Assessment of Capacity Allocation Mechanisms and Congestion Management Procedures for effective Access to Storage and Proposals for the Amendment of the GGPSSO

An ERGEG Public Consultation Paper

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Abstract

On 29 July 2010 ERGEG launches a public consultation on Assessment of CAM and CMP for effective access to storage and the proposals for amendment of existing Guidelines of Good Practice of Storage System Operators.

With the coming into force of the 3rd Package in March 2011, the regulatory framework regarding storage has changed. The 3rd Package requires some further considerations that need to be taken into account when defining allocation mechanisms and congestion management procedures. Due to the importance of storage, there is a need to enhance the existing Guidelines of Good Practice of Storage System Operators.

Target Audience

Storage systems operators, storage users, producers, consumers, European representative groups, other interested parties.

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How to respond to this consultation

Deadline: **9 October 2010**

Comments should be sent by e-mail to **CAM_CMP_storage@ergeg.org**

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All responses except confidential material will be published on the website www.energy-regulators.eu.

Treatment of Confidential Responses

In the interest of transparency, ERGEG

i) will list the names of all respondents (whether confidential or not) or, alternatively, make public the number (but not the names) of confidential responses received;

ii) requests that any respondent requesting confidentiality submit those confidential aspects of their response in a "confidential appendix". ERGEG will publish all parts of responses that are not marked confidential.

For further information on ERGEG's rules, see ERGEG Guidelines on Consultation Practices.

Related Documents

CEER/ERGEG documents

- → Status Review 2008: Capacity Allocation Mechanisms and Congestion Management Procedures for Storage
- → Status Review 2009: Capacity Allocation Mechanisms and Congestion Management Procedures for Storage
- → Guidelines of Good Practice for Third-Party Access for Storage System Operators (GGP SSO), March 2005 (Ref: E04-PC-01-14)

2. Executive Summary

Importance of storage

In most countries, storage is to be considered the most important flexibility tool. As a consequence, access to storage is important to be a successful market player on the gas market. Given this importance, ERGEG conducted research (in 2008 and 2009) into capacity allocation mechanisms (hereafter: CAM) and congestion management procedures (hereafter: CMP). This research showed a number of problems applying to allocation mechanisms in different market situations (resulting in a lack of economic efficiency in capacity allocation and incentives for new investments) as well as a weak position of some NRAs to impose remedial solutions. Furthermore, it was found that a well functioning secondary market is of most importance. However, transparency of the secondary market is weak, while the principle of Use-It-Or-Lose-It (hereafter: UILOI) does not seem to be working.

Necessity for enhancing existing guidelines

With the coming into force of the 3rd Package in March 2011, the regulatory framework regarding storage has changed. The 3rd Package requires some further considerations that need to be taken into account when defining allocation mechanisms and congestion management procedures. However, the 3rd Package rules will not be sufficient on their own to tackle problems as found in the ERGEG status reviews 2008 and 2009. Due to the importance of storage, there is a need to enhance the existing Guidelines of Good Practice of Storage System Operators (hereafter: GGPSSO)[1].

Important considerations for proposals

Based on the status reviews, a number of considerations were identified that need to be taken into account if enhancing GGPSSO on both CAM and CMP:

Capacity allocation mechanisms

Due to the importance of access to storage, the relevant market conditions and market structure of the storage market and the role of storage as part of a flexibility market needs to be taken into account. Therefore, when evaluating allocation methods and the risk to discriminate, regulators need to consider the System Storage Operator's (hereafter: SSO) position in both the storage market and its position (and that of its related undertakings) in the flexibility market.

[1] Guidelines of Good Practice for Third-Party Access for Storage System Operators (GGP SSO), March 2005 (Ref: E04-PC-01-14), http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_ERGEG_PAPERS/Guidelines%20of%20Good%20Practice/Gas/E04-PC-01-14_GGPSSO_2005-03-23_FINAL%20-%20March%202005.pdf

It is also necessary to differentiate between a market situation in which sufficient storage capacity is available or where scarcity of storage capacity exists, as this may mean different CAM's are appropriate in these different situations. Whatever the market situation, a CAM should not act as a barrier to new entrants, as storage is one of the most important flexibility tool. From an economic perspective, auctions are preferred. One condition for auctioning is the presence of a significant number of bidders. Generally, an auction does only produce efficient outcomes when there is competition between the bidders and absence of the possibility to strategically misbehave. Therefore, when applying auctions in the storage markets this aspect should be analysed carefully; in some cases supporting measures (restricting the market share of the dominant supplier) could be useful.

Congestion management procedures

The application of UIOLI in gas storage is complicated because it limits the use of storage as a flexibility tool. An improvement of the secondary markets towards more standardisation is broadly supported by the market participants as the status review 2009 has shown, more regulation (as Use-It-Or-Sell-It[2], hereafter: UIOSI) is requested only in cases when liquidity on the secondary markets will stay limited. Transparency is critical for secondary markets. Furthermore, the liquidity of the secondary markets depends on how much storage capacity is released by primary customers. Whether the (timely) release of capacity should be on a voluntary basis or mandatory depends on the market conditions.

Consultation on proposals

Based on the given considerations, different proposals for both allocation mechanisms and congestion management procedures have been proposed, including a justification as to why a proposal should be in the GGPSSO. ERGEG seeks the opinion of the respondents on a number of specific issues related to the scope and applicability of the proposals. Respondents are invited to reply and provide comments on the proposals laid down in this report by 9 October 2010.

[2] In the event that contracted storage capacity goes unused, storage system operators shall make this capacity available on the primary market on an interruptible basis (Use-It-Or-Lose-It), as long as this capacity is not offered by the relevant storage user on the secondary market at a reasonable price (Use-It-Or-Sell-It).

3. Introduction

3.1. Background

Importance of (access) to storage

Access to flexibility is essential to be a successful market player in the (European) gas market. There are a number of different flexibility tools, such as flexibility in supply contracts, line pack, access to LNG terminals, interruptible contracts and importing additional gas. However, due to its characteristics, gas storage is one of the best flexibility tool for market parties. In fact, in most European countries access to storage is the most important flexibility tool. Restrictions to access and hoarding of gas capacity can therefore have a detrimental impact to the development of an efficient, competitive internal gas market.

The ERGEG Storage Task Force

Due to the importance of storage, it is essential that access to storage is well arranged. Therefore, in 2008, the ERGEG established a Storage Task Force (GST TF) to review the current situation in different EU member states on Capacity Allocation Management (CAM) and Congestion Management Procedures (CMP) for storage. Through a questionnaire, Storage System Operators, National Regulatory Authorities and (potential) storage users were asked to give their opinion on a number of storage related issues.

Outcome of status review 2008 and 2009

The results of the survey (summarized in a status review that was published in December 2008 by ERGEG)[3] indicated problems applying CAM in different market situations (such as: the lack of availability of storage capacity, not only short term, but also mid term, the preferential treatment of different customer groups usually incumbents, the lack of economic efficiency in capacity allocation and incentives for new investments) in combination with the weak legal position of the NRA's in some Member States. It became clear that the effectiveness of CAM and CMP as stated in the monitoring reports in 2005 and 2006 – needed to be further investigated.

[3] http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_ERGEG_PAPERS/Gas/2008/E08-GST-03-03_SR-CAM-CAP%20for%20Storage-%20for%20publication%2018.pdf

In 2009 ERGEG has conducted research on the specific view of storage users regarding the effectiveness of CAM and CMP. For this purpose a detailed questionnaire, based on the results of the 2008 survey and focussed again on CAM and CMP (as well as secondary markets) was sent to storage users. The questionnaire was coordinated with GSE, Eurogas and EFET. The results - summarised in the status review 2009[4] – confirmed the conclusions in the status review 2008 regarding problems with CAM and CMP. It was also found that UIOLI as a CMP is hardly used in storage markets. The responding storage users broadly supported the opinion, that the application of UIOLI in gas storage is complicated because it limits the use of storage as a flexibility tool.

New rules in the 3rd Package for storage

With the coming into force of the 3rd Package (March 2011), the regulatory framework regarding storage will change. Parts of the new rules are based on different parts of the already existing Guidelines of Good Practice of Storage System Operators of ERGEG (such as verification by the Member States of choosing regulated or negotiated access and requirement for unbundling of the SSO). Furthermore, the 3rd Package contains some articles regarding allocation mechanisms and congestion management. In general, this could strengthen the position of the regulatory authorities.
Although the 3rd Package is a step forward, the main question is whether this improvement of the regulatory framework is sufficient enough to deal with the problems in applying CAM and CMP as found in the status reviews of 2008 and 2009. As found out in the ERGEG research the general requirements of the GGPSSO are implemented by the most SSOs – but there are still remaining problems with different CAM and CMP. In this regard, the 3rd Package is (mainly) giving some considerations that need to be taken into account when defining CAM and CMP. The 3rd Package made voluntary regulations binding on the basis of some parts of the GGPSSO, but does not provide sufficient detail. Taking this into consideration, as well as the legal position of some NRAs, ERGEG has come to the conclusion that an enhancement of the GGPSSO by developing guidelines for CAM and CMP is needed.

3.2. Method of approach and structure of this paper

In order to come to proposals, first the outcome of both the 2008 and 2009 status reviews was evaluated, to understand the fundamental problems regarding CAM and CMP. The results of this evaluation (as well as the compliance of the different CAM and CMP with the regulation and the GGPSSO) are presented in **chapter 4**. In **chapter 5,** a proposal for enhancement of the existing GGPSSO regarding CAM and CMP has been made. Finally, in **chapter 6** the questions for public consultation are presented.

[4] http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_ERGEG_PAPERS/Gas/2010/E10-GST-09-03_CAM-CMPforStorage-SR_clean.pdf; http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_ERGEG_PAPERS/Gas/2010/Annex_Questionnaire_to%20Storage%20E10-GST-09-03.pdf

3.3. Objective and purpose of this paper

Realising the potential impact of the recommended guidelines on both SSOs and storage users, ERGEG decided to start a consultation. The purpose of this Consultation Paper is therefore to seek stakeholder's views on the assessment of CAM and CMP and the proposed revision of the GGPSSO.

4. Assessment of existing CAM and CMP

In this chapter, (problems with) different allocation and congestion management procedures as identified in the status reviews are discussed. The different mechanisms and procedures will be assessed against the requirements for both in the 3rd Package. This assessment will be the basis for the proposals in chapter 5.

4.1. Capacity Allocation Mechanisms

4.1.1. Requirements for CAM in the 3rd Package

The 3rd Package contains a requirement (Article 17 of the Gas Regulation 715/2009) that should be taken into account when choosing an appropriate allocation mechanism:

"2. LNG and storage system operators shall implement and publish non-discriminatory and transparent capacity-allocation mechanisms which shall:
(a) provide appropriate economic signals for the efficient and maximum use of capacity and facilitate investment in new infrastructure;
(b) be compatible with the market mechanism including spot markets and trading hubs, while being flexible and capable of adapting to evolving market circumstances; and
(c) be compatible with the connected network access systems."

Before assessing each of the existing CAMs it has to be noted that requirements (b) and (c) must be seen independent from the chosen CAM:

Criteria b: be compatible with market mechanism

Whether a CAM fulfils this requirement depends on the specific gas market way of functioning and conditions but also on the frequency of storage capacity allocation and on the offer of short term storage products. Access to storage should fit together also with the products of the spot market and therefore the products themselves can be more important than the allocation mechanism: e.g. a monthly or daily storage contract.

Criteria c: be compatible with the connected network access system

Whether a chosen CAM fulfils this requirement depends on the design on network access in each country (mechanisms applied and time schedule). This requirement could be interpreted in the way that the CAM for the network access determines (or at least influences) the CAM for the storage access and vice versa. It would be also understood that CAM to access storage and the transmission network from the storage should be jointly designed and applied. Even combinations of storage and corresponding transport capacities (e.g. storage services offered at virtual hubs) could fulfil this requirement. The compatibility requirements in c) should also involve or extend to balancing issues.

4.1.2. Results of status review regarding allocation mechanisms

Now that the legal requirements regarding CAM (as laid down in the 3rd Package) are known, different capacity allocation mechanisms can be compared to these requirements. To do so, first the different most used capacity allocation mechanisms that were identified in the 2008 and 2009 status reviews are presented below.
The following mechanisms are used by European storage operators to allocate capacity:[5]

- → First come/committed first served (FCFS)
- → Capacity goes with the customer (CGWC)
- → Pro rata
- → Auction

First Come/Committed, First Served

First-Come-First-Served (FCFS) is an allocation mechanism in which capacity is allocated to a customer that first applies. In the case of first committed first served capacity is given to the customer that first signs an agreement with an SSO. When looking to the 2008 and 2009 status review, it becomes clear that the allocation mechanism FCFS has a number of disadvantages, especially in situations where capacity is scarce.
First of all, through the nature of the allocation method, FCFS is a method where customers who have the best information have the chance to book capacity. This could be existing storage customers and/or affiliated storage customers. Furthermore, efficiency is only achieved occasionally in the absence of congestion. As such, in case of contractual congestion the capacity is not allocated according to the willingness to pay, but to who has information first.
While some of these disadvantages could be improved by good organisation and improving transparency (e.g. via open subscription periods), the main weakness is that FCFS is not a market based allocation mechanism and can lead to economic inefficiency and risks discrimination. FCFS may not therefore give objective economic signals for new capacity. Only the applying SSOs get information when the demanded capacity is overbooked.
If capacity is not scarce in the storage market, FCFS could be an appropriate mechanism to allocate the capacity, having in mind the advantages in the handling process. It is therefore important to determine whether there is sufficient capacity in the market to apply FCFS. This analysis should not be limited to the storage capacity of one storage operator but include all storage operators in a market area.

[5] Others like lottery and ranking have only limited practical relevance; therefore there are not analysed.

Capacity goes with the customer (CGWC)

CGWC is an allocation mechanism whereby capacity is divided over suppliers, usually based on market shares. As can be seen in the 2008 and 2009 status reviews in many countries a part of the storage capacity is allocated pro rata, regularly in time, to users in proportion of the market share in the end customers market. Capacity for trading purposes is not allocated by CGWC. Most often CGWC is used to fulfil public service obligations.

CGWC offer some benefit in terms of protection of (considered) final customers. On the other hand, this CAM acts as a barrier for the development of competition in discriminating against new entrants and cross-border trade, in so far it may be used by the agents as a flexibility tool instead of to comply with public service obligations. From an economical efficiency perspective, allocation mechanisms based on market shares in supply markets should not be favoured because storage users get storage capacity according to their market position (in retail markets), but not according to their willingness to pay. In comparison with other allocation mechanisms, CGWC introduces a greater grade of complexity in the allocation procedures and in the design of storage services, determined by, for example, (i) the need to establish a correlation among market shares and the storage capacities that can be required, and the parties involved in this process (ii) the methodologies used to allow for new entrants to acquire storage capacity from the supplier replaced in serving final customers.

Pro rata

The status review 2008 showed that pro rata is widely used in case of physical congestion. In case of contractual congestion pro rata is mainly applied in connection with rationing according to market shares (capacity goes with the customer). In principal pro rata allocation means equal treatment of all storage users as storage users have security in getting capacity. When storage is scarce and there are regulatory security of supply (SoS) obligations, pro-rata according to SoS obligations may be the most convenient solution, in order to allow the agents to comply with their obligations.

On the other hand applying pro rata allocation is not economically efficient. The willingness of customers to pay is not taken into account. The storage operators receive information about the demanded storage capacity corresponding with a price level, but get no information on the price level that customers are willing to pay. If the time period between allocations is too long, new customers will face a barrier (until the new moment of allocation).

As storage operators do not get any information about the actual market demand, allocating by pro rata is especially problematic if new investments in storage facility are needed, given the distorted investment signals.

Auction

The findings of the status reviews 2008 and 2009 gave a bright support for applying auctions for storage capacity, especially in the situation when capacity is scarce. From the storage users perspective auctions are seen as non discriminatory and transparent. SSO's and also storage users have gained experiences with some auctions for storage capacity in the meantime.

Regarding economic efficiency, auctions as CAM have a clear advantage: auctioning is a market based mechanism because the storage capacity is allocated by the willingness to pay. Auctions have the advantage to give appropriate market signals for new investments for storage operators and to reflect the flexibility costs using storage for storage users. The willingness to pay should reflect the value of the storage capacity as a flexibility tool for the storage user. This could be different depending on the purpose of storage usage (seasonal modulation, daily shaping).
One condition for auctioning to be an efficient allocation mechanism is the presence of a significant number of bidders. Generally, an auction only produces efficient outcomes when there is competition between the bidders and absence of the possibility to strategically misbehave.
Therefore, when applying auctions in the storage markets this aspect should be analysed carefully; in some cases supporting measures (like restricting the market share of the dominant supplier in the storage market) could be useful. As with the pro-rata mechanism, it is also important to define the appropriate schedule to develop the successive auctions. If the time period between auctions is too long, new customers will face a barrier (until the new moment of allocation).

4.1.3. Assessment of allocation mechanisms based on the 3rd Package

The results of the assessment of compliance are summarized below under the assumption of an optimal process design of the various CAMs. As can be seen, auction is an allocation mechanism which fulfils the requirements of the regulation better than other CAMs.

Table 1: Compliance of different CAMs with regulation requirements

CAM	***Non-discriminatory and transparent***	***provide appropriate economic signals for the efficient and maximum use of capacity and facilitate investment in new infrastructure***	***be compatible with the market mechanism including spot markets and trading hubs, while being flexible and capable of adapting to evolving market circumstances;***
First Come/Committed, First Served	Weak	Weak	Must be seen in combination with the product
pro rata	Weak	Weak	Not applicable for storage as a trading tool at hubs
Auction	Strong	Strong	Strong
Capacity goes with the customer	Weak	Weak	Not applicable for storage as a trading tool at hubs

Conclusions

It is important to consider storage as part of the complete market and acknowledge that storage represents one part of the flexibility market. Therefore, when evaluating allocation methods and the risk to discriminate, regulators need to consider the SSO's position in both the storage market and its position (and that of its related undertakings) in the flexibility market.

In choosing the appropriate CAM which is in line with the Gas Regulation 715/2009, it is important to consider the relevant market conditions and market structure of that storage market and of storage as part of a flexibility market. It is necessary to make a differentiation between a market situation in which sufficient storage capacity is available and in which there is a scarcity of storage capacity.
Access to storage capacity is important for supplying final customers. Whatever the CAM is, it should not act as a barrier to new entrants. Therefore while in case of sufficient storage capacity FCFS could be an appropriate CAM, in the case of scarce storage capacity another CAM is preferred.
From an economic efficiency perspective, allocation mechanisms based on market shares in supply markets (CGWC) should not be favoured because storage users get storage capacity according to their market position (in retail markets), but not according to their willingness to pay. Furthermore such allocation methods may act as a barrier to entry for new entrants in the market and barrier to cross-border trade by only considering market share in the domestic market.
Auctions are the preferred capacity allocation mechanism, though this depends on the market structure. One condition for auctioning to be an efficient allocation mechanism is the presence of a significant number of bidders. An auction only produces efficient outcomes when there is competition between the bidders and absence of the possibility to strategically misbehave. Therefore, when applying auctions in the storage markets this aspect should be analysed carefully; in some cases supporting measures (like restricting the market share of the dominant supplier in the storage market) could be useful. It is also important to define the appropriate schedule to develop the successive auctions, to avoid it acts as a barrier for new entrants.

4.2. Congestion Management Procedures

4.2.1. Requirements for CMP in the 3rd Package

Just as for CAM, the 3rd Package (Article 17 of the Gas Regulation 715/2009) contains a requirement that provides the considerations that need to be taken into account when considering CMP for storage:

> *"3. LNG and storage facility contracts shall include measures to prevent capacity-hoarding, by taking into account the following principles, which shall apply in cases of contractual congestion:*
> *(a) the system operator must offer unused LNG facility and storage capacity on the primary market without delay; for storage facilities this must be at least on a day-ahead and interruptible basis;*
> *(b) LNG and storage facility users who wish to re-sell their contracted capacity on the secondary market must be entitled to do so."*

These requirements are general, not recommending the way the capacity should be revoked. Basically, unused capacity should be reallocated again at least on a day-ahead and interruptible basis. This implies that storage contracts in the future have to obtain a short term UIOLI and day ahead interruptible contracts and the possibility to trade the storage capacity. Other than that, Article 17 of Gas Regulation 715/2009 gives no more requirements for CMP.[6]

[6] For the re-allocation of the available capacity the discussion about best practice is the same as for CAM.

4.2.2. Results of status review regarding congestion procedures

Offering of secondary storage capacity

In some Member States a large part of the storage capacity is locked in contracts with more than 5 years duration, mainly in the Member States where FCFS is applied. The collected data does not provide a clear picture with regard to the effectiveness of different CMP at releasing unutilised capacity. According to the answers of the survey only a small amount of storage capacity was released in 2007.
As can be seen in the Status Review 2008 many of the SSOs have implemented interruptible products as CMP. As many of the SSOs do not publish real time storage data it cannot be verified if the unused capacity is offered without delay. The main question is if the interruptible product is useful for the storage customer. CMP for releasing long or mid-term firm storage capacity are still lacking.

Used congestion managements procedures

The CMP applied by SSOs are auction/pro rata, secondary markets capacity goes with the customers, UIOLI in different ways, but also FCFS. The main part of the SSOs' implemented CMP only use one measure e.g. interruptibles. Almost 30% of the responding SSOs did not apply CMP or gave no information.
The overview of the storage markets in several EU countries showed that when access to storage capacity is restricted because of long-term booking new entrants experience barriers to become more active on the market. In countries allocating capacity on basis of CGWC (France) or pro rata (Belgium), congestion mechanisms are not used as capacity is automatically allocated based on customer market share. In these Member States the problem primarily does not occur with hoarding of capacity but with an undersupply of storage capacity.

Secondary markets

For storage users, the lack of storage capacity is a barrier to market entry. To improve liquidity in the market the respondents prefer the intensified use of secondary markets. The first preference of the storage users who responded is selling unused capacity on secondary markets. The advantage of the secondary markets for the storage users is to optimize their portfolio and their costs, on the buying side secondary markets are often the only source available and the products traded there can be more flexible. But according to the responses of SSOs to the questionnaire the level of secondary market trading was still limited. Other SSOs stated that they do not have information about the level of secondary market trading.
When asked for proposals for improving secondary markets a large number of respondents saw no need for more regulation, but preferred more standardisation, also in storage contracts in the primary markets. Measures to develop more liquid markets are welcome. From the storage users' point of view a pre-requisite to the development of a secondary market is of course the existence of a transparent, non-discriminatory and flexible primary market and the obligation for users to sell the unused capacities.

UIOLI

Most SSOs implemented interruptible products as CMP. In UK for example it is applied on an interruptible basis by Centrica, in Spain a permanent UIOLI including bails (financial guarantees) is in force. Applying UIOLI for storage capacity was not preferred by the storage users, having in mind that storage users have different purposes for acquiring capacity, like seasonal balancing, security of supply and portfolio optimization.
As a congestion mechanism, UIOLI is actually applied in few countries (UK and Spain). Secondary markets are in place in many countries, but hardly applied and not liquid. Information on the use of the contracted storage capacity is lacking in most Member States. The implementation of a firm UIOLI is seen as difficult for storage products, restricting the flexibility in using storage products.

4.2.3. Assessment to requirements of 3rd Package

Continuing problems with CMP

The GGPSSO recommend that non discriminatory, market-based solutions shall be applied by the SSO or by the relevant national regulatory authority, pro-rata mechanisms for assuring non-discriminatory and competitive access and a balance between long-term contracts and short term contracts. Secondary markets could be seen as a market based solution, but they are still illiquid and not transparent, sometimes lacking the incentive for the storage users to sell their unused capacity. The problem of balancing between long term and short term contracts is still not approached in the storage markets.

Although some requirements of the current regulations and the GGPSSO are implemented by most SSOs there are still problems with CMP which could only be solved by more detailed requirements. Because there is no UIOLI implemented for firm capacity, secondary markets seem to be the only source to gain some storage capacity.

- **Illiquid and non transparent secondary markets**

As shown in the status reviews 2008 and 2009 the secondary markets are illiquid and not transparent. As secondary markets are sometimes the only way to get storage capacity, access to the secondary markets should be facilitated and the transactions costs should be reduced.

- **Lack of transparency**

Information of the actual use of contracted capacity is still not real time. This information on the amount of unused capacity is crucial:

→ to assess the supply situation on secondary markets,

→ to assess the probability of interruption

Transparency should be improved by the Gas Regulation 715/2009, Article 19:
“2. For the services provided, …. storage system operators shall make public information on contracted and available storage ….. capacities on a numerical basis on a regular and rolling basis and in a user-friendly standardised manner.
3. LNG and storage system operators shall always disclose the information required by this Regulation in a meaningful, quantifiably clear and easily accessible way and on a non-discriminatory basis.

4. …. storage system operators shall make public the amount of gas in each storage or group of storage facilities if that corresponds to the way in which the access is offered to system users, inflows and outflows, and the available storage capacities, including for those facilities exempted from third-party access. That information shall also be communicated to the transmission system operator, which shall make it public on an aggregated level per system or subsystem defined by the relevant points. The information shall be updated at least daily."

- **Release of capacity is voluntary**

Hoarding of storage capacity is not costless. If storage customers do not use their capacity they will have to pay it anyhow. In competitive retail markets suppliers with storage contracts would face competitive pressure to decrease their costs by releasing the unused storage capacity. In less competitive retail markets this pressure is lacking and the supplier has more possibilities to shift the storage costs of hoarding to the customer end prices. Having in mind the strategic importance of the access to storage, the storage customer could have an incentive to hold the capacity to keep the competitors out of the market. The storage user has to calculate the costs for keeping the capacity against the value of keeping the competitors out of the market.

Conclusions

Although some improvements in the organisation of CMP will be achieved by the new legal framework (transparency and release of capacity at least on a day ahead and interruptible basis) the access to unused capacity – mainly firm and longer term products - is still insufficient and has to be improved.

In both status reviews the development of secondary markets is welcomed by all respondents and should therefore be supported.

The liquidity of the secondary markets depends on how much storage capacity is released by primary customers and when it is released (capacity should be released enough in advance to allow other shippers to use it). Whether the release of capacity should be on a voluntary basis or mandatory depends on the market conditions, but should be discussed in any case.

Release of capacity only on an interruptible basis

The use of storage capacity is influenced by a variety of external factors: e.g. weather conditions (temperature), interruption in transportation or other storage facilities, variation of (industrial) consumption, prices at hubs. As a storage customer cannot exactly forecast his use in the future, he needs a range of flexibility in the storage use and should be able to decide which part of storage capacity he could release.

If a UIOLI or UIOSI is applied in this situation it has to be limited to releasing interruptible storage capacity, but storage could be used as a back-up securing supply when transport capacity is interrupted. Therefore the practical relevance of e.g. just interruptible day-ahead products has to be discussed.

5. Proposals for limited amendment of the GGPSSO

In the previous chapter, existing allocation mechanisms and congestion procedures have been presented and assessed with respect to the requirements for CAM and CMP in the 3rd Package. This assessment has identified a number of issues that should be addressed in the proposals for GGPSSO. This chapter presents the actual proposals. First, the existing guidelines as described in the GGPSSO[7] are presented, followed by corresponding proposals for the amended GGPSSO. The amendments include a validation as to why a proposal should be in the GGPSSO.

5.1. How will the GGPSSO be enhanced in a limited way

The existing GGPSSO are (largely) based on Regulation 1775/2005 and Directive 2003/55/EG. With the coming into force of the 3rd Package, some of the requirements regarding storage have changed and, as a consequence, the current GGPSSO should be revised accordingly. However, looking to the importance of CAM and CMP for storage, ERGEG is aiming to have the proposals in place before the 3rd Package comes into force on March 11th 2011. As a consequence, an amendment of the GGPSSO on CAM and CMP will take place.

5.2. Existing rules in GGPSSO for both CAM and CMP

The current GGPSSO hold the following guidelines:

According to the **existing GGPSSO** *SSO's shall inter alia:*

a. operate and maintain under economic conditions secure, reliable and efficient storage facilities;

b. offer third party access services on a non-discriminatory and transparent basis to all storage users requesting access to storage, including own affiliated companies, either using standard storage contracts or a storage code, developed by the SSO's in proper consultation with users, and approved or monitored as appropriate by the relevant national regulatory authority;

c. aim at accommodating market demand on a non-discriminatory basis, without imposing barriers to customer supply and to trade, whilst granting efficient and competitive access taking into account § 3.4 and 4.2;

d. establish rules on the use of capacity aimed at facilitating competitive and efficient use of that storage facility, in particular to discourage storage capacity hoarding. Maximise the use of available capacity and offer unused capacity at least on an interruptible basis, and services according to § 3.3;

e. treat commercial information confidentially, especially with regard to any affiliated company, in order to avoid any discrimination between storage users;

f. provide in a timely fashion the information required by storage users and transmission system operators;

[7] Guidelines of Good Practice for Third-Party Access for Storage System Operators (GGP SSO), March 2005 (Ref: E04-PC-01-14), http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_ERGEG_PAPERS/Guidelines%20of%20Good%20Practice/Gas/E04-PC-01-14_GGPSSO_2005-03-23_FINAL%20-%20March%202005.pdf

g. co-operate with TSO's through interoperability agreements in order to ensure efficient and secure operation of storage and transportation networks;
h. when asking or providing guarantees to storage users with respect to creditworthiness, ensure that these guarantees are non-discriminatory, transparent and proportionate and do not constitute any undue market entry barrier.

Storage capacity allocation and congestion management
4.1. Storage capacity allocation mechanisms and congestion management procedures shall:
a. facilitate the development of competition and liquid trading of storage capacity and be compatible with market mechanisms including spot markets and trading hubs while being flexible and capable of adapting to evolving market circumstances and discourage hoarding;
b. take into account the integrity and the maintenance of the storage system concerned as well as security of supply where relevant legal rules are incumbent upon the SSO;
c. not create undue barriers to market entry and not prevent market participants, including new market entrants and companies with a small market share, from competing effectively;
d. ensure the maximum availability and efficient use under economic and non-discriminatory conditions of technical storage capacity;
e. be subject to consultation with storage users.

The existing GGPSSO state:

4.2. In case of congestion:
a. non discriminatory, market-based solutions shall be applied by the SSO or by the relevant national regulatory authority, where appropriate;
b. alternative solutions such as pro-rata mechanisms may be considered if they ensure equivalence in terms of non-discriminatory and competitive access;
c. the SSO or the relevant national regulatory authority shall appropriately balance the portion of storage capacity contracted under long-term contracts and short term contracts, with the aim of promoting effective competition.

4.3. In no circumstances should the provisions of § 4.1 and 4.2 prevent customers from changing suppliers at any time of the year.
4.4. The SSO shall actively endeavour to discourage hoarding and facilitate re-utilisation and trade of storage capacity by all reasonable means, including at least the offer on an interruptible basis of all unused capacity (e.g. day-ahead release of non-nominated injectability and deliverability).
4.5. If, in spite of all measures aimed at preventing capacity hoarding, capacity remains unused and significant and prolonged contractual congestion occurs, the relevant national regulatory authority may according to national law introduce measures to ensure the efficient functioning of the market, including the efficient use of storage capacity.

5.3. Proposed limited enhancement

5.3.1. CAM

The following amendments of the existing GGPSSO regarding storage CAMs are proposed for public consultation and are structured as in the following example:

4.1. Allocation of storage capacity shall … :

a. **be made transparent by detailed publication of timing, organisation (schedule) and results of applied allocation mechanisms on the internet in the local language as well as in English.**

For reaching maximal market awareness and for ensuring the principle of non-discrimination, SSOs shall publish at least on their website (and common marketing/trading platform(s)) in English and the local language the actual design of the capacity allocation mechanism, including a schedule for regularly applied allocations, the actual procedure and its timing as well as further conditions that may apply and the results of the process.

b. **be subject to regular and/or NRA triggered consultation with the market, e.g. concerning the actual design of the allocation mechanism(s).**

To accommodate market needs best, well-structured, regular consultations with actual and potential storage users on the actual design of the allocation mechanisms, i.e. auction design, are expected to be a beneficial instrument.

c. **ensure compatibility (i.e. regarding timing / lead time) with the transport capacity allocation mechanism(s) of the connected TSO(s) and the organization of the gas trading market(s). Consequently, this also requires to align at least a basic set of storage products (with regards to duration and lead time for regular allocation) to transport products.**

For facilitating a gas market, easy access to storage services is very beneficial. To prevent burdening storage customers when trying to organise related transport services, compatible allocation mechanisms consequently also require aligning (the definition of) storage products to transport products (with regards to contract duration and lead times for regular allocation procedures (allocation schedule) of connected TSO's. Just as with transport products, storage products should be designed to make them exchangeable or interchangeable. It should be possible to commercialise these standard products on (electronic) trading platforms.
In the competitive flexibility markets the design of CAM should also take into account the organisation of the wholesale and retail markets, more precisely implying that products (duration), organisation and timing of storage CAM should be compatible with the organisation of the gas trading market(s).

d. **allow for and endorse the development and offer of combined storage and respective transport capacities as one product in order to allow for offering such storage services at the virtual hub.**

For even further improving services to storage customers, the further development of compatible storage and transport CAM could be concluded by an integrated storage and transport product, to be organised and offered by SSOs, if there is market demand for such a service. This would of course imply a close co-operation of the concerned SSO with the respective TSO(s).

e. **take into account the needs of balancing markets.**

Since storage services are often (sometimes even as the only measure) used for balancing purposes, SSOs should make sure that the offered services contain a.o. standard products, that are compatible with the balancing regime (both in terms of product definition and CAM organisation (timing)).

f. **start with an open subscription period (OSP). At least during the OSP, SSO's shall provide all relevant information including specific storage product descriptions, contract durations, (reserve) prices and the conditions for the respective CAM(s) to be applied according to the results of the OSP to the potential customers.**
The timing of the OSP should be fixed and aligned to the duration of the respective storage contracts.

The allocation process shall always start with an open subscription period (OSP) in order to ensure a transparent and non-discriminatory participation of all interested storage customers in the subsequent allocation procedure.
The relevant information to be provided at least during the OSP must be easily accessible to potential customers. Some of these data, which are unlikely to be modified over time, like product description, contract durations, general terms and conditions could also be published permanently (see also point a.).
Timing of the OSP should be fixed and aligned to the contract durations, meaning that both the OSP should be sufficiently start / end ahead of the beginning of the contract, and the length of OSP should reflect the duration of the contract. Examples: The OSP of a standardised yearly storage contract (representing a calendar year a) should always last from 1.10. until 15.12. of the previous year (a-1), the OSP for a daily storage contract (for day d) from 10:00 – 11:30 the day ahead (d-1).
When the OSP closes, SSOs have an overview of the storage capacity demand for the specific storage product. This demand determines the choice of the subsequent allocation procedure, e.g. if demand is less or equal to capacity on offer, allocation is straightforward (just as with FCFS, every customer gets allocated the capacity requested) at published prices (=minimum reserve prices in an auction design).
With regards to auctions, an OSP is typically part of an auction process: the period for submitting bids is identical to the OSP. (If a multi-level auction was applied, OSPs represent the several bidding rounds.)

g. **with respect to the applicable mechanism be determined by the results of the OSP:**
1. If demand exceeds supply - and unless national legislation stipulates differently - auctions should be implemented for allocation of all of the capacity offered with this

storage product or service in the preceding OSP.
2. If supply exceeds or is equal to demand, allocation is straightforward.

OSP can lead to two different situations: i.e. demand exceeds offer or not. This provision aim at defining a harmonised approach on the CAM to be used to deal with this two situations:

1.) *If the market for the selected product is tight (demand > offer):*
Only if there are no (other) national provisions on the regulatory treatment of storage capacity allocation mechanisms, the CAMs shall be adjusted to fit market needs sufficiently and simultaneously representing the best possible market-based mechanism. In such cases, as long as competition between the bidders and absence of the possibility to strategically misbehave are assured *,auctions should be implemented as the CAM of first choice, as such mechanisms seem to be the most market-oriented and value-reflecting way of allocating (especially scarce) capacity. Consequently, after a sufficiently long period of transition, FCFS methods should ultimately be disallowed.*
In the case of insufficient (geological) potential for developing a storage market, or if there is a very "tight" market for storage services in general, there are usually already national regulatory provisions or legal dispositions in place (such as priority access rules, pro rata regimes, CGWC etc. for example to fulfil public service obligations). In such markets, concerned SSOs shall not be affected by this rule.

2.) *If the market for the selected product is not tight (demand ≤ offer):*
Allocation is straightforward: Every customer gets allocated the capacity requested, leading to the same results as with FCFS in that case. But with the right auction design, an already implemented auction mechanism (for case 1.) could still be used in this case 2.): After the OSP, where "bids" (on capacity amount) have been collected, the bids are subsequently simply allocated at the minimum reserve price (or regulated price).

h. **be subject to review and ex-ante definition / approval by national regulatory authorities, if deemed necessary [by them].**

Since regulators – especially in the negotiated access regime – often do not have the powers to review, approve, define or at least influence storage CAMs ex-ante, it is proposed to include such a measure to allow for easier resolving of issues related to storage and gas market foreclosure(s).

5.3.2. CMP

The following amendments of the existing GGPSSO regarding storage CMPs are proposed for public consultation and are structured as in the following example:

4.2. In case of congestion:

a. [existing rule of GGPSSO]
b. [existing rule of GGPSSO]
c. [existing rule of GGPSSO]

d. SSOs should organise the implementation and standardisation of secondary markets for storage capacity. SSOs will provide a web-based platform that enables primary customers (without restraining the possibility for bilateral agreements[8]) to sell unused capacity on the secondary market. It should at least enable primary customers to make an anonymous bid (both bundled and unbundled storage capacity) that are visible to third parties. To foster standardisation, published master agreements templates are used and tradable capacity products are defined in alignment with primary capacity products. Furthermore a lead time for the implementation / acceptation / registration of secondary trades is published. A market mechanism should be in place that reflects the value of the offered products so as to stimulate the offering of unused capacity. SSOs connected to the same balancing zones or market areas should cooperate in the implementation and consolidation of secondary markets to improve liquidity. SSOs shall keep a record of all transactions on the secondary market, including the transfer price. The collected information shall be communicated to the NRA on a regular basis.

This provision aims to make sure that there is an effective platform available where primary customers can sell their firm capacity on a firm basis to secondary customers. Through an effective mechanism (for example: auction), primary customers have a financial incentive to offer the unused capacity on the secondary market. SSOs connected to the same balancing zones or market areas should cooperate in the implementation and consolidation of secondary markets to improve liquidity.

e. The terms and conditions for access to a storage, operation of the site for both the secondary market and interruptible products should be standardized, timely accessible for (potential) customers and published at least on the internet in both English and local language.

This provision aims to make sure that the content of storage contracts (including general terms & conditions) is known to (potential) customers who are interested in booking storage capacity. If these conditions are not timely known, a customer cannot make a good judgement whether it is (commercially) interesting to book storage capacity. Transparency is thus of most importance.

[8] The transfer of capacity rights by bilateral agreement does not exempt the primary capacity holder from the obligation to timely provide the concerned SSO with all information related to the capacity transfer, as imposed by law. Additionally any transfer of capacity rights must comply with applicable legal obligations and may not be submitted to conditions impeding the free negotiability of these capacity rights.

f. A primary customer makes, at best effort, a timely nomination to the SSO on the capacity that will be used. In case a primary customer, holding a significant part of capacity, has not made a nomination on a specified date, the involved SSO will (since the Regulation 715/2009 says that the SSO must offer unused capacity at least on a day-ahead and interruptible basis) ask this primary customer to relinquish its renomination right by selling back capacity to the SSO and offer the unused capacity on the secondary market on firm basis or SSO will offer non-nominated capacity on interruptible basis.

This provision aims to make sure that SSOs have a clear sight on any capacity that is nominated by a primary customer and complies with Regulation 715/2009. Thus, SSOs can make a timely judgement whether a primary customer is to offer unused capacity on the secondary market or, unused capacity can be (partly) offered as interruptible. The timing of the best efforts nomination should allow for quarterly, monthly, weekly and daily preview to SSO on capacity use.

g. Based on the received nominations and their own forecast, SSOs shall strive to maximise interruptible capacity products offer on a short-term basis, and in particular, on a daily basis (comment: the Regulation 715/2009 requires SSOs to offer unused capacity on at least a day-ahead and interruptible basis) by dynamically calculating available capacities taking into account actual temperatures, counter-flow nominations, any other information means available influencing capacity use.

This provision aims at maximising short-term capacity offers to the market, because visibility of actually available storage capacity is better, the closer the date and time of use is. This should both be in the interest of SSOs, that can maximise the selling of their services, and users, that can benefit from a higher availability of storage services at least on a short-term basis (quarterly, monthly, weekly, daily).

h. SSOs will offer a reasonable amount of interruptible capacity on a (short) term and interruptible basis and with a balanced mix of contract duration. Any unused capacity will be sold in both unbundled and bundled products. The design of products should be (cross- border) consulted with current and potential customers. Offered products should not be customized too much as to prevent "1 user only fit".

Through this provision, SSOs will offer any unused capacity so as to make sure that the storage capacity is optimally used and selling (and revenues) of any capacity is maximised. SSOs should offer bundled products (consisting of fixed proportions of injection, volume and emission) so as to make sure that market newcomers can use storage.

i. Information on the amount of non-nominated storage capacity should be provided by the SSOs on a day-ahead basis and the already sold day-ahead interruptible products. Similar best effort should preferably apply to longer outlooks. The data should be published on a website in time series (both for unbundled and bundled services) preferably close to real-time. Also historical data on (not) booked capacity should be published as to make an estimate of the probability of interruption.

By applying this rule, (un)bundled storage capacity that is not (yet) (re-)nominated on a short term basis will be made more transparent and therefore can easier be accessed and used by third parties via interruptible capacity. This measure can help – of course only to a limited extent – to ease the problem of congestion at least on a short term basis.

Concerning publication of non-nominated capacity, it is favourable to update the data close to real-time, because re-nominations can occur on a very short notice. Therefore, providing this information in time series (e.g. in a table with additional entries for every half hour) can give holders of interruptible capacity better transparency on the value (probability of interruption) of their interruptible capacity products.
The procedure in the event of an interruption of interruptible capacity, including, where applicable, the timing, extent and ranking of individual interruptions should also be published.

j. SSOs will take efforts to facilitate the transfer of working gas between a primary and secondary customer at the start and end of the duration of the interruptible or firm (bought at secondary market) contract. In case of a working gas transfer, the price should be market-based.

A primary customer will already have a certain amount of gas-in-storage (working volume). Without a proper arrangement, this gas should first be retracted from the storage before the secondary customer can inject gas. Through this provision, a secondary customer is ensured that gas can be retracted immediately once the contract period starts. At the end of the interruptible contract, the customer might need to reinject gas, so original user can start using storage immediately.

k. The price for interruptible capacity that a secondary customer should pay reflects the probability of interruption. Other pricing methods, incentivising active storage capacity use – like 'auctions' and 'pay as used' - can be used if storage prices are not regulated.

Article 15 (2a) of the Regulation 715/2009 states that the price for interruptible capacity is to reflect the probability of interruption. In addition, Article 1 of the same Regulation suggests that storage price principles are not harmonised. A customary option is to use a method where interruptible storage price contains a discount, reflecting the probability of interruption. Another option to promote active storage capacity use, is to use the "pay as used" method, and the use of an auction (under the appropriate, determined by NRA, circumstances) is also a possibility. In "pay as used" method the SSO is incentivised to create attractive products, which will be used, as SSO is only paid per withdrawn or injected commodity. In "auctions" attractive congestion revenues can be generated.

l. In case a storage facility has a high minimal flow and/or other technical constraints for relatively small users, SSOs will use reasonable endeavours to aggregate customers nominations and/or to administratively approach the largest user with request to flow gas to overcome the technical constraints of the storage.

Customers who like to flow a small amount of gas will have difficulty to do so if the minimum flow is high. Through this provision, SSOs will make sure that any technical difficulties regarding deliverability are overcome and that every customer can flow gas at any moment.

4.5 <u>new:</u> If, in spite of all measures aimed at <u>optimal capacity (re-)marketing and efficient utilisation</u>, capacity remains unused and if significant and prolonged contractual congestion occurs, the national regulatory authority <u>may define and introduce more detailed measures/provisions to effectively manage congestions, to ensure efficient capacity use in the above mentioned sense and to prevent capacity hoarding.</u>

This rule gives NRAs (especially in negotiated third party access systems, where ex-ante regulatory powers of NRAs are non-existent or at a very low level) the regulatory powers to introduce nationally adapted measures to deal with congestion. An example of such a measure could be a cautious restriction of re-nomination rights (where existent) of withdrawal/injection rates and (a limited) day-ahead offer of firm storage services [comparable to currently discussed CMP's at interconnection points].

6. Public Consultation questions

In the previous chapter, the proposals for enhancing the existing GGPSSO were presented. This chapter includes the public consultation questions.

In addition to inviting relevant stakeholders and market participants to respond generally to this consultation and participate in a workshop regarding CAM and CMP for storage (to be announced), ERGEG seeks the opinion of the respondents on a number of specific issues related to the scope and applicability of the document. The respondents are invited to reply and provide comments on the following questions:

(1) To what extent do you agree that auction is the best allocation mechanism for storage and what will be the implications?

(2) In your opinion, what are the most important aspects regarding transparency that should minimally be addressed by SSOs for both CAM and CMP?

(3) In your opinion, what is most important when designing UIOLI (including products and contracts) as to leave a storage user the flexibility to use its storage capacity when needed?

(4) In your opinion, to what extent should offered services and terms & conditions on secondary markets be standardised as to improve secondary trade of storage capacity? Is standardisation a way forward to enhance liquidity of secondary markets? What aspects of secondary markets (products, contracts, etc.) are the priorities to be harmonised?

(5) To what extent do you agree that (next to probability of interruption) pay-as-used can be applied as a pricing strategy for storage prices that are not regulated and what other pricing strategies would be suitable? How can pricing strategies incentivise new investment in storage and efficient use of storage?

(6) In your opinion, to what extent do you consider that combined products (i.e. storage services offered at virtual hubs) of storage and transport capacities are a useful and efficient service?

(7) In your opinion, what market mechanism (incentive) should be in place to stimulate a storage user to offer any unused capacity on the secondary market?

(8) In your opinion, to what extent is the (cross-border) offering of storage products/combined transport-storage products useful to market parties and what should these products (e.g. minimum requirements) look like?

(9) To what extent do you consider the proposals will facilitate allocation and congestion management of storage capacity? What other measures should be in place?

(9.1) In particular, what possibilities do you see to enhance efficient use of storage, reserved for public service obligations like e.g. strategic storage or other reserved storage? Under which conditions would additional use of such storage as (interruptible) short-term product or remarketing on secondary market be acceptable? Could you give examples from your day-day experience?

(9.2) In particular, what best practice for CAM and CMP should be in place for specific cases when parts of LNG terminal facilities potentially function as storage capacity[9]? Could you give examples from your day-day experience?

(10) To what extent would you agree NRAs should be endowed with additional competences in developing CAM and CMP?

[9] According to Article 2 of the Directive 2009/73:

'storage facility' means a facility used for the stocking of natural gas and owned and/or operated by a natural gas undertaking, including the part of LNG facilities used for storage but excluding the portion used for production operations, and excluding facilities reserved exclusively for transmission system operators in carrying out their functions;

In addition, Regulation 715/2009, explains that:

'storage capacity' means any combination of space, injectability and deliverability.

So it is implied that any CAM and CMP guidelines for storage could also be applied to LNG tanks when these are used to storage gas, and not for operational purposes. This is important not only because of the different technical characteristic of LNG terminals and underground storages, that may influence the CAM and CMP to be applied, but also because LNG terminals combine the function of introducing gas in the transmission network with storing LNG. According to this double function, different CAMs and CMPs may be implemented in a LNG terminal, and we see that this should be carefully addressed.