Council of European Energy Regulators

CALCULATION METHODOLOGIES AND TRANSPARENCY REQUIREMENTS WITH REGARD TO AVAILABLE CAPACITIES OF GAS TRANSMISSION, LNG AND STORAGE FACILITIES

1. CONTEXT

1.1. Transparency concerning transmission capacities can be required for different reasons : as input for the decision-making of the shippers, as input for planning activities. The recent questionnaire of the European Commission on long term contracts is an example of the latter. The present document focuses on the first.

1.2. As long as there is no "railway ticket" system, shippers will need to book capacity separately with each Transmission System Operator (TSO, grid-operator). The accessibility of commercial data concerning available transmission capacity is an important factor in ensuring the development of competition in the European gas market.

1.3. In the past the supply branch from vertically integrated gas companies could rely on direct information concerning available firm capacity in the present and the future. Most Member States have imposed "Chinese walls" where legal unbundling between the transmission and other activities is not already a fact or an obligation. These "Chinese walls" are meant to secure a level playing field among shippers, but are not easy to control.

1.4. Related to information there are two ways to secure a level playing field: refusing information to everybody or sharing the information with everybody. If information can be released publicly, equal access to the relevant information is the best way to secure a level playing field.

1.5. The shipper needs long term and short term information. The long term information is needed to prepare shipping contracts: which route to follow depends on the available capacities in the present and the future, gas quality requirements, transmission and storage prices, balancing requirements and the availability of ancillary services. The short term information is needed to organize the nominations, especially in the case of spot trading and in the case of interruptible transmission capacity.

1.6. Presently the shipper is obliged to apply for capacity to all possible grid operators, just to explore the possibilities before making an offer to a customer. This procedure requires a lot of work and may be slow as the shipper awaits the answers of the grid operators. The shipper has to disclose commercial sensitive information to all the grid operators. As a matter of fact, the shipper would prefer to get enough information anonymously to draw a first offer, and to apply for capacity only when his customer has agreed to the basic terms of the offer.

1.7. Gas transmission is a natural monopoly. Once connected to a transmission grid the system user is very strongly bound to this particular TSO. Over long distances there may be the possibility of 'competing pipelines' but this is likely only to result in duopoly as opposed to

monopoly. It would make little sense to develop competitive gas networks at a local level (both distribution and local transport). Competition in the gas transmission sector is too marginal to consider it as a competitive market.

1.8. In most Member States the law allows competition from other grids or from direct pipelines. In long distance transmission there can be a choice between several routes, and consequently between several TSO's. For these reasons TSO's can be reluctant to publish the level of use of their own grid. In spite of this, in order to maintain a level playing field CEER strongly recommends to reach an agreement at the European level concerning these transparency requirements. The guidelines proposed in this document are the minimum standards.

1.9. On the other hand, some system users contractually impose the confidentiality of the subscription. If the system user is the only one who has booked capacity on an entry point, this could prevent the TSO from releasing information concerning that entry point, unless he is authorized by the system user, or obliged to do so by law. The regulators should be given, if this were not already the case, the powers to refuse the confidential treatment of aggregate data.

1.10. CEER considers the publication of available firm capacity essential to develop European competitive gas markets.. Within a competitive market, with several suppliers in every part of Europe, such a system does not disclose information concerning individual system users. For effectively competing suppliers there are far more advantages than disadvantages deriving from such a publication.

1.11. In markets which are strongly dominated by one or two suppliers, transparency requirements can harm these incumbents by revealing sensitive data concerning their activities. Of course, if there is only one supplier on a market, the "aggregate" information allows some deductions concerning one single market player. CEER believes however that there is a strong public interest in promoting competition even though this might reduce the absolute levels of confidentiality enjoyed by incumbents in the short term. Once competition is established, incumbents enjoy the same levels of confidentiality as other market participants.

2. DEFINITIONS

The definitions of the European Directive apply. The bullets are comments and are not part of the definitions.

"transmission" : [European Directive] the transport of natural gas through a high pressure pipeline network other than an upstream pipeline network with a view to its delivery to customers.

"normal cubic meter (or, $m^3(n)$)" : the quantity of gas that fills a volume of one cubic meter at a temperature of 0°C and an absolute pressure of 1.01325 bar

"storage facility" [European Directive] a facility used for the stocking of natural gas and owned and/or operated by a natural gas undertaking, excluding the portion used for production operations.

"LNG facility" [European Directive] a terminal which is used for the liquefaction of natural gas or the offloading, storage and re-gasification of LNG.

"system" [European Directive] any transmission networks and/or distribution networks and/or LNG facilities owned and/or operated by a natural gas undertaking, including its facilities supplying ancillary services and those of related undertakings necessary for providing access to transmission and distribution.

"system user" : [European Directive] any natural or legal person supplying to, or being supplied by, the system.

- In some countries the concept of shipper has been introduced. The transmission undertaking only deals with those who are licensed as shipper.

- In other countries the system user is either a (licensed) gas supplier or a consumer. In some cases the transmission undertaking may require from the system user a mandate that he is acting both on behalf of the supplier and the consumer.

"useful capacity" : maximum capacity minus the security margins, if applicable, and taking into account the limitations of the network.

- "maximum capacity" : performance limit of a gas installation according to its design, and depending on the technical and operational conditions.

  The maximum capacity corresponds normally with the "nominal" capacity of that single part of the network, regardless the configuration of the network. The maximum capacity of a natural gas pipeline is essentially function of the diameter and the length of the pipe and the maximum available difference of pressure on this pipe.

- In the case of a pipeline the actual difference of pressure between each end of the pipe is given by the network model, taking in account the gas flows in the surroundings of this particular transmission installation. The limitations of the network are related to gas flows. The calculation of the useful capacity is based on scenarios with assumptions concerning injections and off-takes.

"firm capacity" : gas transmission, LNG or storage capacity guaranteed by the transmission, LNG or storage undertaking

- This term focuses on the relation between the transmission, LNG or storage undertakings and theirs customers, the system users. It is up to the transmission, LNG or storage undertakings and the grid operator to secure that this capacity is effectively available.

- This definition stays regardless of the existence of a penalty for interruption, and regardless of the legal modality of this commitment.

- Where a firm right cannot be honoured, the TSO may repurchase the right to flow at a market based price. Compensation is, therefore, at market determined prices and so will reflect the expected 'value in use' placed upon the right to flow by the holder.

"non-firm capacity" : gas transmission, LNG or storage capacity that can be interrupted by the transmission, LNG or storage undertakings according to the conditions stipulated in the access contract.

- The contract specifies the allowed duration, frequency and timing of the interruptions. It also specifies which previous notice is required.

- "Interruptible capacity" : capacity which is not guaranteed in any way by the TSO.

- Interruptible capacity is an extreme form of non-firm capacity. Schematically, firm capacity could be presented as 100% guarantee, interruptible capacity as 0% guarantee and non-firm as capacity guaranteed to an extent within a range from 0 to just below 100%.

"available firm capacity" : the additional firm capacity that can be booked at that moment exactly.

"available operational capacity" : the gas transmission capacity technically available in the system that has not been nominated by the holders of capacity rights within the limits of this booked capacity.

"primary market" : capacity traded directly by the TSO.

"secondary market" : capacity traded otherwise than on the primary market.

- Secondary market covers very different realities whether it leads to the take-over of a long term contract or the unused capacity for the next day.

3. CALCULATION OF AVAILABLE FIRM CAPACITIES

3.1 This chapter is written for gas transmission. Similar rules apply to storage and LNG activities.

3.2 The grid operator develops a gas flow model for his network, where the sum of all existing contracts gives the starting point (the reference scenario).

3.3 The TSO shall ensure that the capacity needed to meet his own public service obligations (PSO's) are included in the model. The other market players take in account their PSO's when contracting capacity with the TSO. The TSO cannot discriminate the system users according to their PSO's.

3.4 To calculate the useful capacity at point X of the grid, the grid operator increases the flow in point X until his grid reaches saturation. All the other parameters are kept constant such as in the reference scenario, except that an increase in entry must be balanced by an increase in exits.

3.5 The location of this incremental off-take is an important assumption. A theoretical approach would first require to draw the area (physically) irrigated by the entry. The additional off-takes should be located in the centre of gravity of this area or spread all over this area.

3.6 The difference between the useful capacity at point X and the sum of all booked capacities at this point gives the available firm capacity.

3.7 Of course, it will not be possible to contract all the available firm capacity calculated in this way. Once a new capacity is committed, the reference scenario must be updated and this could lead to new values of the available firm capacity at every point of the grid.

3.8 This calculation method does not take into account the limitations of the neighbouring grids. A further development would require a European gas flow model. The exit capacity at a border point is published as an entry capacity to the neighbouring grid; as long as both values are calculated separately on independent gas flow models, they can differ from each other.

3.9 The booked capacities include both the capacities booked by the eligible customers and those booked by incumbents for their captive customers. When a transport contract expires the corresponding capacity must be made available to the market, and published as such.

3.10 In the captive market the incumbent usually did not establish transport contracts between his transport and supply department. To ensure that the transition happens in a transparent way, it must be stated that all capacity booked for captive customers expires when the corresponding market becomes eligible, and that incumbents can not have pre-emption rights on capacities booked for captive customers when these become eligible.

To meet this requirement, the TSO must establish with the incumbent(s) separate transport contracts for eligible and captive customers, as if there were two suppliers. This requirement is also necessary to control the absence of cross-subsidies.

3.11 The evolution of the data over 20 years forward should be published. This takes into account the fact that existing contracts expire, and that the corresponding capacity is made available to be allocated according to the local rules. The time scale of 20 years is in line with what is expected to be the longest term for standard contracts.

4. GUIDELINES

4.1. To calculate available firm transmission capacity requires a network model and flow simulations where due account is taken of the fact that non-firm transmission contracts allow to alleviate the peak flows. The calculation methods used by the network models should ensure consistent principles are used between TSO's at a European level.

4.2. LNG facilities must offer and publish separately the capacities of the sea terminal, the regasification plant and LNG storage. The operators of storage facilities publish separately the volume and flow (injection and off-take) capacities.

4.3. The minimum data to be published by the system operators on their website are the capacities at each LNG and storage facility and each entry point of interconnected networks, in both directions (if applicable) :

a) the physical flows : annual average and annual peak

b) the total contracted firm and interruptible capacity

c) the available capacity on the primary market

d) an interactive standard form giving the final tariffs for a case specified by the system user

e) (in real time) the aggregate amount of nominations at each entry point.

4.4. In the very short term the requirement is to monthly update the publication of the data. Within a term of one year :

- all values should be updated each time the grid operator commits himself for new firm capacity and each time a contract for firm capacity expires
- screen based capacity booking must be possible on the primary market.

4.5. The evolution of the data over 20 years forward should be published and updated at least twice a year. This takes in account the expiration date of all contracts, including the capacity granted for the captive market.

4.6. The system users, especially those who can be interrupted, must know the circumstances that could affect the availability of capacity. The system operator publishes, with at least six months notice, an account of works planned on its facilities, for maintenance or development of the installations, and which will affect, be it locally, the amount of available capacity.

4.7. If the system operator denies a capacity which was marked as available, or if he grants more capacity to a system user than what appeared to be available, he will have to motivate his decision to the regulator.

4.8. On the other hand, if the system operator denies a firm capacity because it exceeds the published available firm capacity, this can be considered as a duly substantiation of refusal. This requires that the regulator has approved the calculation method of the published available capacities, and that the anti-hoarding mechanisms and congestion management rules are met. The system user retains the possibility of appeal to the regulator on any decision of the system operator.

4.9. The regulators should be given, if this were not already the case, the powers to refuse the confidential treatment of aggregate data.