# Launch Documentation for the Incremental Capacity Proposal

# 1. Introduction

This document was prepared by ENTSOG, an organisation currently comprising 43 TSOs from 26 European countries. This document represents the Launch Documentation ('LD') for the future amendment on incremental and new capacity to the Network Code on Capacity Allocation Mechanisms ('Incremental Proposal'). The Incremental Proposal will also affect parts of the future Network Code on Harmonised Transmission Tariff Structures for Gas ('TAR NC'), as foreseen by Sections 2.4.1 and 3.5 of the Framework Guidelines on rules regarding harmonised transmission tariff structures for gas (TAR FG).[1] For the avoidance of doubt, this LD does not interfere with the development process of the TAR NC other than for the portions to be based on Sections 2.4.1 and 3.5 of the TAR FG.

The development of the Incremental Proposal is based on Article 7(1) of the Gas Regulation (Regulation (EC) No 715/2009). ENTSOG's obligation to submit the Incremental Proposal to ACER was triggered by the EC invitation letter sent to ENTSOG on the 19th of December 2013. The EC invitation specified the deadline for this task as the 31st of December 2014.[2] Simultaneously, ENTSOG received the EC invitation to draft the TAR NC until the same deadline.[3]

ENTSOG's obligation to conduct an extensive consultation process during the preparation of a network code is stipulated in Article 10(1) of the Gas Regulation, which is equally valid for the preparation of an amendment to a network code. This LD provides the starting point for the stakeholder discussion and intends to facilitate the gathering of their feedback. The topics covered in this LD are subject to further discussion during the Stakeholder Joint Working Sessions ('SJWS') scheduled for the

[1] Published on ENTSOG's website: http://www.entsog.eu/public/uploads/files/publications/Tariffs/2013/FG%20on%20Harmonised%20Gas%20Transmission%20Tariff%20Structures.pdf.
[2] Published on ENTSOG's website: http://www.entsog.eu/public/uploads/files/publications/Tariffs/2013/20131217%20Invitation%20ENTSOG%20draft%20Incr.pdf.
[3] Published on ENTSOG's website: http://www.entsog.eu/public/uploads/files/publications/Tariffs/2013/20131217%20Invitation%20ENTSOG%20draft%20NC%20TAR.pdf.

period from February to April 2014.[4] The LD captures the preliminary observations and does not prevent the further development of the respective topic.

For the avoidance of doubt, this LD shall not be construed as part of the future Incremental Proposal to be submitted to ACER by the 31st of December 2014. This LD is publicly disclosed to the market for information purposes only and without any commitment whatsoever from ENTSOG as to the final content of the Incremental Proposal. The final content of the Incremental Proposal shall be subject to the outcome of the Committee procedure according to Article 5a(1) to (4) and Article 7 of Council Decision 1999/468/EC[5], as foreseen by Article 28(2) of the Gas Regulation.[6] Additionally, the information contained in this LD shall not be construed as giving rise to any specific right or obligation whatsoever to ENTSOG or any of its Members as to any user of this LD. The LD does not constitute a legally binding document.

**Background**

The Network Code on Capacity Allocations Mechanisms (CAM NC)[7] focuses on capacity allocation for already existing capacity at interconnection points (IPs)[8] in gas transmission systems. The XXII Madrid Forum of October 2012 has recommended that processes are established by which capacity demand beyond the offer of existing capacity can be satisfied in a market-based manner.[9] ACER has therefore been requested to elaborate procedures for market-based identification and allocation of incremental capacity at existing IPs and new capacity. These procedures are captured in the 'ACER guidance to ENTSOG on the development of amendment proposals to the Network Code

[4] The dates and the topics of SJWSs will be available within the Final Project Plan to be published on ENTSOG's website at the end of January.

[5] Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the European Commission as amended by Council Decision 2006/512/EC of 17 July 2006.

[6] Currently the Gas Regulation provides for the application of the regulatory procedure with scrutiny. In case of the change of the applicable procedure due to the Lisbon Treaty, the new procedure will apply accordingly.

[7] Commission Regulation (EU) No 984/2013 of 14 October 2013 establishing a Network Code on Capacity Allocation Mechanisms in Gas Transmission Systems and supplementing Regulation (EC) No 715/2009 of the European Parliament and of the Council // OJ L 273, 15.10.2013, p. 5.

[8] As defined in Article 3(10) of the CAM NC.

[9] http://ec.europa.eu/energy/gas_electricity/gas/forum_gas_madrid_en.htm

on Capacity Allocation Mechanisms on the matter of incremental and new capacity' (ACER Guidance).[10]

As explained above, the Incremental Proposal encompasses two pieces of work: the one based on ACER Guidance and the one based on the TAR FG Sections which are related to incremental and new capacity. Hence, the result of the 1st piece of work would constitute an amendment to the CAM NC, and the result of the 2nd one would be part of the future TAR NC.

The timescale for developing the Incremental Proposal is very tight and could have potentially high impact on all stakeholders who are affected by investment in new infrastructure at existing or new IPs. A well-organised interaction with all stakeholders is therefore essential to develop an Incremental Proposal that is acceptable by all and meets the objectives of the ACER Guidance and the TAR FG. To meet this challenge, it is vital to have a robust, inclusive and transparent process that ensures the elaboration of a well-considered Incremental Proposal.

## 2. Objective and related documents

This document serves as launch documentation for the Incremental Proposal.

It is intended to quick start the discussions on the content of the draft Incremental Proposal and aims at providing the basis for the discussions that will be held during the interactive Incremental Proposal development period. Therefore, this LD contains approaches, concepts and options for further debate among TSOs and with market participants.

ENTSOG is looking forward to engaging with stakeholders during the Incremental Proposal development process, especially during the Stakeholder Joint Working Sessions (SJWS), which are sessions that will be dedicated to the discussion of specific topics of relevance to the draft Incremental Proposal. The results of such debates will feed into the preparation of the draft Incremental Proposal which will be carried out by ENTSOG.

[10] Published on ACER website on 2 December 2013: http://www.acer.europa.eu/Gas/Framework%20guidelines_and_network%20codes/Documents/ACER%20Guidance%20on%20NC%20CAM%20Amendments%20(final).pdf.

In particular, ENTSOG will be seeking stakeholders' views on the following topics:

- When to offer incremental and new capacity
- Co-ordination requirements and information provision
- Integration of incremental capacity into the CAM NC auction design
- The use of open season procedures
- Economic test and associated parameters including tariffs

**List of related documents:**

| Nr | Document title | Reference | Date | Issued by: |
|---|---|---|---|---|
| 1 | Invitation letter by EC to amend CAM NC | Ref. Ares(2013)3773204 | 19 December 2013 | EC |
| 2 | Invitation letter by EC to draft TAR NC | Ref. Ares(2013)3773211 | 19 December 2013 | EC |
| 3 | ACER guidance to ENTSOG on the development of amendment proposals to the Network Code on Capacity Allocation Mechanisms on the matter of incremental and new capacity | | 3 December 2013 | ACER |
| 4 | ACER Framework Guidelines on rules regarding harmonised transmission tariff structures for gas | 01/2013 | 3 December 2013 | ACER |
| 5 | EU Regulation on establishing a Network Code on Capacity Allocation Mechanisms in Gas Transmission Systems | EU 984/2013 | 14 Oct 2013 | EC |
| 6 | Draft ANNEXES to the CEER Blueprint on Incremental | C13-GIF-06-03a | 24 June 2013 | ACER/CEER |

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|---|---|---|---|---|
| | Capacity | | | |
| 7 | CEER Blueprint on Incremental Capacity | C13-GIF-06-03 | 23 May 2013 | CEER |
| 8 | Impact assessment of policy options on incremental capacity for EU gas transmission | | February 2013 | Frontier Economics (prepared for ACER) |
| 9 | EU Regulation on conditions for access to the natural gas transmission networks and repealing Regulation | EC 715/2009 | 13 July 2009 | EC |
| 10 | ERGEG Guidelines for Good Practice on OS procedures | C06-GWG-29-05c | 21 May 2007 | ERGEG |

## 3. Scope of the Incremental Proposal

The ACER Guidance is clarifying the scope of the Incremental Proposal and the corresponding amendment of the CAM NC:

> **2. Amendment Guidance**
>
> The CAM NC amendment should cover the following sections 2.a) - f). It should be drafted as text elements to be inserted into the Commission Regulation No 984/2013 of 14 October 2013 constituting the NC CAM. The new provisions should apply to all incremental and new capacity, where the decision to invest is market-based, i.e. based on binding user commitments made during a CAM auction or an open season. Changes to the NC CAM should be restricted to those necessary for enabling market-based identification and allocation of capacity beyond existing capacity and should be kept to the minimum necessary.

It defines that the process for the offer and test of incremental/new capacity to be included in the amended CAM NC and the TAR NC shall only apply to market based investment projects which are based on binding user commitments made during an auction or an open season. The amended CAM NC provisions on incremental capacity will not be applicable to investment projects that are not based on upfront binding commitments by network users. TSOs will have the flexibility to decide in co-ordination with their respective NRA whether or not the incremental process defined in the CAM NC and the TAR NC is to be used for an investment project.

The CAM NC amendment should stipulate that a capacity expansion offered in an integrated auction or an open season procedure shall be considered economically feasible if an economic test applied to it is passed. This means that a predefined level of binding network user commitments necessary to justify the investment from a financial perspective is obtained. If the economic test is passed, the project should proceed with the next phases of project development towards commissioning. An economic test is not necessarily required when the decision to build capacity is based on legal requirements or national infrastructure planning requirements. Such capacity shall be offered in the normal allocation mechanism for existing capacity.

Economic feasibility is not equivalent to and does not presume efficiency in the execution of an investment, as assessed within the respective regulatory regimes.

The ACER Guidance is furthermore clarifying that an economic test is not necessary if an investment project is based on legal requirements, which in some Member States can e.g. partially be the case for national network development plans. An economic test that is passed for a market-based project means that the investment project shall *"proceed with the next phases of project development towards commissioning"*.

# 4. High level process description for developing incremental and new capacity

This chapter explains and illustrates the general process for the offer and test of an incremental/new capacity project. This process is derived from the content of the ACER Guidance and the detailed proposals by ENTSOG to fulfil the requirements defined in it.

The entire process for offering and testing an incremental/new capacity project is the content of the Incremental Proposal. The process will be conditional to specific indicators showing a sustained demand for additional or new capacity at e.g. a specific interconnection point or on a certain 'transportation route' through more than two entry-exit-zones. These indicators and the criteria to assess the demand for incremental/new capacity are further described in the following chapters of this document.

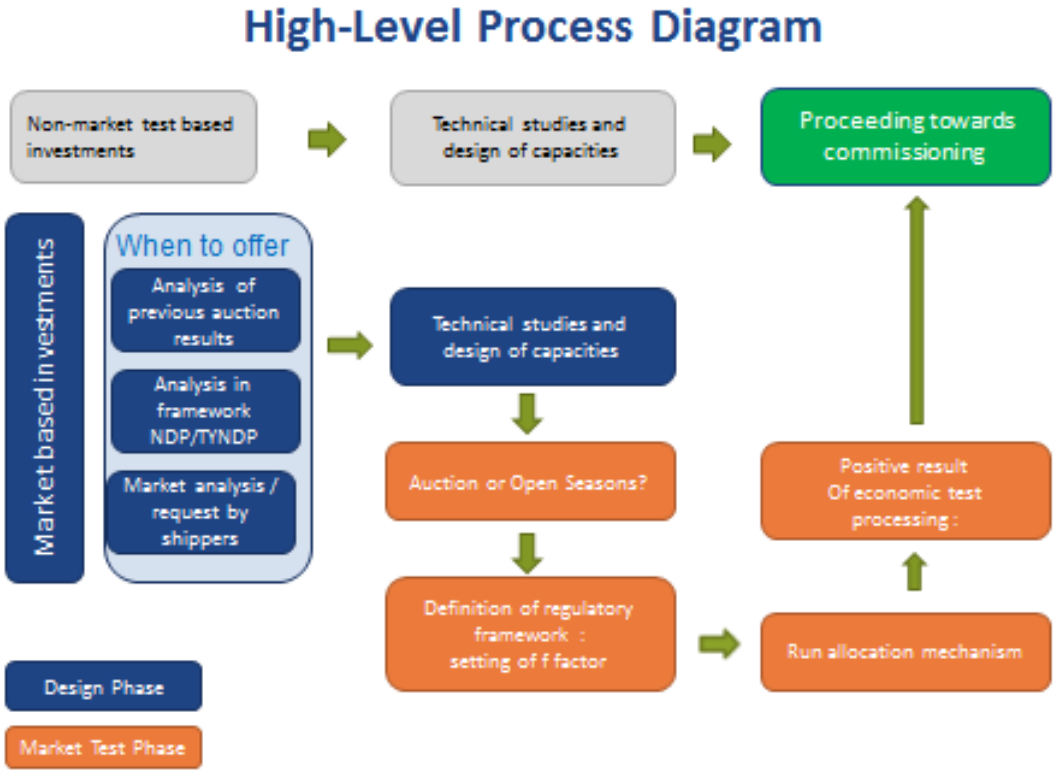
Once TSOs that form the interconnection linking two hubs acknowledge that criteria reflecting a sustained demand for additional capacity is met, the assessment and development of possible incremental/new capacity starts with discussions between TSOs and the respective NRAs to define conditions of a potential project. Based on the

experiences of TSOs and the requirements stated in the ACER Guidance it follows two major phases:

- A **design phase**, in which the process is being triggered and the technical design of a potential investment is defined (including alternative technical designs and associated capacity increment levels) and the costs related to the investment options are estimated;

- A **market test phase**, in which the economic test is prepared and – following the run of the allocation mechanism (auction or open season) - is applied to the demand scenarios developed in the first phase. Thereby the economic viability of the investment is tested and if passed, it proceeds with the next phases of project development towards commissioning.

The following diagram is aiming at illustrating the entire process for developing incremental/new capacity on a high level:




The diagram is differentiating between market based (blue and orange boxes) and non-market test based (grey boxes) investment projects and illustrates the steps a potential investment project needs to pass. For non-market test based investment projects, the technical studies on the features of the investment are done by the TSO based on e.g. legal requirements and the final investment decision is taken in cooperation with the respective NRA without testing the existence of upfront commitments by network users. The market based investment projects are based on upfront commitments by network users and run through the project phases mentioned above. The capacity expansion design phase – illustrated by the blue boxes – lasts until the completion of scenarios containing different possible increment levels and their associated costs. The orange boxes identify the market test phase in which the capacity allocation mechanism is chosen and the economic test is prepared and held. A positive result of the economic test at the end of this phase will lead to next phases of project development towards commissioning. Especially in open season procedures the two phases can be

overlapping, as the technical design can be fine-tuned in parallel to the process that is leading to allocate capacity.

As clarified in chapter 3, the design and offer of capacity resulting out of non-market test based investment projects is not within the scope of the Incremental Proposal as defined by the ACER Guidance and the Framework Guidelines for the TAR NC. The process to assess these investment projects is therefore not covered in this launch documentation. The following chapters of this document will in detail describe the activities and processes of market based investment projects to be included in the amended CAM NC and the TAR NC.

# 5. When to offer incremental and new capacity

## 5.1. Conditions for the offer of incremental/new capacity

The ACER Guidance states that an offer of incremental or new capacity should be made when the following conditions are met:

**b) When to offer incremental and new capacity**

The CAM NC amendment should, as a minimum requirement, require a formal offer of incremental or new capacity, where there is likely to be significant unsatisfied demand for capacity. An offer of incremental or new capacity should be made by the existing TSOs or new entities certifiable as TSOs when at least one of the following conditions is met. This does not preclude more frequent or regular testing of demand.

- The ENTSOG Ten Year Network Development Plan (TYNDP) identifies a physical capacity gap in the sense that an area is undersupplied in a reasonable peak demand scenario and incremental or new capacity at the IP in question would be able to close the gap; or a national network development plan identifies a concrete and sustained physical transport requirement;

- No yearly capacity product based on existing capacity will be on offer (as the yearly product is fully booked) in the year when incremental capacity could be offered first and in the three subsequent years (capacity set aside for the short term is considered not offered). In the case of several IPs between two entry-exit systems the requirement refers to all IPs between these entry-exit systems taken together.

- Network users indicate in a non-binding manner to TSOs their need for and their willingness to underwrite incremental or new capacity for a sustained number of years and this transport need leads to physical constraints after exhausting all other mechanisms to maximise the availability of existing capacity.

ENTSOG supports the role that the ACER Guidance gives to a potential undersupply of an area identified in ENTSOGs TYNDP and national NDPs.

The ACER Guidance is explicit on auction results indicating a scarcity situation at IPs leading to the offer of incremental/new capacity. The Incremental Proposal shall clarify that the total absence of yearly capacity products in the year when incremental capacity could be offered first and in the three subsequent years should lead to the offer of incremental capacity between the two respective entry/exit-zones. It is however important to highlight that this criteria refers to all IPs or VIPs connecting the two entry-exit-zones in sum and that it is only met if no yearly capacity products are on offer at any of the respective IPs or VIPs. This should also be the case for IPs that cannot be grouped to a VIP. Capacity set aside for the short-term capacity auctions shall be regarded as not offered in the yearly capacity auction.

Non-binding indications by network users, the third condition mentioned in the ACER Guidance, require a higher consideration and clarification in the Incremental Proposal. This is due to the fact that there is no standardised process yet for non-binding indications and that rules on expressing and treating these requests now need to be established.

ENTSOG is of the view that all three conditions can be expected to point into the same direction in case an actual scarcity situation exists at a specific IP or along a route and that non-binding indications should therefore reflect the findings of the TYNDP/NDP and the latest auction results. Due to the nature of a non-binding request, it might however be the case that non-binding indications show a demand, in general higher than the one reflected in the auction results or in the TYNDP/NDP. This could for example be the case when several network users compete for the same expected increase of the market. It would be inefficient to go through the entire capacity expansion design phase for offering incremental/new capacity if e.g. the latest auction results display that the existing capacity satisfied the demand and that incremental capacity is most likely not needed. This could neither be in the interest of the network users as the costs for the extensive assessment processes will finally be reflected in the tariffs.

Based on this, ENTSOG is of the opinion that the conditions for an incremental process should be assessed in relation to each other. The combined signals from the TYNDP/NDP, the auction results and non-binding requests should be unambiguous and clearly point to one direction. If this is not the case, the TSO will provide an assessment of the situation including a proposal whether or not to offer incremental or new capacity. This assessment should be offered to the NRA for approval and can, if needed,

be discussed with the market participants. Such an approach would ensure a higher degree of efficiency in the process and allow more flexibility for network users to express their demand in a non-binding manner.

The alternative to a combined assessment mentioned above would be to incentivise network users only to express a level of demand for incremental/new capacity, for which they are actually willing to underwrite capacity contracts for and to limit the conditions under which TSOs can only be obliged to assess investment projects solely based on non-binding indications by network users. Chapter 5.4 is dealing with these conditions and potential incentive mechanisms. ENTSOG wants to highlight that this alternative approach is only relevant if the combined assessment as elaborated in this paragraph is not acceptable to stakeholders.

## 5.2. Time window for expressing non-binding capacity demand indications

The ACER Guidance is asking ENTSOG to define a specific time window in the Incremental Proposal for network users to express demand for incremental/new capacity in non-binding indications to the TSO:

> ENTSOG should propose draft provisions for NC CAM for a cost efficient, transparent, European process, for instance on the allocation platform(s), including a time window in each year when such interest can be expressed.

ENTSOG supports the view of ACER that a defined common time window is necessary for expressing demand for incremental/new capacity in order to ensure an efficient and transparent process. This is because TSOs need to have a full picture of demand for incremental/new capacity between entry-exit-zones at a certain point of time in order to be able to co-ordinate the common assessment of investment alternatives. Furthermore it is likely that several network users will indicate demand for incremental/new capacity at the same IP or along the same transportation route, thus indications can be assessed in combination to ensure an efficient process.

The timing and length of this indication window is to be chosen carefully, as some TSOs are legally obliged to consider network planning projects in national network development plans, which are scheduled differently across the member states of the European Union. Furthermore, common sense would suggest that a demand for incremental/new capacity can only be expressed once network users know if existing

capacity is available, thus speaking in favor of a time window for capacity demand indications after the long-term capacity auctions as defined in the CAM NC.

ENTSOG is therefore suggesting an at least bi-annual time window for expressing non-binding capacity demand indications starting with the calendar day of the first round of the long-term capacity auctions (first Monday in March) and ending on the last calendar day of April (April 30th), thus allowing network users a period of approximately 8 weeks to evaluate and express their demands. ENTSOG believes that such a time window shall be offered with an appropriate frequency to allow network users to cover their capacity demand and to allow TSO to cumulate information about all the criteria relevant for the offer of incremental capacity.

Requests for incremental/new capacity expressed within the proposed time window of a particular year will be assessed by the TSO in coordination with the respective adjacent TSOs and with TSOs within the same market area, if any. As argued in 5.1, ENTSOG suggests a combined assessment of the indications in the context of the upcoming TYNDP/NDP and in combination with the latest auction results. In case the preconditions show a consistent picture of a demand the request can be regarded as reasonable and incremental/new capacity can therefore be offered in the next possible long-term capacity auction or in an open season procedure. The earliest possible auction for incremental/new capacity to follow an indication by a network user would therefore be in the year following the time window of the indication. It might however very well be the case that the time schedule of the respective national NDP and/or TYNDP only allows a potential offer at a later date than the year to follow an indication. Besides this, the complexity of a project might extend the time needed for the design phase leading to a later offer of incremental/new capacity as well as the lumpy nature of an investment might make a later offer beneficial in case demand would otherwise be split.

### 5.3. Required content of non-binding capacity demand indications

The ACER Guidance is calling for minimum requirements of non-binding capacity demand indications to be included in the Incremental Proposal, while leaving it up to the TSOs to individually define the required information in such a process:

> The CAM NC amendment should require TSOs to individually make public what information they require within this process. The minimum data required for an indicative capacity request should be well-founded and should include the location, an indication of the amount of capacity required and an indication of the number of years for which a network user considers a binding offer or bid. When specifying their needs,

network users should have the possibility to indicate whether they would be interested in buying incremental or new capacity at several IPs along a 'hub-to-hub' route.

The content that is required by a TSO in order to appropriately evaluate a non-binding capacity demand indication of a network user is primarily dependent on the nature of the request and on the complexity of the potential incremental/new capacity project. ENTSOG is therefore supporting the view provided in the ACER Guidance that TSOs shall individually publish the information requirements for such indications, thus allowing consideration of national specifications.

Notwithstanding this, the ACER Guidance is stating minimum requirements to be included in non-binding capacity demand indications, being:

- The location where incremental/new capacity is requested;
- The amount of incremental/new capacity requested;
- The time for which incremental/new capacity is requested.

Besides these points, ENTSOG is proposing the following information to be required in a non-binding capacity demand indication in addition:

- The flow direction for which incremental/new capacity is requested between two entry-exit-zones;
- Whether or not this request is conditional upon another request that has been expressed to an adjacent TSOs on a 'route' including the characteristics of the condition(s);
- Whether or not this request has also been expressed to a TSO within the same entry-exit-zone which is also operating an IP to the requested adjacent entry-exit-zone and these requests are mutually exclusive.

Independently from the points stated above, TSOs are free to ask for additional information to be provided in a non-binding capacity demand indication, in case this is being regarded as necessary. Network users shall be informed by TSOs about which information they are required to provide in the context of a non-binding capacity demand indication.

To enable correct processing of non-binding capacity demand indications, TSOs shall define a data format to be used for expressing a capacity demand indication, assign a point of contact to express the demand to, and publish this information in addition to the requirements stated above.

## 5.4. Sufficiency of non-binding capacity demand indications

TSOs should report to affected NRAs whether or not they have received expressions of interest. If they have received any, TSOs should indicate whether these are sufficient for a formal offer of incremental or new capacity and propose coordinated solutions for addressing these indicative requests.

A failure to test market demand for incremental or new capacity, when indicative demand is identified as above, is deemed to be in breach of the TSOs' existing obligation to assess market demand for investment, enshrined in Regulation (EC) 715/2009, e.g. in Article 16 (5).

The ACER Guidance is asking TSOs to indicate whether a request for additional capacity in the context of a non-binding capacity demand indications is sufficient to actually initiate an investment project and to offer incremental/new capacity. ACER is assigning the task to decide on sufficiency to the TSOs, while the justification for the decision needs to be provided to the NRA.

As argued in 5.1, ENTSOG is of the opinion that non-binding indications should be assessed in combination with the TYNDP/NDP and the auction results, when deciding on the offer of incremental/new capacity. Based on this approach, the sufficiency of non-binding indications is tested and judged in the process of a combined assessment with the TYNDP/NDP and the auction results. Additional preconditions that need to be fulfilled in order to accept non-binding indications would therefore not be necessary.

Should non-binding indications however lead to the offer of incremental/new capacity in isolation, without the other conditions being met, potential incentive mechanisms should be included in the Incremental Proposal. This is to ensure 'efficiency' and 'transparency' as desired characteristics of the incremental/new capacity process as mentioned by the ACER Guidance.

ENTSOG should propose draft provisions for NC CAM for a cost efficient, transparent, European process, for instance on the allocation platform(s), including a time window in each year when such interest can be expressed.

In case non-binding indications would lead to the offer of incremental capacity even if there is no reasonable proof for the demand in the auction results or in the findings of

the TYNDP/NDP, it must be ensured that network users only express the demand for incremental/new capacity, for which they are actually willing to underwrite capacity contracts for once incremental/new capacity is offered. This is because the process of assessing a non-binding capacity demand indication from a network user includes complex prognoses of investment costs, assessment of funding sources and clarification on technical details of construction planning. Efficiency can only be ensured if this is done in a reasonable manner. Unreasoned or exaggerated indications for additional capacity demand, for which network users are not actually willing to underwrite capacity contracts, create additional work and higher costs for the TSOs which ultimately must be paid by all network users via the tariffs.

The Incremental Proposal could provide incentive mechanisms that TSOs can apply to incentivise network users only to express demand for capacity, for which they are actually willing to underwrite a capacity contract. Potential incentive mechanisms that could be applied individually or jointly are:

(i) Fee to be charged for disposal of non-binding indication

Network users indicating a demand for additional capacity could be charged with a fee for processing the request. The fee could be at a fixed level or in relation to the monetary present value of the additional capacity requested or a combination of both:

| | **Fix fee** | **Variable fee** | **Combined fee** |
|---|---|---|---|
| **Explanation** | Lump sum to be charged for expressing a demand | Fee depending on value of potential project to be charged for expressing a demand | Combination of fix and variable fee for expressing a demand |
| **Example** | X Euro per affected IP per TSO | Y % of PV of NUs indicated capacity demand | X Euro per affected IP per TSO<br>+ Y % of PV of NUs indicated capacity demand |
| **Pros** | • No disadvantage for large projects | • More suitable to represent costs associated with planning<br>• Exaggeration limited | Combination of both |

| | | | |
|---|---|---|---|
| **Cons** | • Fee is not representative for associated costs<br>• Fee does not prevent demand exaggeration | • Barrier for NUs to ask for large incremental capacity offer | Combination of both |

The fee could be conditional and returned in case the market test is eventually passed or in case no incremental/new capacity is offered.

(ii) Limited bindingness of capacity demand indications

Network users could be obliged to bid for a specific amount of capacity at the reserve price in case their indication leads to the offer of incremental capacity. The level of the obligation should be approved by the NRA and published by the TSO, giving network users more certainty on the bindingness of their indications.

In order to avoid unforeseeable price risks for network users, a 'willingness-to-pay-price' could be included in the capacity demand indication process which would limit the risk for network users. The obligation to bid for capacity could then be limited to those network users, for which the reserve price is lower or equal to the price they indicated to be willing to pay. Furthermore, this 'willingness-to-pay-price' could be taken into consideration by the TSO for the initial analysis of a capacity demand indication and the decision on offering incremental/new capacity or not.

Incentive proposals (i) and (ii) could potentially be combined in a way that network users expressing a non-binding capacity demand indication are free to choose whether to pay a fee for the processing of the indication or whether to voluntary bind themselves to contract capacity in an amount based to the mechanisms defined in (ii).

As mentioned before, the alternative to incentive mechanisms in the way stated above is a combined assessment of the conditions. ENTSOG invites stakeholders to express their opinion on the processes suggested by ENTSOG in this chapter and especially on the proposed procedure for the assessment of the conditions for offering incremental/new capacity. Furthermore, the list of potential incentives for the non-binding indication process is not complete and stakeholders can propose additional or alternative approaches to ensure that TSOs are in a position to handle those requests from network users appropriately.

# 6. Co-ordination requirements for developing incremental/new capacity

The ACER Guidance is calling for TSOs to co-ordinate their activities and to co-operate, both, among each other and with their respective NRA to enable the offer of incremental/new capacity.

**c) Co-ordination requirements**

The CAM NC amendment should require TSOs and NRAs to closely co-operate and co-ordinate across borders in order to enable offers of incremental or new capacity as bundled products according to the existing NC CAM. The CAM NC amendment should outline the overall process and which coordination results should be reached at what stage.

The Incremental Proposal shall detail the conduct of these co-ordination and co-operation procedures and state a set of minimum requirements that need to be included in such a process:

In the course of this co-ordination, agreement should at least be reached on:

- Co-ordinated timelines for the project;

- How delays in the provision of capacity are dealt with contractually;

- How effects of delays on other systems can be mitigated;

- The capacity volumes and characteristics of bundled yearly products for which demand can be tested;

- The common procedure to be used for securing network users' binding commitments, taking into account the selection criteria defined in section 2.e) and 2.f);

- The way in which the requirements for triggering the investment decision in each regulatory system can be combined in a single economic test, and when the test would be satisfied;

- Simultaneous or common information provision and a co-ordinated or single point of contact for network users.

In addition, the CAM NC amendment should define whether additional (and if so which) specific coordination requirements need to be fulfilled in the situation where an investment project spans across more than one interconnection point.

As already mentioned in chapter 4 of this document, ENTSOG defined two different phases of the incremental/new capacity process which are subject to different co-ordination and co-operation requirements.

## 6.1. The design phase

The purpose of this phase is to technically assess the features of the additional capacity. The outcome of this first phase is a project with one or several threshold(s) for incremental or new capacity. Associated with each level of additional capacity is the description of the products that are to be proposed to the market, the investment costs and a timeline for commissioning.

At that stage, the bulk of the work is to be performed by TSOs where investment assessment as well as non-investment options can be analysed by engineering teams and network simulation experts.

Depending on the scale of the projects, it must be noticed that the time needed to go through the entire design phase is usually equal or higher to one year because of the large number of contacts to be established and technical studies to be performed.

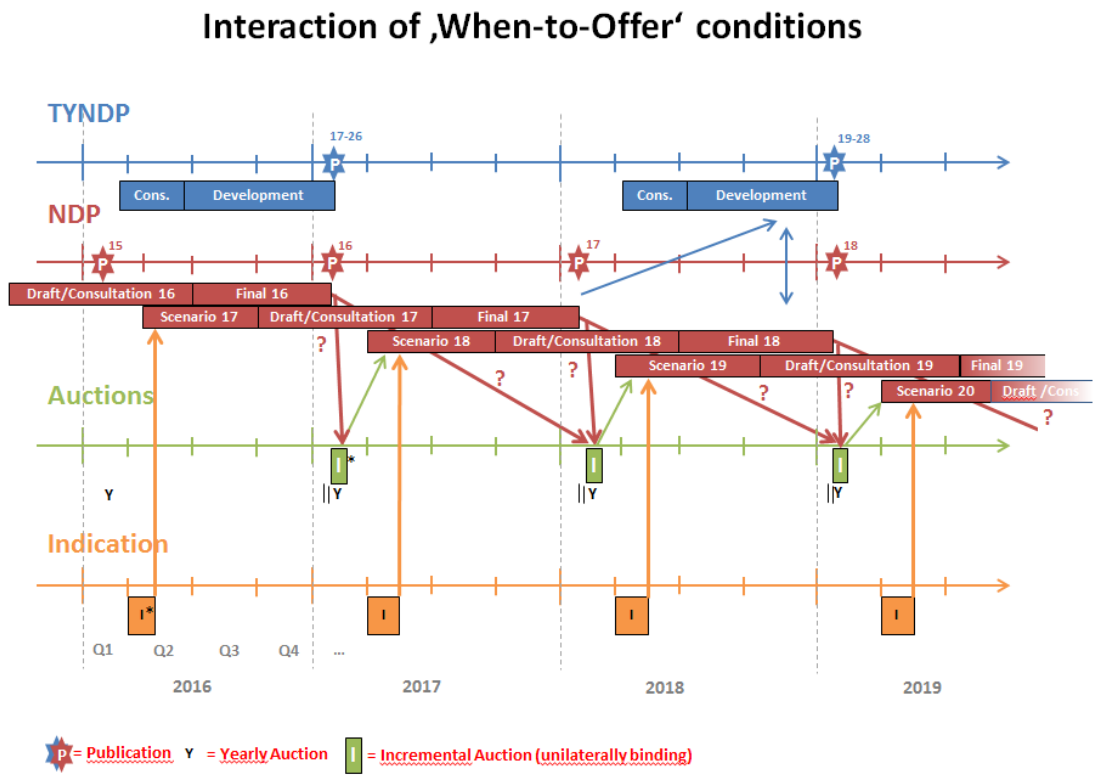
The type and size of the resulting incremental capacity scenarios determine the resources to be dedicated to this phase. In case the needed resources are significant and thereby the related costs of the studies are high, the question might arise whether the exercise was conducted efficiently, especially when low market commitments are raised in the following market test. It is therefore necessary that regulators approve the capacity expansion scenarios to be investigated allowing TSOs to recover the costs of the design phase for incremental/new capacity and market parties can be sure this is done in an efficient manner.

**Interaction with NDPs/TYNDPs**

In many countries, projects that are identified are listed in a national network development plan (NDP). Projects listed in NDPs are ranging from decided projects with commissioning very soon (for instance in less than 3 years) to potential future projects starting in the further future, with a number of them that will eventually not be developed.

Usually, the detailed technical assessment is developed in parallel to regular iterations made in NDPs allowing non-TSO stakeholders to participate at this stage. Market participants and other stakeholders can therefore indirectly provide input to the studies conducted by TSOs in co-ordination with respective NRAs.

Another relevant issue is the interaction between TYNDP/NDPs and the other conditions leading to the offer of incremental/new capacity. As elaborated in 5.1, a combined assessment of the three conditions is proposed by ENTSOG in order to ensure an efficient and transparent process. ENTSOG has designed an example on how the three conditions could interact leading to an offer of incremental/new capacity at the end of the process. This example is based on an at least bi-annual time window in March and April as it is suggested in 5.2. The following diagram illustrates the potential timeline for this example, which is based on a yearly NDP in a Member State. It must be noted that this example cannot be applied to all regimes, as NDPs are timed differently in the individual Member States and that the time for a potential offer of incremental/new can therefore not directly be derived from this example.




## 6.2. The market test phase

This phase covers the preparation and the performance of the economic test. After the allocation mechanism is run successfully (either auctions or the binding phase of an open

season procedure), it is followed by an investment decision assessment based on the outcome of the economic test.

The starting point for this phase is an industrial project encompassing the development of capacity, with associated products to be marketed, costs and timeline as described in the design phase. TSOs and NRAs involved in this project will then assess the parameters of the economic test thereby ensuring a transparent and non-discriminatory process that fits the features of the investment project. At this stage, the choice between auctions or an open season procedure for a specific incremental/new capacity project has to be taken by the TSOs subject to approval by NRAs. Furthermore, a main part of the market test preparatory discussion on the economic test is setting the f-factor and the determination of the other economic test parameters by NRAs upon a proposal by TSOs.

Co-ordination with TSOs and NRAs in adjacent member states or entry-exit-zones is mandatory in situations where a global investment assessment is needed. For example, if an investment could be constructed on either side of the border. The choice of the best location is normally taken during the design phase, based on analyses of costs, planning and environmental constraints in both countries. In some cases the discussions in the design phase must be continued during the market test phase so that regulatory elements and extra guaranties or possible upfront financing by non-market stakeholders may be taken into account as well.

The market test phase encompasses at defining the specific features of the allocation mechanism in case they are not standard, mainly in case of an open season procedure. In case of an open season it is possible to input market views all along the process until the deployment of the allocation mechanism. This ensures that the parameters of this mechanism fit the market needs. Nonetheless, market participants must be invited regularly to contact TSOs to express their views on the current process.

Once the allocation mechanism is validated by the NRAs, market participants are informed via a document presenting the project and the main features of the economic test, similar to an open season information memorandum. Performing the allocation mechanism is then straightforward in an auction or the binding phase of an open season according to chapters 8 and 9.

# 7. Information provision for developing incremental/new capacity

The ACER Guidance is asking ENTSOG to define in the Incremental Proposal a set of minimum information provisions that TSOs shall provide to other TSOs, which could be involved in a specific incremental/new capacity process, to market participants and to relevant NRAs. Furthermore, a timeline for the provision of information needs to be defined.

In specific, the CAM NC shall oblige TSOs to provide the following information to the relevant NRAs for approval:

**d) Information provision**

For each considered capacity expansion, TSOs should provide to the other TSOs involved or affected and to each relevant NRA at least the following information on a provisional basis as early as possible:

- For each considered capacity expansion at the relevant IP, the volume of annual yearly standard bundled capacity products offered and the contractual details and terms and conditions of the capacity contracts;

- The detailed rules used for securing network users' binding commitments, i.e. the specific allocation design, in line with the provisions of section 2.e) and 2.f);

- Detailed information on what level of network user commitment is necessary to enable the investment from an economic perspective (economic test);

- A reference to the applicable tariff and methodology as published by the TSOs;

- The timeline of the full process, including of the publication of economic test results and final capacity allocations, and possible approval procedures by national authorities.

This information should be provided to the NRAs for approval, with a sufficient lead time before an offer of incremental or new capacity is made for binding commitments. Moreover, the CAM NC amendment should outline the process steps and which information should be provided at each step.

After NRA approval, TSOs should publicly provide at least this information with a sufficient lead time, before an offer of incremental or new capacity is made for binding commitments.

The CAM NC amendment can list any other pertinent information that is to be exchanged or published in order to ensure a user-friendly and non-discriminatory process.

The CAM NC amendment should also outline principles on post-allocation reporting and the type of information TSOs should publish by a specified date.

The following diagram illustrates the proposed data exchange between the parties involved in the incremental/new capacity process to meet the requirements of the ACER Guidance:

- The design phase:

| From | To | Goal | Content |
|---|---|---|---|
| TSO | Adjacent TSO across IP | - Adjustment of technical parameters<br>- Adjustment of timelines and risks | - Technical design parameters (flows, pressures)<br>- Timelines and mitigation procedure<br>- Risk analysis (e.g. public interest)<br>- bundling of products<br>- If several TSOs on one side: mutual arrangements (coordinated increment, competing increments, …) |
| TSO | TSOs in the same Market Area (if relevant) | - Assess impact on other capacities in the market area | - "Moving" of capacity, impact on the capacity calculation model |
| TSO | Network users | - Shape products to be considered | - Incremental steps to be considered<br>- Any specifics: quality, firmness, routes across several IPs<br>- Timeline info (e.g. ramp-up of source, …)<br>- Way to ensure commitments |
| TSO | NRAs (and potentially other authorities) | - Elimination of unrealistic options based on regulation policy (e.g. unsustainable increase of prices)<br>- Mapping of process and timeline from regulatory | - Early assessment on tariff and revenues across the regulatory zone<br>- Early qualification of benefits for the market<br>- Cost recognition conditions |

| | | | |
|---|---|---|---|
| | | perspective,<br>- Assessment of procedures for construction | - Benefits beyond the IP and recognition<br>- National processes towards approval of investments<br>- Recognise the ability of TSO to fund the respective investments. |
| NRAs | NRAs across IP | - Align consistency / possible compensations across concerned regulatory zones, if any*. | - Alignment of timelines, rules, and recognition of cross IP or cross TSO compensations, if any*.<br>- Assessment of externalities |

* Depending on the approach selected to structure the discussion process on a potential redistribution of revenues as defined in 10.5 this goal could also be addressed in the market test phase.

- The market test phase:

| From | To | Goal | Content |
|---|---|---|---|
| TSOs at the IP | NRAs at the IP (Potentially including ACER) | - Validate rules | - Combination of parameters in a single economic test<br>- Proposed rules and criteria for the allocation mechanism, rule for securing commitment (approval by NRA for choice between auctions and OS)<br>- Propose a contractual framework for bundled capacities |
| All TSOs at IP and NRAs | | - Way to inform the market about economic test conditions | - Where, how and when to publish parameters of economic test (e.g. each TSO or a common platform)<br>- Where to collect commitments<br>- How to process the commitments (plausibility check, feedback to network |

| | | | |
|---|---|---|---|
| | | | users,…) |
| TSOs and NRAs | | - Assess the result of the economic test | - Agreement between TSOs and NRAs on the way to take into account the commitments. |
| TSOs | Network users | - Inform about the results of the market test | - Deadlines for contracting allocated capacity |
| TSOs | Market | - Inform about the individual and aggregate results of allocation procedure | TSOs shall inform network users as early as possible about their individual results of the allocation procedure (auction or the binding phase of an OSP)<br><br>Aggregated information about the results of the allocation procedure shall be published to the market no later than 24 hours after network users have been informed about their individual results in an auction and as early as possible in an OSP.<br><br>Information to be published for each relevant IP and relevant long term period:<br>- Accepted bid price in case of auctions<br>- Aggregated volume allocated<br>- Number of network users who successfully participated and number of network users who unsuccessfully participated in the auction or OSP. |

# 8. Auction procedure

## 8.1. Integration of incremental/new capacity into NC CAM long-term allocation procedure

**e) Integration of incremental and new capacity into the NC CAM annual yearly capacity auctions**

The CAM NC amendment should stipulate the integration of incremental and new capacity into the annual yearly capacity auctions of the NC CAM for existing capacity. This should apply at least in the case where a capacity expansion between two adjacent market areas is considered.

ENTSOG is requested to develop, test and consult a detailed amendment to the NC CAM's allocation procedure for existing capacity, keeping the integrity of the ascending clock algorithm. The amendment should enable the integrated offer, testing, and allocation of bundled new and incremental capacity to take place together with existing unsold yearly capacity. The same service for the same period will have the same value for network users if acquired at the same time.

To accommodate the offer of incremental/new capacity in the auction procedure defined in the Incremental Proposal and to be able to auction incremental/new capacity together with existing capacity at an IP, the provisions on the long-term offer of capacity need to be amended.

As the ACER Guidance is specifically calling ENTSOG to maintain the algorithm used in ascending clock auctions as a basis for the auction procedure, ENTSOG's view is that the primary task is to design a bidding methodology to be used for the ascending clock auctions, which allows network users to bid for existing and incremental/new capacity at a specific IP in one single auction. This methodology is part of the explanations in this chapter of this document.

## 8.2. Methodology to be applied in auctions

The ACER Guidance is asking ENTSOG to design the bidding methodology for incremental/new capacity including a number of selected factors, namely the following:

- offer and allocate bundled incremental and new capacity in a cost effective, nondiscriminatory, transparent procedure that enables taking into account willingness-to-pay, on the booking platform that promotes competition;

To ensure efficiency, non-discrimination and transparency, the amended CAM NC shall integrate the auctions for incremental/new capacity into the auctions held on the booking platforms defined in the CAM NC. The conduction of auctions for incremental/new capacity on the booking platform is thereby subject to the initial

decision of a TSO whether to use an OSP instead, in case the preconditions for choosing an OSP are met.

Taking into account willingness-to-pay and promoting competition is ensured by maintaining the algorithm used in ascending clock auctions.

| - ensure efficient allocation of existing capacity, irrespective of the outcome of the economic test for the incremental and new capacity under consideration; |
|---|

The methodology to be designed shall allow the allocation of existing capacity to network users, irrespective of whether the economic test is passed or not. To make this possible, the auction must be designed to differentiate between the offered existing capacity and the offered incremental/new capacity. In case an economic test is not passed, the existing capacity shall be allocated according to the 'standard-procedures' defined in the CAM NC for annual capacity products. This point is further elaborated in the example in 8.3.

| - the possibility to accommodate different reserve prices if a tariff adjustment is justified; |
|---|

It might be necessary to test not only different levels of incremental/new capacity, but also different levels of starting prices, because the level of investment can influence the level of the tariff associated with the offer of incremental capacity. The exact conditions for this are elaborated in chapter 11.1. In cases where a tariff adjustment is justified, the auction methodology shall allow to bid for different starting prices in one auction round.

| - the possibility to test network users' differentiated willingness to pay for more than one level of incremental and new capacity in an auction, e.g. no increment (allocate existing capacity only because the economic test is not passed), small increment (allocate incremental and existing capacity), large increment, very large increment, etc…. |
|---|

As for TSOs to offer different tariffs for different levels of incremental/new capacity, network users should also be able to differentiate their willingness to pay between different levels of incremental/new capacity offer. Firstly, this is because the perceived value of a certain amount of capacity for a network user might be lower the more capacity is on offer, and secondly because network users would clearly need to be able to adjust bids if different starting prices are auctioned.

| ENTSOG is requested to consider: |
|---|

- the possibility for network users to revise their bids if the economic test fails for incremental and new capacity;

Besides the aforementioned factors, the ACER Guidance is also asking ENTSOG to consider whether network users should be able to revise their bids in case the economic test for incremental/new capacity fails.

As requested by ACER, ENTSOG has assessed this proposal and has come to the preliminary conclusion that allowing the revision of bids after the closure of a bidding round would not be coherent with ACER's request to maintain the integrity of the algorithm used in ascending clock auctions and to limit the changes to the CAM NC to those parts that are necessary. The essential characteristics of ascending clock auctions for the CAM NC capacity auctions are:

- Escalating prices announced in consecutive bidding rounds,
- Predefined durations of such bidding rounds,
- Obligation for bidders to place a bid in the first auction round in order to participate in an auction
- Free entering, modifying and withdrawing during a bidding round but no modification, withdrawal or variation to valid bids once the relevant bidding round closes,
- Usage of a large and small price steps in order to balance the length of an auction and the potential of unsold capacity,
- Restrictions for placing bids:
    - The volume bid in any bidding round per network user shall be equal or smaller to the capacity offered in a specific auction,
    - The volume bid per network user at a specific price shall be equal to or less than the volume bid placed by this network user in the previous round (except for those cases where a change from large to small price steps takes place),

- The volume bid per network user in the first bidding round where small price steps are applied shall be equal to or less than the volume bid placed by this network user in the bidding round which preceded the first-time undersell

- The volume bid per network user in all bidding rounds where small price steps are applied shall be equal to or greater than the volume bid placed by this network user during the bidding round in which the first-time undersell occurred.

ENTSOG is of the view that the reason behind the request to consider the possibility for network users to revise their bids if the economic test fails for incremental and new capacity could be to give bidders the opportunity to raise their volume bids at a specific price. This would be in opposition to announcing the next higher price step at which new volume bids (according current rules being equal to or lower to those in the previous bidding round) have to be placed resulting in a capacity unit being more expensive than it would have been the case the economic test would have been successful in the previous round. Furthermore, the intention might have also been to allow network users that did not bid in the initial round to enter the auction at a later stage if the economic test is not passed. Thereby commitments for the investment could materialise since some network users may decide to change their strategy in order to trigger the investment.

ENTSOG has identified three main reasons for why the final algorithm for the joint allocation of existing and incremental capacity should not allow for the revision of bids beyond the possibility which is already foreseen by the current CAM NC:

ENTSOG doubts whether the underlying assumption for ACER´s request is valid, i.e. whether bidders which were willing to book a certain amount of capacity at a specific price would really increase their volume bids at such price in order to bring about a positive economic test although the capacity request would need to be higher than the capacity which is actually needed at that price. As an example, the assumption should be taken that a network user is willing to book 40 units at the reserve price (.e.g. € 2) representing his needs at this price step. A significant upward revision (e.g. to 60 units to be booked by this network user at the price € 2) would result in a unit price being higher than those € 2 and maybe even higher than the price to be paid once the price step in the next auction round is announced. In the table below, revising a bid from 40 units to

60 units in order to make incremental capacity to come about would result in a unit price for the network user to pay of € 3.

| Price step | Needed capacity | Price per unit of needed capacity | Revised capacity bid | Price per unit of needed capacity |
|---|---|---|---|---|
| 2 | 40 | (40*2) / 40 = 2 | 60 | (60*2) / 40 = 3 |

It must be noted that the assumption for this example is that the network users request their actual demand for capacity in the initial round and that an increase of the bids would not reflect an increased demand. Thus the additional quantities of capacity units would not be utilised, potentially leading to unjustified price increases at a later stage.

In addition, a "competition effect" of capacity being made available at such price for network users speculating on other bidders increasing their volume bids might also limit the practical relevance of such behaviour.

Secondly, single auctions (being auctions of incremental plus existing or auctions of only exiting capacity) cannot be looked at on an individual basis. Auction results of one auction most likely have impact on other auctions (and of course on other procedures for capacity booking at storages etc.). In order to avoid distorted results in auctions mutually affecting each other, ENTSOG considered parallelism of auctions offering the same product in terms of duration and starting date of transport as a cornerstone already during CAM NC development. A rejection of this would require allowing for bid revision in basically all auctions running in parallel which is certainly not in line with the general goal to "maintain the integrity of the ascending clock algorithm". Following discussions with stakeholders, broad support was reached for such a parallelism in the CAM NC.

Thirdly, ENTSOG is of the opinion that allowing network users to revise their bids after the closure of a bidding round could lead to unforeseeable effects on the behaviour of network users in the auction process. It is most likely that network users would begin to speculate about the bidding tactics of other auction participants and might not show their actual capacity demand and willingness-to-pay in the first bidding round - in the expectation of a 'second chance'. This would be in contradiction to the aim of the

ascending clock auction, which was deliberately designed in a way that network users need to disclose their actual demand and willingness to pay.

Based on the reasons mentioned above, ENTSOG is not providing potential solutions to allow such a revision of bids in the launch documentation. Furthermore, ENTSOG is of the opinion that allowing bid revisions is not necessary. Careful considerations in the design phase of the project will produce scenarios that are sophisticated enough for network users to indicate the steps of their full demand curve without having to speculate on the demand curves of others. When incremental or new capacity is offered via auctions, these sophisticated different capacity scenarios are offered in parallel, enabling network users to expose their full demand curve. Nonetheless, ENTSOG is looking forward to discuss this request and potential effects on the bidding procedure with stakeholders at the SJWS and to possibly revise its position if appropriate counter-argumentation is provided.

### 8.3. Parallel bidding ladders model

The requirements for the auction methodology mentioned above can be met by a parallel bidding ladders approach, which allows TSOs to test different incremental/new capacity scenarios and network users to differentiate their willingness to pay within one bidding round of an auction.

The ACER Guidance is asking ENTSOG to focus on this approach:

> ENTSOG should focus in its proposal on providing a recommended technical approach of integrated bidding for existing and incremental capacity (drawing on the model of parallel bidding ladders).

The model of parallel bidding ladders is an add-on to the ascending clock auction algorithm of the CAM NC. Instead of one single bidding ladder with one given offer against which network users can place bids at a fixed price level, the model of parallel bidding ladders allows for multiple bidding ladders with different quantities on offer and different prices against which network users bid simultaneously. By applying this model the correlation between network users' demand curves, offered quantities and prices is exposed and the bidding ladder representing the most efficient scenario will prevail.

The parallel bidding ladders model is described in the Annex 4 of the CEER Blueprint on Incremental Capacity in the form of an example. ENTSOG has further elaborated on this example:

*150 units of existing bundled capacity are on offer at an IP in a CAM NC annual long term allocation of yearly products. The TSO has also published the following offer of incremental capacity (in addition to the existing 150):*

*- High case: 100 units*

*- Low case: 50 units*

*The technical capacity at the IP is at a level of 1000 units.*

*This incremental capacity is first offered for year 5, as the investment project has a lead time of 4 years (as an example).*

*The deemed investment costs (DIC) in total for both sides of the border are:*

*- 11,000 Euro for the high case.*

*- 3,500 Euro for the low case*

*The value of cumulative network user commitments required to underpin the investment at both sides of the IP is published in advance as an economic test input: The fraction of deemed investment costs to be underwritten by network users' commitments for the economic test to be passed is f = 0.5. The discount rate is 6%. The reserve price (P0) corresponds to the sum of the reserve prices of the capacities in the bundled product and in this scenario, P0 is 10€.*

*Bidding is for volumes of discrete yearly capacity products against price steps above the reserve price. Each price step opens as a bidding window starting with P0 (reserve price) and then increasing price step by price step. Volume bids placed in a given bidding window (price step) must be equal to or less than in the previous bidding window (next lower price step). The allocation procedure for a yearly product closes when the capacity demand is equal to or below the supply (offered capacity). After the closing of a bidding ladder, no further bidding window opens for that yearly product.*

*In this example, the allocation of existing capacity closes at the price steps where the green underlined volumes are demanded. These can be volumes equal to the offer of existing capacity (all capacity sold), or below – in this case an under-sell could occur (e.g. in year 15 the under-sell is 150 – 60 = 90 units).*

*The base case will always be run to offer available existing capacity, as it is required by the CAM NC. In this example, a volume exceeding the offer of existing capacity is demanded for a sustained number of years (at lower price steps than the price steps where the allocation cleared*

*for the existing capacity). This has been foreseen due correct handling of the 'when to offer' indicators and the TSOs have developed scenarios for incremental offer.*

*With parallel bidding ladders, a bidding table opens for each capacity supply level: existing capacity, existing capacity plus the first level of incremental capacity, existing capacity plus the next higher level of incremental capacity, and so on, for each level of incremental capacity offered. In our scenario, this would result in three bidding tables with capacity supply volumes of 150, 150 + 50 = 200, and 150 + 100 = 250. The first scenario (no incremental capacity) is illustrated in the Table 1. The possible bidding results for the low (200 units) and the high (250 units) scenario are illustrated in Tables 2 and 3.*

*Please note that in the example of the high scenario, the economic test could not be passed if the total amount of incremental capacity is allocated at the reserve price, as this would not cover the share of investment costs defined by the f-factor. In order to pass the test, the auction has to close at least at an auction premium of one price step with a sufficient amount of capacity allocated. As the parameters of the economic test have to be published in advance of the auction, this is known by the network users and the auction directly begins with a bidding round 1 price step above the reserve price. (Therefore bidding quantities for the reserve price round are blacked out)*

*For reason of simplicity the optimisation mechanism of applying small price steps in the auction in not included in this example.*

*The following table illustrates a possible aggregated bidding outcome for the existing capacity:*

***Table 1: Auction results for base case bidding ladder***

| | Price | Y1 | Y2 | Y3 | Y4 | Y5 | Y6 | Y7 | Y8 | Y9 | Y10 | Y11 | Y12 | Y13 | Y14 | Y15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P(3) RP + 3 Price Step | 13 | | | | | | | | | | | | | | | |
| P(2) RP + 2 Price Step | 12 | | | | | | | | | | | | | | | |
| P(1) RP + 1 Price Step | 11 | 150 | 150 | 150 | 150 | 150 | 150 | | | | | | | | | |
| P(0) Reserve Price (RP) | 10 | 230 | 230 | 230 | 230 | 210 | 190 | 150 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 60 |
| *Capacity on offer* | | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| *Available existing capacity* | | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| *Incremental investment* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *ST reservation quota* | | 10% | 10% | 10% | 10% | 10% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% |
| *Available incremental* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Capacity reserved for ST* | | 100 | 100 | 100 | 100 | 100 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| *Booked capacity* | | 750 | 750 | 750 | 750 | 750 | 650 | 650 | 650 | 650 | 650 | 650 | 650 | 650 | 650 | 650 |
| *Technical capacity* | | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |

***Table 2: Auction results for low scenario bidding ladder:***

| | Price | Y1 | Y2 | Y3 | Y4 | Y5 | Y6 | Y7 | Y8 | Y9 | Y10 | Y11 | Y12 | Y13 | Y14 | Y15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P(3) RP + 3 Price Step | 13 | | | | | | | | | | | | | | | |
| P(2) RP + 2 Price Step | 12 | | | | | | | | | | | | | | | |
| P(1) RP + 1 Price Step | 11 | 150 | 150 | 150 | 150 | 195 | 195 | 195 | | | | | | | | |
| P(0) Reserve Price | 10 | 230 | 230 | 230 | 230 | 240 | 220 | 220 | 195 | 195 | 195 | 195 | 195 | 195 | 195 | 195 |
| *Capacity on offer* | | 150 | 150 | 150 | 150 | 195 | 195 | 195 | 195 | 195 | 195 | 195 | 195 | 195 | 195 | 195 |
| *Available existing capacity* | | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| *Incremental investment* | | | | | | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| *ST reservation quota* | | 10% | 10% | 10% | 10% | 10% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% |
| *INC reservation quota* | | | | | | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% |
| *Available incremental* | | 0 | 0 | 0 | 0 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 |
| *Capacity reserved for ST* | | 100 | 100 | 100 | 100 | 105 | 205 | 205 | 205 | 205 | 205 | 205 | 205 | 205 | 205 | 205 |
| *Booked capacity* | | 750 | 750 | 750 | 750 | 750 | 650 | 650 | 650 | 650 | 650 | 650 | 650 | 650 | 650 | 650 |
| *Technical capacity* | | 1000 | 1000 | 1000 | 1000 | 1050 | 1050 | 1050 | 1050 | 1050 | 1050 | 1050 | 1050 | 1050 | 1050 | 1050 |

***Table 3: Auction results for high scenario bidding ladder:***

| | Price | Y1 | Y2 | Y3 | Y4 | Y5 | Y6 | Y7 | Y8 | Y9 | Y10 | Y11 | Y12 | Y13 | Y14 | Y15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P(3) RP + 3 Price Step | 13 | | | | | | | | | | | | | | | |
| P(2) RP + 2 Price Step | 12 | | | | | | | | | | | | | | | |
| P(1) RP + 1 Price Step | 11 | 150 | 150 | 150 | 150 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 |
| P(0) Reserve Price | 10 | 230 | 230 | 230 | 230 | | | | | | | | | | | |
| *Capacity on offer* | | 150 | 150 | 150 | 150 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 |
| *Available existing capacity* | | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| *Incremental investment* | | | | | | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| *ST reservation quota* | | 10% | 10% | 10% | 10% | 10% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% |
| *INC reservation quota* | | | | | | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% |
| *Available incremental* | | 0 | 0 | 0 | 0 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| *Capacity reserved for ST* | | 100 | 100 | 100 | 100 | 110 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 |
| *Booked capacity* | | 750 | 750 | 750 | 750 | 750 | 650 | 650 | 650 | 650 | 650 | 650 | 650 | 650 | 650 | 650 |
| *Technical capacity* | | 1000 | 1000 | 1000 | 1000 | 1100 | 1100 | 1100 | 1100 | 1100 | 1100 | 1100 | 1100 | 1100 | 1100 | 1100 |

*As the starting price for the three scenarios is equal, one could expect that the demand structure of the network users would be equal, wherefore the network users should not bid for more capacity at the same price in the high scenario that they would bid for in the low or base case scenario. We do however assume that this is the case as network users want the investment to*

*go ahead. Therefore they do bid for more capacity in order for the economic test to be more likely to be passed.*

*All scenarios take into account the quota for the reservation of technical capacity to be auctioned as short-term capacity auctions, which increases following the year 6 from 10% to 20% for existing technical capacity. The obligation to reserve capacity for the short-term auctions also applies for the incremental/new capacity. However, the quote for reserving incremental/new capacity for the short-term auctions is set at 10%.*

*For the base case, by definition, no economic test has to be applied. The economic test for the two incremental scenarios would be the following:*

***Table 4: Economic test for low scenario:***

| | Y1 | Y2 | Y3 | Y4 | Y5 | Y6 | Y7 | Y8 | Y9 | Y10 | Y11 | Y12 | Y13 | Y14 | Y15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Revenues from incremental capacity* | 0 | 0 | 0 | 0 | 495 | 495 | 495 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 |
| *Year* | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| *Discount factor* | | | | | 0.7473 | 0.705 | 0.6651 | 0.6274 | 0.5919 | 0.5584 | 0.5268 | 0.497 | 0.4688 | 0.4423 | 0.4173 |
| *Present value* | | | | | 369.89 | 348.96 | 329.2 | 282.34 | 266.35 | 251.28 | 237.05 | 223.64 | 210.98 | 199.04 | 187.77 |
| *WACC* | 0.06 | | | | | | | | | | | | | | |
| *Poject Costs* | 3500 | | | | | | | | | | | | | | |
| *NPV* | 2906.5 | | | | | | | | | | | | | | |

***Table 5: Economic test for high scenario:***

| | Y1 | Y2 | Y3 | Y4 | Y5 | Y6 | Y7 | Y8 | Y9 | Y10 | Y11 | Y12 | Y13 | Y14 | Y15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Revenues from incremental capacity* | 0 | 0 | 0 | 0 | 990 | 990 | 990 | 990 | 990 | 990 | 990 | 990 | 990 | 990 | 990 |
| *Year* | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| *Discount factor* | | | | | 0.7473 | 0.705 | 0.6651 | 0.6274 | 0.5919 | 0.5584 | 0.5268 | 0.497 | 0.4688 | 0.4423 | 0.4173 |
| *Present value* | | | | | 739.79 | 697.91 | 658.41 | 621.14 | 585.98 | 552.81 | 521.52 | 492 | 464.15 | 437.88 | 413.09 |
| *WACC* | 0.06 | | | | | | | | | | | | | | |
| *Poject Costs* | 11000 | | | | | | | | | | | | | | |
| *NPV* | 6184.7 | | | | | | | | | | | | | | |

*The revenues from incremental capacity are calculated as the amount of incremental capacity auctioned in the respective years times the reserve price or time the reserve price plus auction premium in case the auction ended with an auction premium.*

*The present value of commitments from network users is the sum of these revenues, discounted by the weighted average cost of capital.*

*For the low scenario, the NPV of the investment is calculated at 2,906.50 Euro. With the f-factor being at 0.5 and the project costs at 3,500 Euro, the required NPV to pass the economic test is 1,750 Euro. As the actual NPV is higher than the required level, the economic test for the low scenario is passed.*

*For the high scenario, the NPV of the investment is calculated at 6,184.70 Euro. With the f-factor being at 0.5 and the project costs at 11,000 Euro, the required NPV to pass the economic test is 5,500 Euro. As the actual NPV is higher than the required level, the economic test for the high scenario is passed.*

*In this example, the economic test is passed for both, the high and the low scenario auctioned. As the capacity demand was sufficient to match the offer in the high scenario, the high scenario would be implemented. In practice, the scenarios would be designed in a way that the actual demand for incremental/new capacity is tested. Hence there would also be scenarios which are expected to be above to aggregated demand of network users to test the 'ceiling' of the demand for incremental/new capacity. The highest of the scenarios tested in an auction with a positive result of the economic test would then proceed towards commissioning.*

# 9. Open season procedures

## 9.1. General concept

The ACER Guidance specifies the use of open season procedures (OSP) in some circumstances (see chapter 9.3). OSP help to gauge the level of market interest by providing potential customers an opportunity to enter into a non-binding agreement to sign up for a portion of the capacity rights that will be available. If enough interest is shown during the OSP, investors will develop a preliminary project and move forward.

During an OSP, TSOs and NRAs assess the demand and the supply side when considering the maturity of a project. Regardless of the project's level of complexity, the main elements to be analysed are maturity of demand and the size of the market commitments to be secured. The assessment could also integrate studies of additional capacity in order to obtain a profound understanding of the market demands.

OSP can therefore be an efficient tool when identifying investment needs and allocating capacity in a transparent and non-discriminatory manner. This could especially be the case in large and complex projects that span several IPs, where OSP would provide the possibility for different options to be considered and more time for coordination. The additional flexibility that OSP provide could valuable when choosing a method to develop new incremental cross-border capacity.

## 9.2. Open season phases

An OSP has two distinctive phases: A non-binding assessment phase where the market interest for the project is evaluated and a binding phase where capacity allocation is processed.

During the assessment phase, the TSOs assess how much capacity the market needs and the terms and conditions at which this capacity can be made available. In some situations, potential customers have special requirements that are related to design of the product as well as features for the market tests that decrease the risk exposure for them. Depending on the case, the TSOs and NRAs may find these requirements acceptable or not. The process also enables a dialogue between project sponsors, interested potential customers and TSOs in order to allow the adaption of the project to the requirements of the market.

During the binding capacity allocation phase, the TSOs offer capacity to the OSP participants and, if satisfied with this offer, OSP participants sign a binding agreement with the TSO. Different methods can be used to allocate capacity during the second phase, but the method chosen by the TSO must be transparent and non-discriminatory. All information requirements on the involved parties in both phases will be agreed before the process starts and are subject to NRA approval.

The on-going dialogue takes place during the preparation of the OSP and can be decisive in terms of securing long-term commitments. This dialogue exists only to a limited extent in a straightforward auction-driven process.

## 9.3. High level principles and information on open season procedures

The terms of the open season and in particular the design of the binding commitment phase of the open season should be approved by all NRAs affected. The terms should comply with the following principles, in addition to the coordination and information provision requirements in 2.c) and d):

- It should offer non-discriminatory opportunities to make commitments for capacity products

- The capacity expansion should aim at satisfying all commitments, as far as this is overall efficient and economically feasible; where satisfying all commitments would not be economically feasible, or not efficient in the broader geographical context, an allocation rule based on willingness-to-pay should be used in priority. This may lead to using an algorithm modelled on the CAM auction algorithm, for example as described in section e).

- Pro-rating is the only other fall-back allocation rule that should be allowed in order to arrive at an efficient investment size that maximises the degree to which user requests are fulfilled. Its usage should be conditional on the

demonstration that the (sole) use of willingness-to-pay would be impractical (e.g. pro-rata needed in combination with willingness-to-pay when demand curves are used or when flat bookings are obtained from network users which cannot be economically met simultaneously).

As stated in the ACER Guidance, a number of principles and conditions must be respected during an OSP. An OSP should be guided by three main principles:

- Transparent and non-discriminatory access of potential system users to the OSP;
- Robust and well-planned coordination between the NRAs and TSOs involved;
- Clear allocation of responsibilities with regard to investment decision and investment recovery between capacity users, NRAs, TSOs and governments involved.

These commitments are covered in section 2c and 2d of the ACER Guidance and cover a number of co-ordination requirements (2c) between the adjacent TSOs and NRAS such as coordinated timelines; agreement on contractual handling of delays in provision of capacity; the capacity volumes and characteristics of bundled yearly products for which demand can be tested, etc. It also covers a number of information provision requirements (2d) regarding: volume of annual yearly standard bundled products at the relevant IP; detailed rules used for securing network users' binding commitments, i.e. the specific allocation design; level of necessary network user commitment to enable investment; reference to applicable tariff and methodology as stated by the TSOs; and timeline of the full process. Additionally, an OSP should also aim at satisfying all customer commitments whenever feasible and only allow pro-rating as an allocation rule only when willingness-to-pay would be impractical.

Transparency requires the so called 'Open Season Notice' containing the following general information:

- The start and end dates for making non-binding offers;
- how to make non-binding offers;
- arrangements in place to ensure the confidentiality of information received from open season participants;

- the methodology, or "economic test" that will be used to decide how much capacity is ultimately built;
- the allocation rules that will be applied in case the demand indicated in the OSP cannot be fully met;
- the date on which capacity allocations will be communicated to OSP participants;
- the date by which open season participants will be asked to sign a binding agreement;
- other practical requirements.[11]

The ACER Guidance describes circumstances in which the OSP are unable to fulfill all demand. However in most cases OSP can be tailored to the capacity demand in so far that the project is economically feasible. In the (exceptional) case where this is not possible, the dialogue between TSOs and customers, which is an important feature of the OSP, makes it possible to discuss an additional commitment in the form of higher amount of capacity, a longer duration of the booking or a higher remuneration, (all being an expression of willingness to pay) in order to make a larger project economically viable against a lower amount of capacity due to a pro rata decrease in case of a smaller project. ENTSOG thinks that a prescription in the code of the exact procedure to be followed limits the likelihood of the incremental capacity to be developed. So the CAM NC can be limited to transparency requirements and oversight by the regulators involved, both already addressed in the ACER Guidance.

## 9.4. When to choose an open season procedure instead of auctions

**f) Open Season Procedures**

The CAM NC amendment should limit the use of open season procedures for incremental and new capacity to those cases where the likely capacity demand, as identified in section 2.b) or in any informal or non-binding assessment phase:

i) extends across more than two market areas; or

[11] See ERGEGs Guidelines for Good Practice on Open Season

| |
|---|
| ii) requires an investment project of such size and complexity (e.g. where the investment decision for incremental and new capacity is predicated on associated simultaneous investment decisions in respect of related projects) that the procedure described in section 2.e) could appear not to be a robust approach.<br><br>ENTSOG is requested to elaborate on provision (ii) in terms of when this is the case.<br><br>The decision whether the criteria are met and an open season can be used is subject to NRAs approval. |

As stated in the ACER Guidance, there can be situations where the capacity demand is of such size and complexity, that an OSP is more suitable than auctions when testing and allocating new and incremental capacity. As such, ENTSOG is requested to specify circumstances where limitations in the auctions structure do not address the requirements of network users. The decision on which market test mode to use should therefore be proposed by the TSOs, using the following elements as starting point. The decision is subject to NRA approval.

Below is an indicative list of examples that can provide guidance to projects that could indicate such features, size and complexity that OSP would be more efficient than integrated auctions:

| **Example** | **Reasoning** |
|---|---|
| Setting up a gas route with several IPs along the route | OSP allows network users to express conditionalities between their demand for capacity at different IPs along a route or between years to get a flat booking |
| Highly meshed networks where incremental projects necessarily impact more than one single IP | The passing of the economic tests in that case depending on the demand on that range of IPs would require auctions at those different locations to become conditional to each other, which is overly complex[12] |
| The range of potential projects is too | The process is more adaptable by allowing |

[12] *In this context, valuable lessons can be drawn from the GB example of integrated auctions. However, this approach has only been proven in a national regulatory framework using the long run marginal cost methodology and only at individual entry points (as opposed to bundled capacity). This allows for the use of cost estimates with a monotonic relationship to incremental capacity volumes, with unit prices rising as incremental capacity increases. For bundled capacity at IPs, particularly in continental network topologies with potentially more meshed systems and a higher number of Transmission System Operators (TSOs), the project permutations and interdependencies are such that applying this approach may be overly complex.* (CEER Blueprint on Incremental Capacity, Page 10)

| | |
|---|---|
| wide to come to an efficient outcome in an auction | for reiterations resulting in the optimal project |
| When the horizon of user commitments that is necessary to pass the economic test is expected to be higher than the 10 years provided in the auctions | OSP allows of up to max. 20 years as the booking horizon[13]. This distinction is artificial and an alternative is to extend the booking horizon in all existing auctions as well |
| When the number of prospective customers is expected to be very low and non-standard flexibility is strongly improving the likelihood of securing requested level of commitment | Based on TSO experience this may be necessary to enable the investment. However providing extra flexibility must not lead to exclude other bidders, but to improve the added-value of the new capacity for the pioneer network users. In any case, NRAs are monitoring that the OSP is non-discriminatory and transparent |

### 9.5. Priorities in the allocation mechanisms of open season procedures

In as far as the commitments show that the investment is viable, the TSO allocates the available capacity among the OSP participants according to the commitments received.

Contrary to an auction procedure where the willingness to pay at a given moment prevails, in an OSP, the priority can be given to network users who contribute the most to the PVUC. To avoid discrimination, small commitments should be treated in the same way as larger commitments as long as the other parameters e.g. duration of the commitment are equal. The following conditional commitments should also be allowed:

- Linking of routes: the bid for IP1 will only be binding if the same amount of capacity and duration is obtained also for IP2.
- Flat capacity: a network user bid will only be binding if he gets the same amount of capacity during the whole period requested.

[13] Assuming a leadtime of 5 years until capacity is available

- Minimum amount of capacity required to accept the allocation: in addition to a bid, a network user could be allowed to define a minimum amount of capacity to accept the request.

### 9.6. Suitability of CAM NC capacity products to open season procedures

ACER Guidance to ENTSOG on the matter of incremental and new capacity only admits the following deviations from the NC CAM as regards the provisions on capacity products in OSP:

> For binding commitments in any open season procedure, all relevant provisions of the NC CAM on capacity products should hold, particularly with respect to capacity product design, bundling and the capacity set aside for short term allocation. Only the following deviations from the NC CAM are admissible:
>
> - Network user commitments for capacity can be obtained for 15 years as of the capacity becoming useable. Beyond that, commitments for an additional period of up to 5 years can be obtained. The requirement of additional commitments has to be shown to and assessed by the concerned NRAs.
>
> - If existing capacity is still available at an IP for the years for which binding bids for new capacity are invited, these capacity products can be included in the offer of incremental and new capacity.
>
> - Conditional commitments, for instance across a number of years requested, including or excluding bids at other IPs, or for a minimum amount of capacity required (fill-or-kill) can be obtained in open season procedures.

ENTSOG has analysed to what extent deviations are necessary:

Under the above deviation we should differentiate two topics: (1) the starting point of the 15 years commitments and (2) the adequacy of the additional period up to 5 years.

1) According to Article 11 CAM NC the capacity offer under the auction process shall not be longer than the upcoming 15 years.

   The 15 years is not defined precisely. To make an investment project more viable from a project perspective, ENTSOG assumes a 5 year investment lead time with the 15 years CAM NC counting after the 5 year investment lead time.

   This can be clarified by stating that:

   *"Network commitments for capacity can be obtained for 15 years since the moment in which capacity will become available"*

2) The possibility to have an additional period up to 5 years under NRA approval seems, in principle, reasonable. Long-term contract are usually signed for no longer than 20 years.

As defined in the ACER Guidance, *"if existing capacity is still available at an IP for the years for which binding bids for new capacity are invited, these capacity products can be included in the offer of incremental and new capacity."*

In principle it is reasonable if there is still available capacity at an IP, these capacities are included in the OSP process. In this way liquidity will be concentrated and the amount of capacity on offer in an OSP is maximized.

# 10. Economic test

## 10.1. Requirements from the ACER Tariff Framework Guideline

The TAR FG defines the following conditions to be fulfilled for a TSO to offer incremental/new capacity at an IP:

**FG 3.5. Incremental and new capacity**

Section 3.5 applies to all incremental and new capacity at entry and exit points under the scope of the Network Code on CAM, where the decision to invest is market-based, i.e. based on binding user commitments made during a CAM auction or open season.

In such situations the decision to invest will be conditional on the validation of an economic test showing that the project is financially viable considering network users' binding commitments to purchase the incremental or new capacity.

Binding upfront commitment of network users are the prime distinction between non-market test based investments and market based investment which are the subject of the Incremental Proposal. ENTSOG notes that in case the f-factor is set to 0, no user commitment is asked and therefore the requirements concerning incremental or new capacity will not apply, as recognized also by the TAR FG.

## 10.2. Economic test formula

**3.5.1.1. Economic test formula**

The Network Code on Tariffs shall specify that network users' binding commitments in respect of an incremental or new capacity project shall be deemed sufficient to justify the investment, when a financial

test is passed: the value of expected future payments from network users' commitments shall be equal to or exceed an appropriate proportion of the estimated increase in allowed revenues of the TSO.

The test is formulated as follows and is passed if:

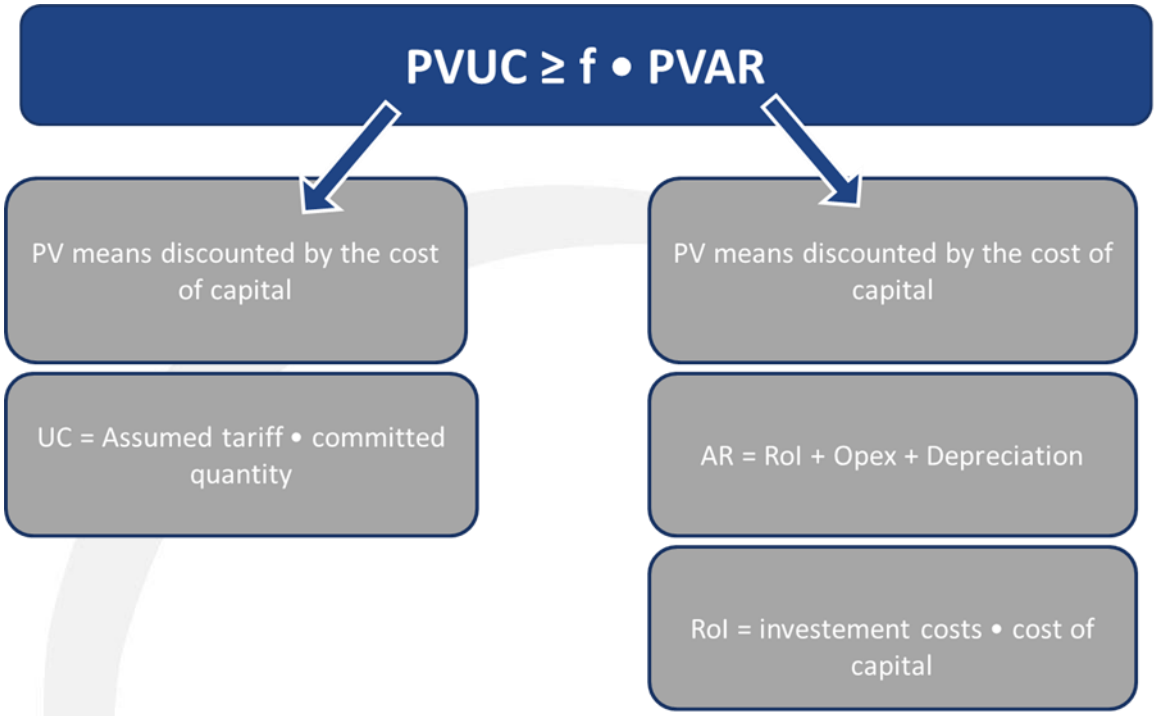
PVUC ≥ f • PVAR

Where:

PVUC is the Present Value of expected network users' commitments (incoming cash flow), which is the auction or allocation clearing price multiplied by the capacity volume commitment for each year where such commitment is obtained, discounted with the cost of capital to its present value.

PVAR refers to the present value of the estimated potential increase of the TSOs' (yearly) allowed revenue, which is attributable to the investment, during the economic life of the new asset. The Network Code on Tariffs shall require TSOs to make their best efforts to provide a reliable estimate.

f is the fraction of PVAR that needs to be underwritten by user commitments to pass the test.




1

In principle the above formula of the economic test is agreeable to ENTSOG and fits both, revenue cap and price cap regulatory systems. However, the term "allowed revenues" is heavily associated with revenue-cap regimes and would therefore potentially create confusion when it is applied to other regimes, i.e. price-cap regimes. In both price-cap and revenue-cap systems an amount of revenue is assumed upfront on which the financial regulation is based. ENTSOG therefore wants to clarify that the term 'Present Value of Allowed Revenues' is equivalent to the term 'Present Value of Regulated Revenues', which would be more appropriate in price-cap regimes. The acronym PVAR could therefore theoretically be replaced by PVRR. As a matter of consistency, we will use the term PVAR as it is defined in the FG throughout this document, noting that it can have a different meaning depending on the regulatory regime.

The constituent parts of the economic test are PVUC, f-factor and PVAR which will be further analysed in the following paragraphs.

**1) Present Value of network User Commitments (PVUC)**

One part in the construction of the economic test is the determination of the present value of the network users' commitments. During the auction or the OSP, network users are able to commit to investments by binding bookings of capacity. As such, each commitment contains an assumed tariff (regulated tariff + auction premium, if any) and capacity quantity for a certain defined product, by IP, direction(s) and time:

$$UC_{network\ user/time} = (regulated\ tariff_{time} + auction\ premium_{time}) \times quantity_{network\ user}.$$

To sum up all network user commitments, the present value will be used to:

$$\mathrm{PVUC} = \sum_{\mathrm{network\ user}} \sum_{\mathrm{time=n}}^{\mathrm{horizon}} \frac{\mathrm{UC_{network\ user/time}}}{(1+\mathrm{d})^{\mathrm{time}}}.$$

Beside the individual network user commitments (quantity and auction premium), which will be identified during the auction, the following parameters have to be defined prior to the economic test:

a) regulated $\mathrm{tariff}_{\mathrm{time}}$: estimation of regulated tariff at time of capacity usage,

b) n: release year, where the incremental capacity will be made available to the network users,

c) horizon: last year, for which capacity will be offered during the economic test (depending on allocation methodology; in auction max. year +15, in open season max. year +25),

d) d: discount rate to value future cash flows, here assumed to be equal to regWACC[14].

The TSO will propose these parameters in a duly justified way. The NRA will approve the proposal and justification of the TSO of all these needed parameters prior the economic

[14] regWACC = the regulated weighted average rate of return as determined by the respective NRA in charge.

test. All needed parameters and their justification will be published at least 1 month ahead of the economic test.

### 2) Present Value of Allowed Revenues (PVAR)[15]

In order to assess the overall regulatory costs of the project the present value of regulated revenues from the investments shall be set. All parameters of regulated revenues induced by incremental or new capacity will be determined and duly justified by the TSO:

$$PVAR = PVRR = \sum_{time=0}^{economic\ lifetime} \frac{RAB_{time} \times RoR_{time} + Dep_{time} + OPEX_{time}}{(1+d)^{time}}$$

The parameters to calculate the annual increment of regulated revenues are as following:

a) $RAB_{time}$: it is the deemed investment costs of the project which is to be included in the regulated asset base (RAB). Therefore this is the increase of the RAB compared to the situation before the investment,

b) $RoR_{time}$: the regulated rate of return is the Cost of Capital in the respective year including any auction premium, as agreed by the concerned NRA and TSO,

c) $Dep_{time}$: Depreciation of investment induced by the incremental or new capacity in the respective year agreed with the regulator,

d) $OPEX_{time}$: all operational expenditures induced by the incremental or new capacity in the respective year,

e) economic lifetime: expected lifetime corresponding to the last year of economic usage[16],

[15] As explained in 10.1, PVAR should be read as PVRR in case of a price cap regime.

[16] When setting the economic lifetime of the asset, NRA's and TSO's should not only take into account the technical lifetime (e.g. 50 years as typical technical lifetime of pipelines) but also the gas demand outlook in the EU, which is today much below 50 years (considering amongst other the declining demand, the EU-2050 roadmap, etc.)

f) d: discount rate to value future cash flows, here assumed to be equal to regWACC.

The TSO will propose these parameters in a duly justified way. The NRA will approve the proposal and justification of the TSO of all these needed parameters prior the economic test. All needed parameters and their justification will be published at least 1 month ahead the economic test.

### 10.3. Present value of 1-f non-market commitments (PVNC)

The economic test is intended as an ex-ante tool (ahead of the investment decision) to evaluate the financial viability of a project on the basis of the best information available at the time of the investment decision. The proportion of PVAR (including, subject to any regulatory efficiency assessment, any PVAR cost over runs) not covered by expected future payments from network users' commitments would be recovered, either by future bookings at the point, or from all network users via the revenue recovery mechanism.

The structure of the economic test implicitly determines the level of upfront non-market commitments. This may occur in different ways depending on the regulatory regime applied. In systems where the revenues of the TSOs are guaranteed, the deemed investment costs shall be included in the Regulated Asset Value, so that the regulated revenues are fully recovered from network users or regulatory commitments. As the PVNC is guaranteed in these systems, it is implicitly integrated into the discussions on the definition of the f factor between the TSO and the NRA.

In opposition to this, in price-cap systems where the revenue recovery mechanism is insufficient to guarantee the TSO full recovery of the asset value,, the PVNC must be either guaranteed through another non-market mechanism or explicitly taken over by the TSO in exchange of a higher risk premium reflecting the capacity risk and resulting under-recovery.

### 10.4. Criteria to be considered when setting the "f" parameter

**3.5.1.2. Criteria to be considered when setting the "f" parameter**

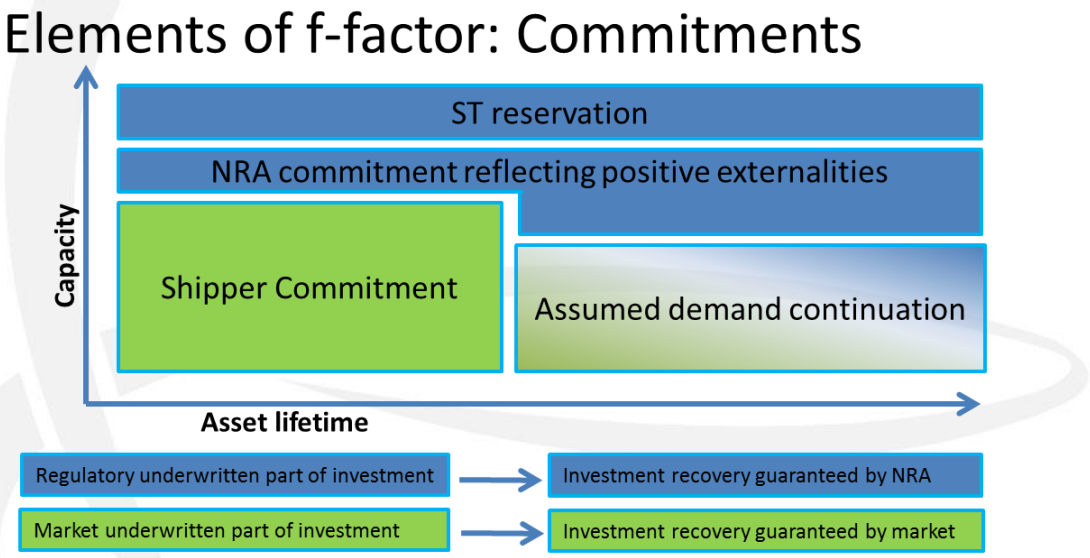
The "f" parameter can be determined on an individual project basis, but shall be subject to approval at a Member State level by relevant NRAs. When setting the "f" parameter, the following criteria shall be taken into account:

- Duration of network users' commitment period compared to the economic life of the asset; (The longer the commitment period relative to the asset life is, the more can be underwritten by investors, which may justify a higher "f" parameter);

- Capacity set aside for short term bookings, which is at least 10% according to the Network Code on Capacity Allocation Mechanisms; (This may result in a lower "f" parameter, considering that the 10% or part of it will be booked only short term.);

- Positive externalities which may justify a lower "f" (e.g. improvement of competition, improvement of security of supply, investment useful for other points in the network and not just the one where it creates capacity).

The criteria that have to be considered when setting the f-factor can be illustrated by the picture below:




**Reservation for Short Term usage**

The recovery of costs related to the part of incremental or new capacity set aside for short term bookings shall always be guaranteed by the NRA or Member state. The question could be raised whether the mandatory minimum level of 10% is too restrictive. In case the 10% level as a set minimum constitutes a clear obstacle to passing the economic test (such as in transit countries and price cap regimes) and the effects on completion are judged to be acceptable then NRAs should have the possibility to set a lower than 10% level of reservation for ST usage.

**Assumed Demand continuation**

Based on the LT prognosis supplied by the TSO together with the different capacity scenarios, an assumption could be made on the security of continuing demand. In case the TSO has insufficient security the NRA could give commitments for the underpinning of a portion of this capacity.

**NRA commitment to positive externalities**

Positive externalities, by which the f parameter will be lowered, shall be assessed and will be the underlying rationale for non-network user commitments guaranteed by NRA or Member state. This analysis shall compare the costs of current network users compared to benefits for them from the new investment.

## 10.5. Single economic test

**3.5.1.3. Single economic test**

The Network Code on Tariffs shall specify that a single economic test shall be published, incorporating the aggregate investment requirements of all involved TSOs and NRAs relating to a given capacity project. Only those investment costs directly relating to the incremental capacity should be included. Where NRAs involved determine different "f" factor values, NRAs shall cooperate to determine an aggregate "f" factor value.

If the distribution of PVAR and the PVUC between the TSOs does not allow one of them to meet its specific investment requirement (based on its assessment of "f"), while the single test is passed, TSOs and NRAs may decide to modify the distribution of revenues between the TSOs (by a cost sharing agreement or a different split of the bundle reserve price).

In case of external financial support (e.g. subsidies from the EU), the PVAR should be lowered according to the amount received.

ENTSOG is of the opinion that discussions on the f-factor and 1-f should take place on a national level due to complex interactions within the national regulatory regime. This is an essential underpinning of the question of what the single economic test should look like. ENTSOG envisions a process according to the following steps:

Each TSO calculates its own project specifics and agrees upon the parameters (costs, tariffs, expected increase of allowed revenues, f-factor etc.) with its NRA.

After the TSO/NRA pairs on both sides have come to an agreement, they will share this agreement with each other and calculate the level of user commitments that is required to pass the individual economic tests at both sides of the IP. Here is an example of a possible outcome:

| Level UC | 0 | 150 | 250 | 350 | 450 | 550 |
|---|---|---|---|---|---|---|
| TSO A | no | no | yes | yes | yes | yes |
| TSO B | no | no | no | no | yes | yes |

A User Commitment (UC) level between 0 and 250 means that the test is not passed at either side. At a commitment level between 250 and 450 the economic test is only passed on the side of TSO A, but not on the side of TSO B. Thus, the single economic test would not be passed either as the level of network user commitment is not high enough to cover the required share of PVAR for TSO B. Only at a network user commitment level of 450 or higher the test is passed at both sides. For the single economic test this would mean, that the minimum level of network user commitment to pass the test is at 450 and the f-factor is a mathematical calculation based on this requirement.

In this example, a range of possible network user commitments exists at which the economic test is passed only on one side of the border but not on the other. In order to decrease this range and thereby decreasing the minimum required network user commitment level for the single economic test, involved NRAs might agree to modify the distribution of revenues between TSOs. This could be done in a number of ways; examples being that NRAs may decide on a cost sharing agreement or on a different split of the bundled reserve price. The decision on which way or combination of ways is most appropriate should be left to the involved TSOs/NRAs on a case by case basis because the exact situation of each cross-border investment project is unique in bringing different regulatory regimes and technical realities together. Also the relative sizes of the investment to the existing systems and the distribution of costs across the border make every case different from the previous.

ENTSOG proposes three approaches for discussion on how to structure the process for a potential redistribution of revenues:

(i) Ex-ante agreement between NRAs and TSOs

The first approach is to assess a potential redistribution of revenues once the parameters of the individual economic tests are agreed upon on both sides of the border and before the economic test is held. Thus the f factor for the single economic test could potentially be decreased upfront and network users would have more certainty after the economic test is held.

(ii) Ex-post agreement between NRAs and TSOs

The second approach is to assess a potential redistribution of revenues only after the single economic test was not passed based on a minimum level of network user commitment that is required on both sides of the border. This would mean that if the actual level of network user commitment in an auction or an OSP is not sufficient to pass the single economic test but to theoretically pass the individual economic test on one side of the border, the TSOs and NRAs involved could discuss on how to decrease the aggregated f-factor to finally pass the economic test. Thus a redistribution of revenues would only take place if it is really necessary to pass the economic test.

(iii) Integrated agreement between NRAs and TSOs in an OSP

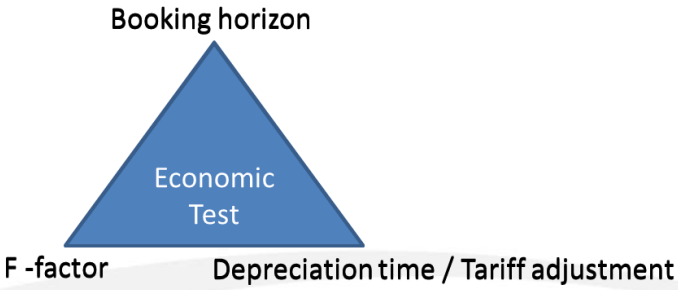
The third approach is to integrate the discussions on a potential redistribution of revenues into the allocation procedure. As this is not possible in an integrated NC CAM auction, it could be a criteria to choose an OSP if TSOs and NRAs expect a necessity to assess a redistribution of revenues. By doing so, the actual need for such talks would become clear within the process and an agreement could be integrated into the entire process, giving network users more clarity on the requirements.

If a redistribution of revenues is adopted by the concerned TSOs/NRAs a cost benefit analysis should demonstrate that the project has enough economic benefit to the adjacent country. General rules and statements, other than transparency on the results, would only limit the possibility to reach agreement in a specific case.

ENTSOG invites stakeholders to express their opinion on the proposed approaches to potentially agree on a redistribution of revenues and is looking forward to discuss this issue at the SJWSs.

Besides this, the following observations were made by ENTSOG when analyzing the TAR FG regarding the single economic test:

The aggregate f-factor value is a mathematical reality only. The underlying reality is the minimum amount of network user's commitment that NRAs find acceptable to base the investment decision on. Even in case of equal f-factor values at both sides of the border the economic test threshold is not necessarily the same in both systems. This also depends on tariff levels, distribution of investment cost, existing capacity situation etc.




Taking into account that uneven outcomes of the economic tests on both sides of the border are likely to be the rule rather than the exception and the fact that the incremental proposal only applies to investments that are triggered by binding user commitments, the economic test should be developed and performed individually in each system.

ENTSOG notes that for a country with a relative low amount of captive customers it will not be possible to gain sufficient commitment from network users in an auction to have an economic viable project, even with a very high f. The period of 10 years for which capacity can be offered is too short. It will lead to either unacceptable high yearly tariffs or to an unacceptable risk to the captive customers. In such cases other solutions must be found to make such an investment possible e.g. subsidy, guarantees or cross system funding. In such case even for open seasons where a time window of 20 years is possible the economic viability remains critical.

If in the TAR NC a mandatory rule is introduced for an aggregate f-factor in case NRAs and TSOs are unable to reach an agreement, this choice will lead to a significant loss of autonomy for TSOs and NRAs involved. ENTSOG doubts that such a rule will be acceptable to the Member States since it inflicts on the principle of subsidiarity. Therefore, in the TAR NC only a voluntary agreement between NRAs and TSOs at both sides of the border can be included. If such an agreement cannot be reached, the only option is that the "aggregate f-factor value" would correspond to the lowest level of UC needed to pass the test at both sides prevails.

### 10.6. Publication requirements

**2.4.1. Incremental and new capacity**
After NRA approval, TSOs shall publicly provide at least the following information with a sufficient lead time, before an offer of incremental or new capacity is made for binding commitments:

- PVAR ,the present value of the estimated potential increase of the TSOs' allowed revenue in each year during the economic life of the new asset, which is attributable to the investment (outgoing cash flows);
- The fraction ("f") of the PVAR, which refers to the estimated increase in allowed revenues attributable to the investment that needs to be underwritten by user commitments to pass the economic test (incoming cash flows), including the factors that have influenced the determination of f, which should be quantified, where possible and relevant;
- An estimated projection of tariffs for the bundled yearly capacity products of the capacity expansion(s) considered and an explanation of how it is calculated.

In the Incremental Proposal, ENTSOG will ensure that the publication requirements to be stated in the draft TAR NC will be consistent and non-overlapping with those in the CAM NC amendment proposal. Where necessary, cross-references will be made to ensure that should in the future one of the two NCs be amended, the coherence will be kept.

## 11. Tariff issues

### 11.1. Determination of the price at which users can request incremental or new capacity

**3.5.2. Determination of the price at which users can request incremental or new capacity**

The Network Code on Tariffs shall specify that, when determining the minimum price at which network users can request incremental capacity, the reference price as determined by the cost allocation methodology shall apply.

In the specific case, and only in the case, where selling all the incremental or new capacity offered at the reference price would not generate sufficient revenues to pass the economic test with the value of the "f"

parameter defined on the basis of the criteria set out in section 3.5.1.2, NRAs may decide to adjust the minimum price at which participants can request capacity. This adjustment shall ensure that the economic test is passed if all the incremental or new capacity offered is subscribed.

The Network Code on Tariffs shall define how this adjustment shall be implemented, taking account of the following principles:

1. Preserving the financial integrity of the economic test;

2. Avoiding cross subsidy between network users;

3. Compatibility with the cost allocation methodology;

4. Avoiding fragmentation of reserve prices at the same entry or exit point.

Applying a premium to the tariff paid by those users booking capacity in the first auction in which incremental capacity is offered (those users triggering the investment) would be consistent with these principles and should be the default option.

In determining the Network Code on Tariffs, ENTSOG shall consider alternative approaches, in addition to the default option. Where such alternatives are consistent with the principles above, ENTSOG shall include them in the Network Code on Tariffs. Where any alternative approaches result in the application of a premium to the reserve price paid by users other than those triggering the investment during the first auction of incremental capacity i.e. by other future users at later auctions, NRAs shall determine a maximum number of yearly auctions for which the minimum premium should apply.

With incremental/new capacity, the underlying assumptions of cost allocation methodologies, i.e. forecasted booked capacity as well as allowed revenues, are different compared to the situation before the investment. Because of this, the reference price as determined by the cost allocation methodology, which is the tariff applied to a new developed capacity, may differ from the tariff applied before the investment. This mechanism ensures that the increase of Regulated Asset Value and related incremental operative costs are covered via the tariffs. There might however be cases where the resulting tariffs would lead to unjustified cross subsidization due to the chosen cost allocation methodology and where the current reserve price would be insufficient to pass the economic test even in theory (i.e. in case all incremental/new capacity is subscribed).

In such cases, the TAR FG states that a minimum premium could be applied to the tariff in the auctions in which incremental capacity is on offer. ENTSOG however does not think that there should be a default option and is asked to elaborate on possible options to be applied in situations where the present of value user's commitments should be

higher in order to pass the economic test. ENTSOG proposes to consider all options on an equal basis for discussion with stakeholders.

**How to apply and how to determine the necessary extent of a tariff adjustment?**

As a commissioned investment project is to be included in the Regulated Asset Value of the TSO, a general adjustment (positive or negative) of tariffs at other IPs will be the logical outcome of the application of the cost allocation methodology. If this outcome is insufficient to enable the investment, an approach could be to adjust the tariff only for the incremental capacity in comparison to the tariff used for the calculation of the economic test.

Like any tariff, tariff adjustments have to be approved by the NRA. The tariff will be adjusted to reflect the investment cost and to make it possible for an allocation result to pass the economic test. The default option is applying a premium to the tariff paid by those users booking capacity in the first auction (or open season round) in which incremental capacity is offered to those users triggering the investment. NRAs shall determine whether the same minimum premium should also apply to the associated capacity reserved for ST use.

Up to date, different options on how a tariff adjustment could be implemented in the case of incremental capacity that cannot be offered at reserve prices by considering the following options have been identified:

- Adjusting the reference price for all capacity users at the IP;
- Adjusting the reference price, except for those users who booked capacity before the investment decision was taken;
- Introducing a minimum premium for users participating to the incremental process.
- Introducing a discount on the reference price for users participating in the incremental process as an incentive to increase the capacity volume bid.

| Options | PROS | CONS |
|---|---|---|
| Adjusting the reference price for all capacity users at the IP | Simplicity of the approach | Unexpected tariff increase for users having booked LT capacity before the investment was triggered |
| Adjusting the reference price except for users who booked capacity before the investment decision | "Existing" users protected from unexpected tariff increase | Complexity linked to the coexistence of at least two reference prices (up to 14 years ahead) |
| Introducing a minimum premium only for users participating to the incremental process | "Existing" users protected from unexpected tariff increase | Reduces the incentives to commit long-term since the reference price for future bookings will be lower than the incremental tariff |
| Introducing a discount on the reference price for users participating in the incremental process as an incentive to increase the capacity volume bid | Network users booking incremental capacity are rewarded for allowing the investment to proceed thanks to their long term commitments | Network users with existing capacity have a relative disadvantage in comparison to users purchasing incremental capacity |

ENTSOG looks forward to discuss these approaches and invites stakeholders to elaborate upon these options together, taking into account the principles stated by ACER:

- Preserving the financial integrity of the economic test;
- Avoiding cross subsidy between network users;
- Compatibility with the cost allocation methodology;
- Avoiding fragmentation of reserve prices at the same entry or exit point.

# 12. Glossary

| Term | Definition | Source |
|---|---|---|
| allowed revenue | the maximum level of revenues set or approved by the NRA that a TSO is allowed to obtain within a defined period of time for undertaking its regulated activities | TAR FG |
| ascending clock auction | an auction in which a network user places requested quantities against defined price steps, which are announced sequentially | CAM NC |
| auction premium | the difference between the reserve price and the clearing price in an auction | TAR FG |
| available capacity | the part of the technical capacity that is not allocated and is still available to the system at that moment | Gas Directive<br>Gas Regulation |
| bidding round | the period of time during which network users can submit, amend and withdraw bids | CAM NC |
| bundled capacity | a standard capacity product offered on a firm basis which consists of corresponding entry and exit capacity at both sides of every interconnection point | CAM NC |
| bundled reserve price | the reserve price applicable to a bundled capacity product offered at an auction | TAR FG |
| capacity | the maximum flow, expressed in normal cubic meters per time unit or in energy per time unit, to which the network user is entitled in accordance with the provisions of the transport contract | Gas Directive<br>Gas Regulation |
| competing capacities | capacities for which the available capacity in one of the concerned auctions cannot be allocated without fully or partly reducing the available capacity in the other concerned auction | CAM NC |
| contracted capacity | capacity that the transmission system operator has allocated to a network user | Gas Directive<br>Gas Regulation |

| | | |
|---|---|---|
| | by means of a transport contract | |
| costs | are operational expenditures, depreciation and the cost of capital (which includes the cost of debt and the cost of equity). The costs are determined for a specific year and shall be expressed in the price level of that specific year. They can be determined using either observed costs or incremental costs | TAR FG |
| cost allocation methodology | the methodology that determines the share of the TSO's (allowed) revenues which is to be collected from the expected sale of transmission services at every entry or exit point | TAR FG |
| existing capacity | the technical capacity at an existing interconnection point which is already in place before the time of the capacity allocation. | ACER Guidance |
| incremental capacity | capacity that could be made available at existing interconnection points beyond the level of existing capacity based on an investment or a long-term capacity optimisation | ACER Guidance |
| interconnection point | a physical or virtual point connecting adjacent entry-exit systems or connecting an entry-exit system with an interconnector, in so far as these points are subject to booking procedures by network users | CAM NC |
| large price step | a fixed or variable amount that is defined per interconnection point and standard capacity product | CAM NC |
| new capacity | technical capacity that could be created at a new interconnection point where no capacity existed before, as well as physical reverse capacity at an existing interconnection point, which has not been offered before | ACER Guidance |
| network user | a customer or a potential customer of a | Gas Directive |

| | | |
|---|---|---|
| | transmission system operator, and transmission system operators themselves in so far as it is necessary for them to carry out their functions in relation to transmission | Gas Regulation |
| open season procedures | a procedure where a transparent and non-discriminatory call for binding commitments of any party for capacity is made by a group of TSOs together spanning two or more market areas, which may be preceded by non-binding expressions of interest of any party, in order to base an investment decision for a capacity expansion on the obtained commitments. | ACER Guidance |
| payable price | the price to be paid, at the time of use, by the network user to the TSO, for capacity products | TAR FG |
| price cap regime | a tariff regime under which the NRA sets an upper limit to the price, or to the weighted average of the prices of services provided by the TSO | TAR FG |
| reserve price | the eligible floor price in the auction | CAM NC |
| revenue cap regime | a tariff regime under which the NRA sets the allowed revenues for the service(s) provided by the TSO. Tariffs are either defined by the NRA or the TSO, in compliance with the allowed revenues. Where TSOs define tariffs NRAs would approve the tariffs or the tariff methodologies, prior to implementation | TAR FG |
| small price step | a fixed or variable amount that is defined per interconnection point and standard capacity product which is smaller than the large price step | CAM NC |
| technical capacity | the maximum firm capacity that the transmission system operator can offer to the network users, taking account of system integrity and the operational | Gas Directive<br>Gas Regulation |

| | | |
|---|---|---|
| | requirements of the transmission network | |
| transmission system operator | a natural or legal person who carries out the function of transmission and is responsible for operating, ensuring the maintenance of, and, if necessary, developing the transmission system in a given area and, where applicable, its interconnections with other systems, and for ensuring the long-term ability of the system to meet reasonable demands for the transport of gas | Gas Directive<br>Gas Regulation |
| virtual interconnection point | two or more interconnection points which connect the same two adjacent entry-exit systems, integrated together for the purposes of providing a single capacity service | CAM NC |