ♦ **Chapter 3** – identifies possible distortions and problems within existing gas balancing regimes;
- ♦ **Chapter 4** – suggested changes to the existing CEER gas balancing principles;
- ♦ **Annex 1** – key questions for stakeholders;
- ♦ **Annex 2** – detailed information on the design of gas balancing regimes across Member States; and
- ♦ **Annex 3** – describes the requirements in relation to gas balancing that are included in the recently adopted Gas Regulation on conditions of access to natural gas transmission networks.

c. Invitation to Interested Parties to Comment

ERGEG invites stakeholders to comment on issues raised in this paper and in particular on **the suggested changes to the CEER existing gas balancing principles and the key questions summarised in Annex 1.**

Responses should be received by **26 September 2005** and sent by email to:
gasbalancing@ergeg.org.

Any questions on this document should, in the first instance, be directed to:

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Unless marked as confidential all responses will be published by placing them on the ERGEG website. If there is anything confidential please include it in a separate annex to your main response.

Chapter 2: Description of gas balancing regimes and approaches

a. Gas balancing: an overview

For gas to be safely transported through a pipeline system, the party organising the shipping of gas must be able to input to the network through an entry point and make arrangements for the exit of that gas elsewhere. These gas inputs and “offtakes” must be in balance within certain thresholds. In general, if the amount of gas taken off the network is higher than the amount put into the network, this will lead to a reduction in pressure. As pressure falls (increases) there is an increasing threat to network integrity. Ultimately, network failure is possible if pressure is allowed to continue to fall (increase). At its simplest level, the process of gas balancing is used to ensure that what goes into the pipeline system comes out, i.e. that inputs equal outputs – it is a core and crucial aspect of any gas transportation regime. Prior to the introduction of the second Gas Directive, and the separation of gas trading, shipper and transportation activities, the responsibility for ensuring that the network was in balance typically resided with an integrated gas company. When there was a difference between aggregate inputs and offtakes it would take steps (either increasing or decreasing the amount of gas in the network) in order to maintain overall system balance.

As the industry has restructured to meet the requirements of the second Gas Directive – with the separation of roles and responsibilities – the need for market rules for gas balancing has become crucial to the development of the competitive market. Each gas shipper is responsible for controlling how much gas it inputs into the pipeline system and for monitoring its customers’ offtakes, i.e. the shipper is responsible for ensuring that there are adequate gas supplies. The gas balancing regime (if well designed) will provide appropriate incentives to gas shippers to balance their individual portfolio of supply and demand. This means that shippers (i.e. the market) have the **primary responsibility for gas balancing**. The transportation system operator (TSO) still retains an important **residual role** to ensure that gas pressure remains within acceptable thresholds – i.e. if there remains a difference between aggregate inputs and offtakes. It is through the *interplay of both shippers and the TSO* that overall system balance is maintained.

Figure 1: System Balancing

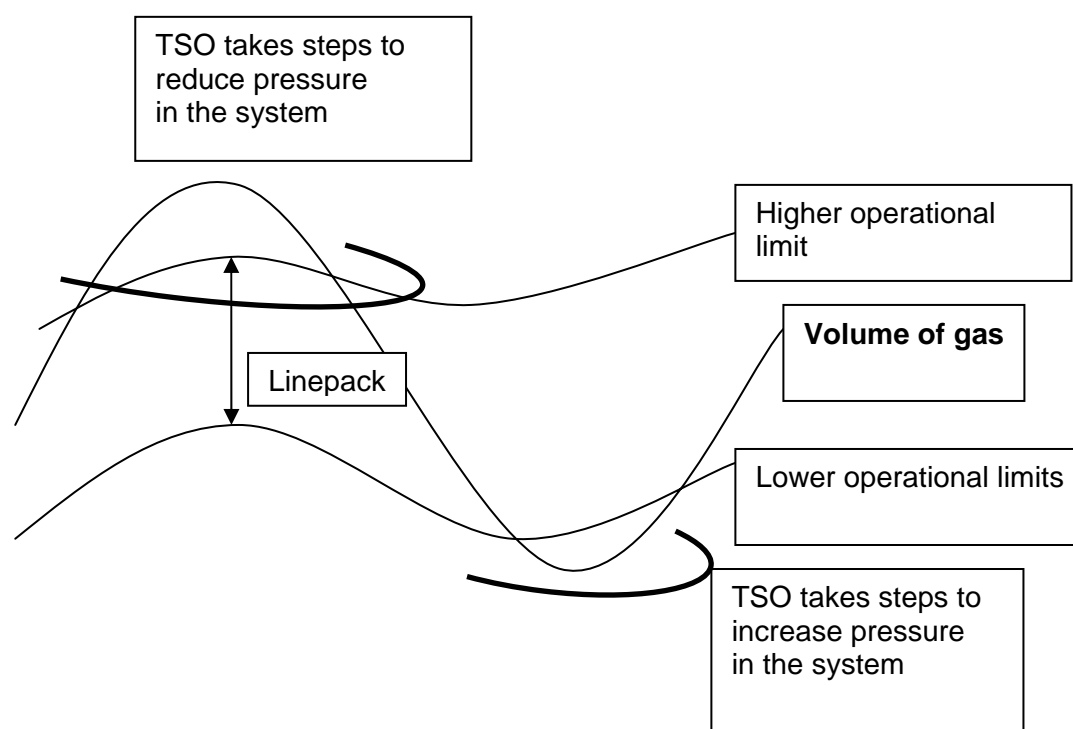


Figure 1 shows how gas balancing works in broad terms. Over the course of the day the TSO will monitor the network to ensure that it is in balance (the period of time over which pipelines are required to be in balance can vary – typically they are daily but they can be shorter or longer – this is known as the “balancing period”). Under a well designed gas balancing regime the incentives provided to shippers to balance their own supply and demand portfolio (**i.e. ensuring contractual or commercial balance**) would limit the residual role of the TSO to maintain overall system balance (**i.e. ensuring the physical balance of the network**).

If the commercial (balancing regime) and physical (actual network) arrangements were perfectly matched and shippers maintained their own demand-supply balance the residual role for the TSO would not be needed, i.e. the volume of gas in the network would always be within the upper-lower operational limits. In reality this is not always the case. Due to weather, unplanned gas production restrictions and other uncertainties (i.e. supply and demand changes) it is not feasible to require

every shipper to nominate exactly and to be in balance at all times. It is also inevitable that the physical system and commercial model will not be perfectly matched over time.

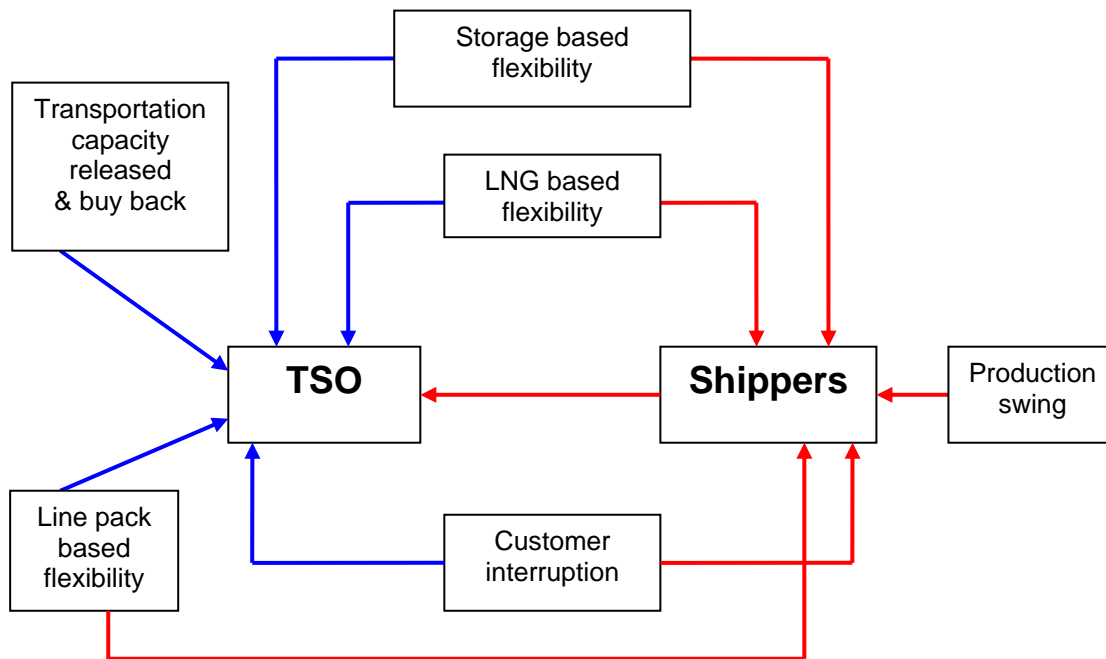
The ability of a shipper to manage its supply-demand portfolio and of a TSO to manage the physical balance of the system come from a number of sources (i.e. they utilise **sources of flexibility**):

- Production sources (or production swing), e.g. LNG;
- Access to gas storage facilities that can inject or withdraw gas from the network as required;
- Services from the TSO (or incumbent supplier) that can mimic gas storage, such as linepack in the pipelines (i.e. storage within pipelines);
- Trading with other parties;
- Demand side management such as interrupting customers;
- Contractual swing (including through interconnectors)

The steps that the shipper can take to manage its supply-demand balance are not necessarily sufficient to ensure that the overall system is in balance. The TSO will need to take steps to ensure that overall system balance is maintained and will typically utilise available linepack in the pipeline or other tools (Figure 2).⁶

⁶ Some of the sources of flexibility will be “open” to all parties to use – however some may be reserved for use solely (or a proportion) by the TSO (e.g. linepack).

Figure 2: Some sources of flexibility for TSOs and shippers



If the incentives provided to shipper are not appropriate or the commercial-physical system is not well matched it is likely that the TSO will need to make more frequent (and potentially more costly) interventions to maintain overall system balance.

b. Characteristics of a typical gas balancing regime

This section describes the key characteristics of a typical gas balancing regime. This is not an exhaustive description and may not be representative of gas balancing regimes in different countries but sets the problems and issues in context.

Nominations on inputs and offtakes – shippers have responsibility for managing how much gas they put into the system and for monitoring how much gas their customers take off the system. They can face regulatory, contractual and commercial incentives to provide the TSO with accurate information about their intended inputs and offtakes for the relevant balancing period. Shippers can be allowed to re-nominate their inputs and offtakes but some gas balancing regimes feature a

“**gate closure**” arrangement by which shippers are not expected to make further adjustments after a given deadline. Some regimes also include an incentive on shippers to match their actual inputs and offtakes to their actual nominations (**scheduling charges**) and an incentive to provide the TSO with an accurate forecast of its intended imbalance position at the end of the balancing period.

Incentives to shippers to balance within the specified balancing period – once nominations have been made shippers’ inputs to and offtakes from the system are metered (or allocated) at the end of each balancing period. Where a shipper has an **imbalance position** it can face an **imbalance charge (or cash-out price)** payable to the TSO as the residual gas balancer. This charge can vary depending on whether the shipper is long on their gas (inputs exceed their offtakes) or short on their gas (offtakes exceed their inputs) at the end of the balancing period. The imbalance charge is determined in different ways in different balancing regimes.

Balancing zones – the gas transportation system typically comprises of one (or more) balancing zone(s) within which the rules of the respective balancing regime apply. More than one balancing zone may be in place to reflect the operational capabilities/characteristics of different parts of the gas transportation system.

Access to sources of flexibility (e.g. linepack) – in order to manage their supply-demand position and for TSOs to take steps as the residual balancer it is important that there is access to sources of flexibility – for example allowing shippers access to linepack over-and-above that used by the TSO in its role as residual balancer. The degree and nature of this access can vary across different gas balancing regimes.

The balancing period – the balancing period defines the period of time over which shippers are required to be in balance. It is driven by a number of different factors including the operational capabilities of the transportation system to balance the system and the availability and level of flexibility tools that can be utilised by market participants over the relevant period. The balancing period will therefore vary across different balancing regimes.

Information flows – it is important that market participants are provided with sufficient, well timed and reliable information about balancing positions and imbalance charges – although the quality and transparency of this information does vary across different gas systems.

Tolerance levels – some regimes include tolerance levels within which shippers do not face charges if they are in imbalance at the end of the balancing period. This can be because access to flexibility tools and availability of information on imbalance positions is such that shippers find it difficult to adjust their positions within the balancing period. The size of tolerance levels varies across different gas balancing regimes.

Pooling and trading of tolerance levels and imbalance positions – some regimes also allow shippers to pool or trade their tolerance levels (or imbalance positions) either on an ex ante or ex post basis which can provide shippers with more flexibility in managing their imbalance positions - shippers acting in aggregate may be able to act more efficiently than a shipper acting on its own.

TSOs role as the residual balancer – the TSO has an important, residual role, to ensure that overall system balance is maintained. This involves ensuring that pressure in the pipeline is kept within the defined thresholds. Some regimes include incentives on the TSO to efficiently manage the costs of taking these residual balancing actions steps, although regimes differ to the extent that the costs are recovered from those shippers that give rise to the imbalance.

c. Gas balancing across Member States

There is diversity across the EU in terms of the detailed characteristics of gas balancing regimes explained by a range of factors:

- the extent of market liberalisation - influences the commercial structure of the national market and the underlying requirements of the balancing regime. The design of the balancing regime needs to take account of the trade-off between cost-reflectivity and the promotion of competition. The most appropriate trade-off will be influenced by the level of competition already apparent and the physical characteristics of the transportation system. As competition in a market develops the balancing arrangements may need to be developed and adapted.
- the different physical characteristics of the market are important when considering the design of the gas balancing regime, including:
 - Availability of storage (provision of flexibility);

- Availability of LNG;
- Availability of linepack within the gas transportation system; and
- Services from shippers, producers or end customers to vary inputs or offtakes as and when required.

Summary of questionnaire results

The CEER circulated a questionnaire to members to collect information on balancing rules. This shows clear differences across Member States. Whether these differences between (neighbouring/connected) gas systems create undue barriers to trade is discussed in Chapter 3.

A **high level summary** of the key characteristics of the various balancing regimes is in Figure 3. Further details are in Annex 2.

Figure 3: High level summary of gas balancing regimes across Member States

	Balancing period	Conditions set/approved by	Tolerance bands	Pooling and trading allowed
Austria – for domestic transportation⁷	Hourly	Market	No	Ex-post
Belgium	Daily	TSO/regulator	10%	Ex-ante
Denmark	Daily	TSO/regulator	15%/5% - of the daily quantity	Ex-ante
France	Daily	Regulator	20%	Ex-ante
Germany⁸	Hourly	TSO	various	Ex-post but varies across systems
Ireland	Daily	TSO/regulator	3%	Ex-post
Italy	Daily	Regulator	8%; 6000 Gj ⁹	Ex-post
Luxembourg	Daily	TSO/regulator	5%/3%	Ex-ante
Netherlands	Hourly/Daily	Regulator	13%/2% ¹⁰	Ex-ante, ex-post with penalty
Spain	Daily	TSO/Ministry	N/A	Yes ¹¹
Sweden	Daily	TSO/Regulator	No	Ex-Post
UK	Daily	Market	Zero	Ex-post
Estonia	Daily	TSO	Yes	No
Latvia	Hourly	TSO	10%	NO
Lithuania	Daily	TSO	Yes	No
Poland	Daily	TSO	No	Ex-post
Czech Rep	Daily	TSO	Yes	No
Slovakia	Daily	DSO	±5%	Yes
Hungary	Daily	TSO/Regulator	±2%/±8% ¹²	No
Slovenia	Daily	TSO/regulator	Yes	Ex-ante

⁷ A “dual system” is implemented in Austria – there are different rules applicable for domestic transport and transit and as such there are different balancing rules for each system.

⁸ The legal framework in Germany is being amended due to the transposition of the Gas Directive.

⁹ Between 8% and 6000 Gj for users with no access to storage capacity.

¹⁰ The hourly tolerance is 13% and the operational margin for daily balancing is 2%.

¹¹ Shippers are allowed to make ex ante interchanges of gas for balancing purposes.

¹² If the shipper offers “balancing gas” for the TSO, the tolerance band is increased from ± 2% to the extent of the offer – but no higher than ± 8 (negative offers are also possible).

Chapter 3: Possible distortions and problems in gas balancing regimes

Well designed balancing regimes are essential to an effective and competitive European gas market. The safety, security and efficiency of the gas market can all be impacted upon by gas balancing regimes. Whilst not the only determinant of the success of establishing and encouraging traded markets, well designed gas balancing rules have a pivotal role to play in this regard.

There are some problems with the way in which gas balancing regimes are currently designed - with the potential to create barriers to entry and distort the development of competition. This Chapter identifies these problems and the impact that they could have on the market.

Process, consultation and transparency

Market participants feel that the process for deciding balancing rules are sometimes not sufficiently transparent nor supported by appropriate evidence and analysis. Shippers have argued that without a transparent process for developing balancing rules it is difficult to judge how decisions have been made and that the outcomes are objective and non-discriminatory. This can particularly be problematic where the incumbent supplier remains within the same ownership group of the TSO. There is a perception, particularly amongst new entrant shippers, that a lack of transparency could create barriers to entry in the form of balancing rules which favour the incumbent supplier. Even if the balancing rules do not favour the incumbent supplier, and are non-discriminatory and objective, the lack of transparency can create *the perception of a real risk* associated with market entry - and consequently a possible barrier to entry.

Developing an efficient balancing regime

There are a number of features (see Figure 4) that balancing regimes should include in order to provide efficient incentives to shippers to balance and for the TSO to take any steps in its role as residual balancer for the system.

Figure 4: Features of an efficient balancing regime

A requirement for the TSO to use transparent and non-discriminatory market-based procedures to procure the gas it uses for system balancing, backed up by a mechanism to incentivise the TSO to minimise the costs it incurs in carrying out its balancing function
Cost reflective imbalance cash-out prices, i.e. prices that reflect the costs to the TSO of correcting negative and positive shipper imbalances, with these costs defined objectively by reference to market based procedures
A balancing period, or frequency of balancing, that ensures shippers are generally held responsible for the costs they impose on the system, and avoids unnecessary balancing actions
Timely and accurate provision of information to shippers on their imbalance positions so that they can respond efficiently to the cost signals provided by the imbalance cash-out prices
Targeted recovery of the efficient net costs incurred by the TSO in carrying out its residual balancing functions
Revenue neutrality of the TSO's balancing operations to ensure the TSO's commercial incentives are aligned with its public service duty to ensure a safe and reliable system
Effective monitoring and enforcement of the non-discriminatory application of the rules by the TSO
The available linepack in the system, above the amount needed by the TSO for system security purposes, should be made available to shippers on a non-discriminatory basis through tolerances, additional flexibility services or "linepack inventory accounts" in order to make efficient use of the available physical flexibility in the system
Shippers should be allowed to trade any tolerances they are allocated and the TSO should have system in place to facilitate such trade
Provided cash-out prices are cost based, (and as an interim measure pending the development of liquid within day markets) shippers should be allowed to trade their imbalances ex-post prior to settling any residual physical imbalances and the TSO should have systems in place to facilitate such trade
The balancing regimes should be structured in a way that the incentives for shippers to balance do not create opportunities for abuse of the regime

Question (1):

Are there other features that should be reflected in a gas balancing regime to help ensure efficiency and to maintain safety and security of the system?

Not all of these standards are reflected in the existing CEER gas balancing principles - particularly requiring TSOs to use market based procedures to purchase the flexibility (including gas) they use for balancing; and making linepack available to shippers on a non-discriminatory basis.

Requiring TSOs to use market based procedures, where possible, to purchase the flexibility (including gas) they use for balancing could have a number of advantages including increasing transparency and efficiency in the balancing actions taken by the TSO. Utilising linepack in the system is one way that system and individual balance positions can be adjusted – it is particularly useful in managing short term fluctuations in the supply-demand position and therefore a key tool for TSOs in maintaining security on the system. Where linepack is available, beyond the requirements of the TSO, this could be made available to shippers to help them better manage their imbalance positions. This could reduce the frequency (and size) of the residual balancing actions taken by the TSO and improve the overall efficiency of the balancing regime.

Cash-out prices

At present, in some balancing regimes, shippers can face penalising cash-out prices (i.e. the cash-out price faced by the individual shipper can be significantly greater than the costs it incurs on the system by being out of balance).¹³ Shippers have argued that this is compounded, in some instances, by poor information flow on imbalance positions which makes it difficult to react in time to take corrective steps. The risk of facing penalising charges, and an inability to manage that risk effectively, can create a potential barrier to entry to the market. Shippers have also argued that incumbents are better placed to manage these risks if they have a larger and more diversified portfolio. However, if cash-out prices were cost reflective this could mean that shippers were neutral between being out of balance and taking corrective steps to get back in balance. Indeed, given that any corrective action would be likely to incur transaction costs – a rational shipper may leave the TSO take residual steps to balance the system rather than take corrective action itself. It

¹³ Where there is an absence of a market based mechanism for pricing flexibility, gas balancing regimes can include a variety of reference prices with multipliers and discounts applied to under-or-over delivery respectively.

seems appropriate therefore for cash-out prices to include *an appropriate commercial incentive* to balance – this incentive could become stronger (i.e. the cash-out price could be higher) the further away a shipper was from being in balance – although this may have a negative impact on shippers working off smaller portfolios and gas flows.

If shippers were also allowed to trade their imbalance positions, on an ex-post basis, this could lead to more efficient balancing regimes – although the incentives on *an individual shipper* to balance may be weaker the overall efficiency of the balancing regime could be improved.

Question (2):

Should the incentives to balance become stronger the further away a shipper is from being in balance or are there are other ways of ensuring that shippers have appropriate incentives to minimise their imbalance positions? Should shippers be allowed to trade their imbalance positions on an ex-post basis as a way of improving overall efficiency?

Balancing period

Some shippers have argued that in some instances the balancing period is too short – placing strain on the information systems supporting the balancing regime and unnecessarily increasing the risk to market participants – potentially creating a barrier to the development of competition.

The existing CEER gas balancing principles sets out the issues that should be considered in deciding on the appropriate balancing period. It would not be appropriate for the gas balancing principles to impose a “one-size fits all” solution. It is important however that decisions on the length of the balancing period are objectively justified in a transparent way – and that shippers and other market participants have an opportunity to contribute to the decision making process.

Question (3):

Does hourly balancing create any barriers to the development of competition?

Information flows

A wide range of market participants (including regulators) feel that are problems regarding information flows within balancing regimes. Issues have been raised both about the quality of the information and delays in the final allocation process. Problems of information flow can create unnecessary additional risks that market participants have to manage. If these risks become too large (or unmanageable without incurring significant cost) players may chose not to participate in the market. The problems of information flow can be exacerbated within hourly balancing regimes which tend to require more frequent information if shippers are to react to the balance position they find themselves in.

It is important therefore that market participants are provided with sufficient, well-timed and reliable information about their balancing status and imbalance charges. This is already highlighted in the existing CEER gas balancing principles – but it appears that there are remaining problems in some regimes. These could potentially be overcome by enhancing the existing principles and being more explicit about what information should be provided and how – for example TSOs could use provisional allocations to calculate imbalance charges which may go some way in reducing the level of uncertainty (and risk) faced by shippers.

It is also necessary to consider what other information shippers may require that goes beyond information on their own portfolio to include data on system demand-supply more generally. This may be particularly important in market based balancing arrangements so that shippers can anticipate and support the TSO in its role as residual balancer. It is also necessary to consider the interactions between electricity and gas and whether market participants in gas require information from the electricity market in order to take efficient and timely balancing actions.

It is also crucial that the relevant information is provided to *all parties* in a non-discriminatory way. Effective arrangements should be put in place to ensure that this is the case – particularly between the TSO and any affiliated supplier.

Question (4):

What information is required to ensure that gas balancing regimes operate effectively and efficiently and how often should this be provided? What is the best way of ensuring that this information is provided to all parties on a non-discriminatory basis?

Access to flexibility

Access to flexibility tools (particularly where there is not a well functioning, liquid within day market) is crucial if shippers are to take steps to correct any imbalance positions. It is also important that access is provided on a non-discriminatory basis on reasonable commercial terms. Indications from some shippers shows that access to ex ante flexibility is often limited and/or only available from an incumbent supplier at a high price. Improving access to flexibility is important in order to allow shippers to better manage their imbalance positions. One way of doing this would be to make linepack available to shippers on a non-discriminatory basis (and also to facilitate the secondary trading of linepack). Another option would be to allow shippers to trade imbalance positions on an ex post basis – at least until access to flexibility reaches a level that allows shippers to efficiently manage their imbalance positions.

Question (5):

Should linepack (where technically feasible) be made available to shippers on a non-discriminatory basis to improve access to flexibility? Are there any other steps that could be taken to improve access to flexibility that would not impinge on the safety and security of the system?

Tolerance levels

Some gas balancing regimes include tolerance levels within which shippers do not face charges if they are in imbalance at the end of the balancing period – these have been used where access to flexibility tools and availability of information on imbalance positions is such that shippers find it difficult to adjust their positions within the balancing period. The existing CEER gas balancing principles suggest that tolerance levels should be designed in a way which reflects the actual technical capabilities of the transmission system. They also point out that 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. If access to flexibility and information is improved it may be possible to *reduce the size of tolerance* levels with the aim of minimising them (as long as it does not impose undue levels of risk on shippers). This would strengthen and sharpen the incentives faced by shippers and therefore improve the overall efficiency of the gas balancing regimes.

Interactions between balancing regimes

In an increasingly integrated, and competitive European gas market, interactions between gas balancing regimes in different countries are likely to become more important. This does not mean that balancing regimes should necessarily be made consistent – the most significant factor is having regimes in place *in all Member States* that are transparent and well understood by all parties; that provide appropriate incentives to shippers to balance and for the TSO as residual balancer; and ensure system safety and security.

The detail of the individual regimes may differ because of the characteristics of the local transmission system but they should be designed with the same overall objectives in mind. The key question is whether any differences in neighbouring balancing regimes distort trade or incentives to shippers or have a negative impact on the safety/security of the transportation systems. For example, do differences in balancing periods between connected gas systems create undue barriers to trade?

There is also the question of whether, within a more integrated competitive market, the creation of cross-border balancing zones could facilitate trade more effectively than balancing zones that are constrained by national boundaries – particularly where there are differences between neighbouring balancing regimes. International (or cross-border) balancing zones could help with the development of regional markets. A first step could be to gain a better understanding of how any differences are impacting on cross border trade as explained and whether they should be made consistent. Any cross-border balancing zone would need to reflect the underlying technical characteristics of the connected gas systems and not impinge on the safe and economic operation of neighbouring systems. Any steps towards creating cross-border balancing zones would also need to be consistent with the prevailing legislative framework. It would also be necessary to consider whether cross-border balancing zones had an impact on the development of hub based trading.

Some other issues that arise from the interaction of balancing regimes are:

- ◆ *Information flows at cross-border interfaces* – some shippers have expressed concern about the level and quality of information flows for cross-border trade particularly where an hourly gas balancing regime meets a daily regime. One way of overcoming this would be to introduce Operational Balancing Agreements (OBAs) between neighbouring TSOs that would set out the way in which the balancing regimes would interact; the information that should be made available; and any special arrangements for dealing with safety and security issues. The OBAs should be developed and published in an open and transparent way; and
- ◆ *Arbitrage of cash-out prices* - a particular problem of interaction between the gas balancing regime in the Netherlands and Belgium that has been identified by shippers is that differences in imbalance cash-out prices have resulted in arbitrage between the two countries. Arbitrage can be efficient as long as it is driven by underlying cost signals rather than differences in imbalance cash-out prices. Where this arbitrage is not efficient it will be important to assess the extent of the issue and to consider whether it would be appropriate to harmonise certain aspects of neighbouring balancing regimes to resolve the issue.

Question (6):

Do differences between (neighbouring) gas balancing regimes distort or the incentives provided to market participants? If so, what degree of consistency would be appropriate to overcome these problems? Would there be any disadvantages from introducing more consistency in features of (neighbouring) gas balancing regimes? How could this consistency be facilitated – for example would legislation be required or could it be achieved through better co-operation between regulators and TSOs in different Member States.

Question (7):

Would cross-border (or international) balancing zones help facilitate the development of competition in gas across Europe? What technical, legal and practical issues would need to be overcome if cross-border balancing zones were introduced? What impact could cross-border balancing zones have on the development of hub based trading and regional markets (see for example the recent EREG document on regional markets in electricity)?

Gas balancing and transit pipes

Shippers have indicated that different balancing rules are sometimes applied to transit and transportation flows (e.g. in Belgium). It has been suggested that there is a lack of transparency regarding the interaction of the transit and transportation balancing rules and that this uncertainty increases risk and potentially creates a barrier to entry to the market.

The issue of whether transit and transportation balancing rules need to be harmonised needs to be considered carefully. Particular attention needs to be given to the physical characteristics of the transportation system to understand whether differences in balancing rules are appropriate. It is also important to understand the nature of deviations from nominated flows. For example, on the national transportation system the demand-supply balance is likely to be significantly affected (at least in the short term) by fluctuations in temperature that impact on end users' demand.¹⁴ On a transit system deviations from nominated flows are more likely to be driven by reduced import volume and control system issues – these deviations are less likely to be smaller over a short period of time – which could suggest a different balancing period. It would appear therefore that there may be good reasons for differences in the detailed features of the gas balancing regime that applies to transit and transportation. It is important however that the balancing rules on the transit system are transparent and non-discriminatory. It is also important that the interactions between the transportation-transit balancing regimes are understood so that no barriers to entry are created; that there is no distortion in trade; and that the national transportation system is not potentially exposed (in terms of costs and security and safety) to imbalances on the transit system.

¹⁴ For example, in Austria short term (3 to 6 hours) changes in demand driven by changes in temperature can lead to significant deviations from nominated flows of up to 10-15 per cent.

Question (8):

Would it be appropriate to increase the level of consistency between balancing rules for transit and transportation systems?

Question (9):

Would the introduction of Operational Balancing Agreements (OBAs) between transit and transportation systems improve transparency on how the balancing regimes interact? If so, what should be included in the OBAs?

Chapter 4: Suggested changes to the existing CEER gas balancing principles

Some of the problems identified in Chapter 3 could be tackled through changes to the existing gas balancing principles. This Chapter suggests some changes to the existing principles to achieve this and to bring them in line with the current Gas Regulation.

CEER would welcome the views on the suggested changes to the existing gas balancing principles.

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. 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.

Explanation

The intention of this principle is to define the roles of different stakeholders within the balancing regime. It recognises the distinction between the role of network users (to balance their own inputs and offtakes) and the role of the TSO (to maintain overall physical balance of the system). This definition of the respective roles of different stakeholders is important in the context of the separation of roles and responsibilities under the Gas Directive.

Suggested change

The primary responsibility of network users is to balance their own inputs and offtakes over the relevant period according to the rules and incentives of the respective balancing regime. The TSO 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.

Reason for change

This principle defines the principle roles of network users and the TSO. Other principles will deal with the strength of incentives to balance and therefore reference to this has been deleted. More detailed requirements on network users and TSOs are set out in the respective principle.

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 its own commercial operations of vertically integrated companies as to third parties on a formal and verifiable basis. Balancing rules should take account, on 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 to 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.

Explanation

The intention of this principle is to set out some high level requirements for balancing regime. Consistent with the Gas Directive it requires the development of non-discriminatory balancing rules – including in how they are applied between affiliate and third party companies. It also recognises the implicit *potential* trade-off between the development of balancing rules that are closely related to the underlying technical characteristics of the network and which at the same time are not overly complex to understand and manage risks.

Suggested change

Balancing rules shall be designed in a fair, non-discriminatory and transparent manner and shall be based on objective criteria. The development of balancing rules and changes thereof should be subject to appropriate consultation with market participants and decisions should be supported by objective criteria and analysis.

Where balancing rules (including imbalance charges) are administered by the TSO they should be equally applied to its own commercial operations and affiliates, where part of a vertically integrated company, as to third parties. This includes ensuring that no information concerning the operation of the balancing regime are provided to an affiliate company of the TSO in advance of being provided to all market participants. The arrangements to meet this requirement should be made publicly available. Balancing rules should be designed to minimise the residual physical balancing role of the TSO subject

to the safe and economic operation of the network and the incentives, information and flexibility and tools provided to shippers to balance their individual portfolio. They should also be designed to facilitate effective competition and market participation between shippers and avoid discrimination particularly in creating undue barriers of entry to new entrants or smaller players.¹⁵

Reason for change

The requirement to ensure non-discrimination in the design of gas balancing rules has been consistent with the current Gas Regulation. Market participants have expressed concerns about a lack of consultation and objective analysis to support decisions that are taken about the design of balancing regimes. Openness and transparency has an important role to play in building confidence and credibility in the regulatory framework – including the balancing regime – thereby reducing the perception of risk. Consultation and decisions based on objective criteria and analysis underpin transparency. It is important that balancing rules and information provision are non-discriminatory with regards to the treatment of TSO-affiliate companies and third parties. This change provides some additional clarity in this respect. Minimising the residual physical balancing role of the TSO has advantages in terms of improving targeting of balancing costs on those shippers who gave rise to them thereby potentially improving the overall efficiency of the balancing regime. However, it is important that the minimisation of the role of the TSO is consistent with the safe and economic operation of the network and the incentives, information and flexibility and tools provided to shippers.

¹⁵ It will be necessary to consider how this requirement should be reflected in the design of different aspects of gas balancing rules.

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 for more regular information flows over shorter balancing periods;
- ◆ nomination procedures complementary to the frequency of balance.

Explanation

There is no single answer to the appropriate length for a balancing period and this principle is intended to give guidance on the criteria that should be used in deciding on the appropriate length.

Suggested change

The choice of an appropriate balancing period clearly needs 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 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;
- ◆ **the interaction with balancing periods in connected gas systems to ensure that no undue barriers to cross border trade are created;**
- ◆ availability and accuracy of the information over the relevant period **that is made available to shippers to take balancing actions;**
- ◆ the costs imposed by particular balancing regimes, **for example the IT costs of providing more regular information flows over shorter balancing periods and the transaction costs incurred by shippers from potentially taking more frequent balancing actions;**
- ◆ nomination procedures complementary to the frequency of balance.

It is important that shippers are not exposed to undue risks that they cannot

manage effectively and/or without incurring inefficient costs that could create a potential barrier to entry to the market.

Reason for change

It is important that the interaction between connected gas systems is considered when deciding on the appropriate balancing period to ensure that no undue barriers to cross border trade are created. It is important that the potential transaction costs incurred by a shipper in taking more frequent balancing action are also assessed in deciding on the most appropriate balancing period. A combination of a short balancing period, insufficient access to flexibility and inadequate information provision on imbalance positions and allocations can, particularly in conjunction with penal imbalance charges, create a real barrier to entry to the market. It is important that the choice of balancing period does not contribute to the creation of barriers to entry.

Principle 4a

Balancing Costs

TSOs 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.

Explanation

This principle is intended to provide guidance as to how balancing costs incurred by the TSO should be reflected within the balancing regime – that they should be efficient and TSOs should remain neutral overall with respect to the costs recovered. Neutrality is important so that the balancing rules do not create incentives/dis-incentives to TSOs to incur costly balancing actions – i.e. they should respond to the need to physically balance in an efficient manner.

Suggested change

Balancing Costs and incentives for the TSO

TSOs should have commercial incentives to ensure that the costs of **taking residual** balancing actions and associated operational costs that the TSO incurs are efficient. **Unless a TSO is not permitted to accept bids and offers for balancing gas as a means to balance the system it should procure flexibility (including gas) in a transparent and non-discriminatory manner using market based mechanisms**

where possible. 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 **to the TSO** in relation to the timing and size of balancing actions **to ensure a safe, reliable and economic system.**

Where a TSO is not permitted to accept bids and offers for balancing gas as a means to balance the system the TSO should be able to contract for gas in other ways for example accessing gas from storage or with contracts with shippers. It is important that these costs are efficient and that they are charged back to shippers on a non-discriminatory basis. Information on the costs incurred by the TSO shall be made publicly available where this does not have a negative impact on the commercial position of the relevant market participants.

Reason for change

Ideally a TSO should use market based mechanisms to procure any gas it needs for system balancing to provide openness and transparency with regards to its actions. A market based transaction is also more likely to lead to efficient costs being incurred. The existing CEER gas balancing principles recognise the situation where TSOs are not able to use market based mechanisms to purchase gas. It is important that any costs incurred are efficient and that they are charged to shippers on a non-discriminatory basis. As far as possible information about these costs should be made publicly available to help ensure openness and transparency.

Principle 4b

Charges for imbalances

Charges 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 targeting 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.

Explanation

This principle is intended to provide guidance as to how charges for imbalance should be treated within the balancing regime including that they should be non-discriminatory. It highlights the importance of not distorting competition through the

design and level of imbalance charges – for example setting very high charges (not reflecting costs) could increase the level of risk on new entrants in comparison to larger incumbents – particularly where information transparency and availability of flexibility makes it difficult for shippers to manage imbalance positions.

Suggested change

Imbalance charges **should not result in a distortion of competition** and/or trading activities in wholesale gas and storage and flexibility markets. **Imbalance charges shall be cost-reflective to the extent possible, whilst providing appropriate incentives on network users to balance their input and off-take of gas. They shall avoid cross-subsidisation between network users and shall not hamper the entry of new market entrants.** These incentives should be such that, *in aggregate*, the participants of the system face strong incentives to physically balance the system in an efficient way. **They should also be fair and non-discriminatory and based on objective criteria and not hamper entry of new market participants. The method for calculating imbalance charges shall also be made public by the competent authority or the TSO as appropriate.**

There should also be accurate targeting 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.

Reason for change

The recently adopted Gas Regulation requires that imbalance charges are broadly cost reflective to the extent possible whilst providing an appropriate incentive to balance inputs and offtakes. If a particular shipper is significantly out of balance in comparison to other shippers it may be appropriate for the imbalance charge that it faces to be higher on a per unit basis so as to provide a stronger incentive to minimise imbalance positions. The requirement to ensure that imbalance charges are non-discriminatory, fair and based on objective criteria is consistent with the Gas Regulation as is the requirement to ensure that they avoid cross-subsidisation and that the method used to calculate them is made public.

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 questions 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 it creates an appropriate balance between the 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.

Explanation

This principle is designed to try and provide additional flexibility to shippers to manage their imbalance positions with the aim of minimising residual balancing actions by the TSO.

Suggested change

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 questions 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, **at least as interim measure until the development of liquid within day markets,** provided it creates an appropriate balance between the 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. **The TSO should have systems in place to facilitate the trading of imbalance positions where it is allowed.**

It may also be appropriate to allow pooling of imbalance positions across shippers as an additional service.

Reason for change

It is unlikely that where participants have access to liquid within day markets that there will be a need for them to be provided with the opportunity to trade imbalance positions as way of managing and mitigating risks.

Where trading of imbalance positions is permitted it is important that the necessary systems are in place to facilitate efficient trade – this would need to be provided by the TSO. Pooling of

imbalance positions could also help shippers manage the level of risk they are exposed to although it would be important to ensure commercial confidentiality between shippers.

Principle 5

Tolerance services

Tolerance services in particular for less mature or less liquid markets are a useful tool to facilitate competition and a pragmatic means to handle some of the uncertainties surrounding balancing. Where offered, tolerance levels should be designed in a way which reflects 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 needed in sufficiently liquid and developed markets of the necessity of tolerance where this leads to a significant socialisation of imbalance costs. In any case, the secondary trading of tolerances should be permitted.

Explanation

This intention of this principle is to give guidance on how tolerance services can be used to provide additional flexibility within balancing regimes. It recognises the balance between ensuring that tolerance services reflect the underlying capabilities of the transmission system and not creating incentives on shippers to cause the TSO to incur balancing costs that need to be socialised (i.e. collected from all shippers rather than the party giving rise to the cost). It also recognises that overuse of tolerance services could lead to distortions particularly where the market is already liquid.

It also indicates that secondary trading of tolerance should be permitted which can help shippers avoid imbalance charges (by allowing them to react to changes in information on allocations) and therefore reduce the residual role of the TSO to balance the system therefore improving the targeting of imbalance costs.

Suggested change

Tolerance services in particular for less mature or less liquid markets are a useful tool to facilitate competition and a pragmatic means to handle some of the uncertainties surrounding balancing. Where offered, tolerance levels should be designed in a way which reflects 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, they should be minimised as far as possible as long as this is consistent with the technical capabilities of the transmission system and that it does not impose undue levels of risk on**

shippers. In particular, careful consideration is needed in sufficiently liquid and developed markets of the necessity of tolerance where this leads to a significant socialisation of imbalance costs. In any case, the secondary trading of tolerances should be permitted **and should be facilitated by TSOs by the introduction of appropriate systems.**

In the case of non-market based balancing systems, tolerance levels shall be designed in a way that either reflects seasonality or results in a tolerance level higher than that resulting from seasonality, and that reflects the actual technical capabilities of the transmission system. Tolerance levels shall reflect genuine system needs taking into account the resources available to the transmission system operator.

Where the balancing period is shorter than one day, tolerance levels can be a particularly useful tool for mitigating the balancing requirements on system users.

Reason for change

The provision of tolerance services can lead to the socialisation of imbalance rather than them being targeted to the shipper that gave rise to the costs. This could lead to overall costs being higher than they otherwise need to be. Therefore, where tolerance services are provided they should be no higher than is required. Secondary trading of tolerances should be facilitated by TSOs. In the case of non-market based balancing systems this is consistent with the current Gas Regulation.

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 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.

Explanation

This principle is intended to give guidance on the information that should be provided to market participants in order to ensure the efficient operation of the balancing regime – it recognises the importance of ensuring that participants have sufficient

access to information to manage their imbalance positions subject to reasonable costs of provision.

Suggested change

In order to enable network users to take timely corrective action, TSOs shall provide sufficient, well-timed and reliable on-line based information on the balancing status of network users. The level of information provided shall reflect the level of information available to the TSO. Where they exist, charges for the provision of such information shall be approved by the relevant authorities and made public by the TSO.

Information should be provided to all participants on a non-discriminatory basis and in a format which is meaningful, quantitatively clear and easily accessible.

Where information flows are a problem TSOs shall use provisional allocations in the calculation of imbalance charges to reduce the risk for shippers. The time period within which charges are confirmed and the method for calculating provisional allocations should be approved by the competent authority after proper consultation with the TSO and relevant shippers as should any subsequent changes to charges once definitive allocations are available.

Reason for change

The main change to this principle is to bring it into line with the recently adopted Gas Regulation. It is also important that information is provided on a non-discriminatory basis and that it is transparent. Provisional allocations could be used to mitigate potential risks to shippers of poor information flow on imbalance positions – although it is important that this risk is not replaced with risk derived from uncertainty regarding the method of calculation or how charges may change once a definitive allocation is available.

Principle 7

Harmonisation of balancing rules

TSOs 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.

Explanation

The intention of this principle was to provide guidance to TSOs regarding the interaction of neighbouring balancing regimes to ensure that no barriers to trade are created.

Suggested change

TSOs 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 **This refers especially to the implementation of Operational Balancing Agreements (OBAs) between neighbouring TSOs ensuring simplification for shippers through appropriately harmonised balancing rules.** Such arrangements shall be published and notified to the relevant regulatory authority.

Reason for change

OBAs can provide a useful tool for ensuring that interactions between neighbouring balancing regimes are well understood and that where appropriate rules are harmonised to facilitate cross-border trade.

New Principle 8**Provision of flexibility**

Flexibility should be made available to shippers on a non-discriminatory basis reflecting the underlying technical characteristics of the transmission system. In particular, (where technically available) TSOs should seek, wherever appropriate, to maximize the availability of linepack not needed for system security to all shippers on a non-discriminatory basis in order to help ensure the efficient use of the available flexibility in the system. Where linepack is not sufficient to meet the balancing requirements of system users the TSO shall acquire the additional tools through investments or contractually in order to meet market demand on a non-discriminatory basis.

Reason for introduction

Where available, provision of flexibility to shippers is a crucial aspect of a gas balancing regime as it helps shippers to efficiently manage their imbalance positions thereby reducing overall system costs.

The amount of linepack available in the system is determined by the transmission system operator taking into account a number of factors including that there is a trade-off between the amount of linepack and capacity offered within a particular system; this trade-off should be optimized taking into account the costs of other flexibility tools. For example, if alternative flexibility tools are cheaper than providing linepack then it would be appropriate to increase capacity rather than linepack in this respect.

Chapter 5: Next steps

Gas balancing rules have a crucial role to play in underpinning the competitive market. Problems in the way balancing regimes work can create barriers to entry to the market; increase system costs (and lead to inefficient outcomes); and possibly impact on the safety and security of the network. The existing CEER gas balancing principles were designed to provide guidance to TSOs and regulators regarding the design of balancing regimes. These could be developed in a number of areas which could help to overcome some of the problems identified in this report.

It was originally envisaged that the CEER gas balancing principles would form part of the Guidelines for Good Practice (GGP) for access to transportation subsequently developed into legislation in the form of the Gas Regulation. Certain requirements in relation to gas balancing are included in the current Gas Regulation but this does not include a legislative provision for the development of more detailed guidelines for gas balancing.

ERGEG will develop guidelines for good practice for gas balancing – for submission, after consultation, as formal advice to the European Commission. The Commission could consider whether these guidelines should be reflected in any forthcoming legislation. It is, however, important to develop the high level principles first and the views of stakeholders will be particularly important in this respect. The next Madrid Forum (15 -16 September) will also provide stakeholders with a further opportunity for consultation. A final view on changes to the gas balancing principles will be published before the end of 2005. ERGEG will then develop more detailed guidelines for good practice in 2006.

Such guidelines would be voluntary at this stage with compliance monitored by the regulators on a periodic (e.g. annual) basis.

ERGEG also intends, in due course, to develop guidelines for practice for third party access to linepack in line with Article 19 of the Gas Directive – and it will be important to ensure appropriate consistency between this and the gas balancing guidelines. It will also be necessary to consider whether, and if so how, they are integrated with the gas balancing guidelines.

ANNEX 1

Key questions for stakeholders

Question (1):

Are there other features that should be reflected in a gas balancing regime to help ensure efficiency and to maintain safety and security of the system?

Question (2):

Should the incentives to balance become stronger the further away a shipper is from being in balance or are there are other ways of ensuring that shippers have appropriate incentives to minimise their imbalance positions? Should shippers be allowed to trade their imbalance positions on an ex-post basis as a way of improving overall efficiency?

Question (3):

Does hourly balancing create any barriers to the development of competition?

Question (4):

What information is required to ensure that gas balancing regimes operate effectively and efficiently and how often should this be provided? What is the best way of ensuring that this information is provided to all parties on a non-discriminatory basis?

Question (5):

Should linepack (where technically feasible) be made available to shippers on a non-discriminatory basis to improve access to flexibility? Are there any other steps that could be taken to improve access to flexibility that would not impinge on the safety and security of the system?

Question (6):

Do differences between (neighbouring) gas balancing regimes distort or the incentives provided to market participants? If so, what degree of consistency would be appropriate to overcome these problems? Would there be any disadvantages from introducing more

consistency in features of (neighbouring) gas balancing regimes? How could this consistency be facilitated – for example would legislation be required or could it be achieved through better co-operation between regulators and TSOs in different Member States?

Question (7):

Would cross-border (or international) balancing zones help facilitate the development of competition in gas across Europe? What technical, legal and practical issues would need to be overcome if cross-border balancing zones were introduced? What impact could cross-border balancing zones have on the development of hub based trading and regional markets (see for example the recent EREG document on regional markets in electricity)?

Question (8):

Would it be appropriate to increase the level of consistency between balancing rules for transit and transportation systems?

Question (9):

Would the introduction of Operational Balancing Agreements (OBAs) between transit and transportation systems improve transparency on how the balancing regimes interact? If so, what should be included in the OBAs?

ANNEX 2

Summary of questionnaire results

The information set out in the following tables was provided by NRAs in response to an internal CEER questionnaire issued last year to regulators. This shows that there are many different approaches to the design of detailed gas balancing rules across Member States.

Table 1: What is the relevant balancing area for which the balancing rules apply?

Member State	Relevant balancing area	
One TSO	High Pressure	Low Pressure
Belgium ¹⁶ , Great Britain, Luxembourg, Netherlands, Portugal, Denmark	NTS – High Pressure grid	n/a
Finland, Ireland	NTS – High and low pressure grids	
Multiple TSOs:		
Austria ¹⁷	Divided into 3 balancing areas – grids are not physically connected. Uniform balancing rules apply for all areas which are used for distribution tiers but not for transit system.	
France	2 TSOs: One TSO with four balancing zones and the other with 1 balancing zone.	
Italy	The main TSO balances the NTS, of which it owns the 95%; the remaining 5% is owned by the 2 other TSOs.	
Spain	The new Directive has not been implemented yet, but CNE expect to have several TSOs. There is only one balancing area – the Spanish gas system. The balancing is done separately for the transmission and distribution network, LNG plants and underground storage.	

¹⁶ Three balancing areas for high pressure gas and 1 balancing area for low pressure gas.

¹⁷ Note this relates to domestic/transportation balancing.

Table 2: How is gas obtained / or demand reduced by the TSO for the purposes of balancing the system?

TSO issues a long-term tender (e.g. annually) for major supplier to provide balancing gas	YES	Belgium, France, Ireland, Netherlands
	NO	Austria, Denmark, Finland, Great Britain, Italy, Luxembourg, Spain
	N/A or Not available	Portugal, Iceland, Norway, Sweden
TSO relies on market-based balancing mechanism	YES	Austria¹, Great Britain
	NO	Belgium, Denmark, Finland, France, Ireland, Italy, Luxembourg, Netherlands, Spain
	Not relevant or Not available	Portugal, Iceland, Norway, Sweden
TSO uses line-pack	YES	Austria (domestic consumption), Belgium, Denmark, Finland, France, Great Britain, Italy, Luxembourg, Spain
	NO	Ireland, Netherlands
	Not relevant or Not available	Portugal, Iceland, Norway, Sweden
TSO uses gas in storage	YES	Belgium, Denmark, Great Britain, Italy, Spain, France (since April 2005),
	NO	Austria (for domestic consumption), Finland, Ireland, Luxembourg, Netherlands
	Not relevant or Not available	Portugal, Iceland, Norway, Sweden
TSO can elect to interrupt	YES	Belgium, Italy², Spain³
	NO	Austria, Denmark⁴, Finland, France, Ireland, Luxembourg, Netherlands
	Not relevant or Not available	Portugal, Great Britain, Iceland, Norway, Sweden

¹ Domestic consumption: The Control Area Manager ("inter-TSO") receives a merit order list with bids and offers for balancing energy

² only those with interruptible contracts

³ Those out of balance and those with interruptible contracts

⁴ Shippers can be interrupted but not end-users

Table 3: Calculating imbalance positions for system users

For each user, within each balancing area what is the relevant responsibility to balance their injection and offtakes?	Notional balancing point	Denmark, France, Great Britain, Italy, Luxembourg, Spain
	Responsibility of each Shipper to ensure daily balancing	Ireland
	Each balancing area treated as a pool	Belgium
	There is no TPA. Customers are responsible to be in balance with their contracted withdrawal capacity (only overrun).	Finland
	For transit, each shipper has to be in balance for each pipeline within the tolerance levels. For domestic consumption, each Balance Group has to be in balance every hour regarding their aggregated schedules (nominations) vs. actual consumption	Austria
	N/A	Portugal, Iceland, Norway

In the first instance what is each system user's relevant responsibility to balance their injection and offtakes?	Metered flows	Austria, Belgium, Netherlands, Denmark
	users' nomination	Great Britain
	Metered flows and contracted capacity	Finland
	For injection: system users' nomination and metered flows. For withdrawal: TSO calculates estimates for different categories and metered flows	Italy, France
	For injection: system users' nomination. For withdrawal: TSO calculates estimates for different consumption categories	Spain
	For injection and withdrawal: On D+1 gas aggregate metered gas flows at the entry points are allocated amongst Shippers in proportion to their nominations.	Ireland
	N/A	Portugal, Iceland, Norway

Table 4: Imbalance tolerances/imbalance trading

What imbalance tolerance services are available?	Automatic allocation to each system user. Percentage of each user's portfolio.	Austria, Denmark ¹ France, Great Britain, Italy ² , Luxembourg, ³ Netherlands, Spain ³
	No imbalance tolerance service available	Finland
	(i)+/-20% for Shippers of between 57,500,000 kWh and 260,000,000 kWh (ii)+/-8% for Shippers of between 260,000,000 kWh and 1,500,000,000 kWh per year and (iii) +/- 3% for Shippers greater than 1,500,000,000 kWh.	Ireland
	Fluxys gas transport services in Belgium - Conditions and Tariffs (Chapter 3)	Belgium
	N/A	Portugal, Iceland, Norway

¹ The shipper can make a Balance Service Agreement for further flexibility

² Only for users with no access to storage capacity.

³ Flexibility instruments incorporated in the tariffs – for example, re-gasification tariffs include 5 days of the reserved capacity of free LNG storage and transmission tariffs include 2 days of the reserved capacity of free linepack storage.

Can system users trade any tolerance allocations they do not require?	NO	Austria*, Finland, France, Great Britain, Ireland, Luxembourg
	Yes	Belgium, Italy**, Netherlands, Denmark
	N/A	Portugal, Iceland, Norway

*Domestic consumption

**Storage Company allows system users to pool daily imbalances; therefore shippers can sum up imbalances in order to optimize their modulation contract portfolio.

Can imbalances be traded with other system users?	Ex Ante	Belgium, Denmark, Luxembourg, Spain*
	EX Post	Austria**, Great Britain, Ireland, Italy, Denmark***
	No	Finland, France, Netherlands
	N/A	Portugal, Iceland, Norway

* Shippers are allowed to trade gas for balancing purposes on an ex-ante basis

** Domestic consumption

*** Ex post trading is also possible through the tolerance margin

Table 5: What is the best description of the balancing period for your system?

a) What is the best description of the balancing period for your system?	Hourly	Netherlands, Finland, Luxembourg¹
	Daily	Belgium¹, Denmark, France², Great Britain, Ireland, Italy, Luxembourg¹, Spain
	Both	Austria (daily: transit; hourly: domestic)

ANNEX 3

Gas balancing and the Gas Regulation which was adopted on 12th July

This Annex sets out the requirements in relation to gas balancing that are included in the Gas Regulation on conditions of access to natural gas transmission networks¹⁸.

Article 7

Balancing rules and imbalance charges

1. Balancing rules shall be designed in a fair, non-discriminatory and transparent manner and shall be based on objective criteria. Balancing rules shall reflect genuine system needs taking into account the resources available to the transmission system operator.
2. In the case of non-market based balancing systems, tolerance levels shall be designed in a way that either reflects seasonality or results in a tolerance level higher than that resulting from seasonality, and that reflects the actual technical capabilities of the transmission system. Tolerance levels shall reflect genuine system needs taking into account the resources available to the transmission system operator.
3. Imbalance charges shall be cost-reflective to the extent possible, whilst providing appropriate incentives on network users to balance their input and off-take of gas. They shall avoid cross-subsidisation between network users and shall not hamper the entry of new market entrants.

Any calculation methodology for imbalance charges as well as the final tariffs shall be made public by the competent authorities or the transmission system operator as appropriate.

¹⁸ Reflecting the text adopted at the sitting of the European Parliament on 8 March 2005.

4. Transmission system operators may impose penalty charges on network users whose input into and off-take from the transmission system is not in balance according to the balancing rules referred to in paragraph 1.
5. Penalty charges which exceed the actual balancing costs incurred, insofar as such costs correspond to those of an efficient and structurally comparable network operator and are transparent, shall be taken into account when calculating tariffs in a way that does not reduce the interest in balancing and shall be approved by the competent authorities.
6. In order to enable network users to take timely corrective action, transmission system operators shall provide sufficient, well-timed and reliable on-line based information on the balancing status of network users. The level of information provided shall reflect the level of information available to the transmission system operator. When they exist, charges for the provision of such information shall be approved by the competent authorities and shall be made public by the transmission system operator.
7. Member States shall ensure that transmission system operators endeavour to harmonise balancing regimes and streamline structures and levels of balancing charges in order to facilitate gas trade.