Policy paper

On the revision of the network code on capacity allocation mechanisms in gas transmission systems (‘CAM NC revision’)

8 May 2024
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Background

1. The European Commission invites ACER to submit to the Commission by December 2024 reasoned proposals for amendments (the ‘reasoned proposals’) to the Capacity Allocation Mechanisms Network Code (‘CAM NC’). ACER will prepare its proposals in accordance with Article 7(2) of Regulation (EC) 715/2009 and Article 14 of Regulation (EU) 2019/942.

2. ACER acknowledges the importance of having European market rules that can readily align with the latest market developments, while guaranteeing that the decarbonisation targets set by the Green Deal\(^2\) can be met. As such, ACER recognises the need to revise the CAM NC which lays down the details of the European market rules.

3. The European gas markets have evolved since the last revision of the market rules for capacity allocation in 2017. The use of the gas transmission system changed in response to demand reduction and increasing LNG supplies offsetting reduced Russian pipeline supplies.

4. Additionally, the forthcoming ‘hydrogen and decarbonised gas market package’ (‘decarbonisation package’) will introduce new regulatory elements to advance decarbonisation, enhance security of supply, and facilitate regional cooperation.\(^3\)

What happened so far?

5. From October 2023 until January 2024, ACER carried out a preliminary analysis to investigate what are the main achievements and potential improvements to the market rules for capacity allocation, and to determine the scope of a potential revision of the CAM NC (‘scoping’).

6. To this end, ACER conducted a public consultation\(^4\) from 14 November 2023 to 5 January 2024 inviting stakeholders to identify the topics that deserve being investigated towards improving the CAM NC rules (‘scoping consultation’).

ACER’s conclusion on the scoping activity

7. ACER concludes from its scoping activities that there are three priority areas of improvement to the CAM NC: first, maximising the offer of firm and interruptible capacity (mainly Articles 6, 19, and 32), second, more flexibility in the offer of capacity (mainly Articles 8-18, Article 32), and, third, the incremental capacity procedure (Articles 22-31).

8. In addition, ACER concludes that five additional aspects of the CAM NC deserve further assessment possibly triggering moderate legal revision: first, the applicability of CAM NC to IPs with third countries and the definition of ‘interconnector’ (Article 2(1)), second, the assessment by the regulatory authorities when approving the application of implicit allocation (Article 2(5)), third, improving the organisation of intra-day auctions (Article 15), fourth, improvements to capacity conversion (Article 21), and fifth, improvements to the selection of the booking platform (Article 37).

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European Commission invites ACER to make reasoned proposals for amendments

9. ACER shared its draft scoping conclusions with the European Commission. In its response letter of 11 April 2024, the Commission asked ACER to submit reasoned proposals according to the process foreseen in the legislation for preparing amendments of network codes.\(^5\)

10. In its letter, the Commission explains its expectations for the amendment process and emphasises the need to consider the regulatory elements introduced by the decarbonisation package. These regulatory elements were not known in detail at the time of ACER’s scoping activity.

11. The Commission invites ACER to prepare the amendment proposals in dialogue with the relevant stakeholders, and considering the costs of proposed changes and the benefits they are expected to bring. Furthermore, the Commission underlines that the proposals should be legally robust, and contribute to non-discrimination, effective competition and the efficient functioning of the market.

12. Regarding the regulatory elements introduced by the decarbonisation package, the Commission encourages ACER to reflect on the potential application of the CAM NC in relation to third countries and changes in the market design, that may interact with rules on capacity allocation. ACER notes, for instance, that the decarbonisation package defines ‘entry-exit system’\(^6\) (possibly extending such systems to include elements of distribution systems) and ‘conditional capacity’\(^7\) (as a subset of firm capacity).

13. Furthermore, the Commission invites ACER to:
   - reflect on how the capacity allocation rules might align with the decarbonisation objectives;
   - investigate how certain allocation configurations might maximise the use of the network, in particular in relation to security of supply considerations; and to
   - reflect how the rules in the code interact with and facilitate regional cooperation initiatives and market mergers.

14. Finally, to ensure coherence in the adopted market rules, the Commission invites ACER to identify related areas in the existing codes and guidelines that might be impacted by the CAM NC revision.

**ACER’s preliminary reflection on aligning the CAM NC to the decarbonisation package**

15. ACER intends to investigate how the market rules for capacity allocation align with the decarbonisation package.

16. ACER’s scoping activity already identified a need to further assess the application of the CAM NC in relation to third countries and potential ambiguity with respect to interconnectors, covered below in Section 6.2 on the application of the CAM NC. The interaction between the applicability of CAM rules and the extension of entry-exit systems to possibly include (parts of) distribution systems is further reflected on in the same section.

17. Additionally, ACER invites stakeholders to consider in their responses:

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\(^{5}\) ACER prepares reasoned proposals for amendments on the basis of Article 7 of Regulation (EC) 715/2009 and following Article 14 of Regulation (EU) 2019/942.

\(^{6}\) Recast gas Directive, Article 2(57): “‘entry-exit system’ means an access model for natural gas or hydrogen where system users book capacity rights independently on entry and exit points, that includes the transmission system and may include the whole or part of the distribution system, or hydrogen networks;”

\(^{7}\) Recast gas Regulation, Article 2(1), point (35): “‘conditional capacity’ means firm capacity that entails transparent and predefined conditions for either providing access from and to the virtual trading point or limited allocability;”

Recast gas Regulation, Article 2(1), point (36): “‘allocability’ means the discretionary combination of any entry capacity with any exit capacity or vice versa;”
• how the capacity allocation rules might align with the decarbonisation objectives, potential capacity decrease and its management;\(^8\)
• how certain allocation configurations might optimise the use of the network, in particular in relation to security of supply considerations;
• how the rules in the code interact with and facilitate regional cooperation initiatives and market mergers; and
• to signal interactions between possible amendments to CAM NC and other network codes and guidelines.

18. The allocation configurations to maximise the use of the network might relate to, but are not necessarily limited to, ACER’s work on maximising the offer of capacity covered in Sections 1 and 2. For instance, the use of conditional capacity which restricts the combination of exit and entry points may boost commercial capacity on specific flow paths.

19. Regional cooperation initiatives and market mergers mostly relate to market rules on balancing and network tariffs. Nevertheless, they might as well interact with the CAM rules, for instance, when previously bookable points are removed from an entry-exit system or an interconnector.

ACER’s process to prepare its reasoned proposals

20. ACER ensures a continued dialogue with the stakeholders throughout its process to prepare reasoned proposals.\(^9\)

21. This consultation is a ‘policy consultation’, which explores further the amendment proposals to be considered, building on ACER’s scoping activity as well as on the Commission’s invitation to submit reasoned proposals on revising the CAM NC.

22. The consultation is based on the present policy paper that introduces issues as well as improvement options, and asks stakeholders for their views and concrete proposals that will guide ACER further in making amendment proposals. Stakeholders are invited to share their technical reflections as well as concrete text proposals for amending CAM NC provisions.

23. The consultation consists of a survey and a technical workshop (by invitation only). Only the participants to the survey will be invited to the technical workshop as the objective of the workshop is to discuss and clarify further the responses to the survey.

24. Finally, after completing this ‘policy consultation’, ACER will draft its reasoned proposals for amendments and will consult a last time with stakeholders before finalising and submitting them to the Commission by the end of the year.

Figure 1. ACER’s process for preparing its recommendation on “reasoned amendments proposals for CAM NC” (“recommendation”)

\(^8\) Maximising remaining capacity in a context of capacity decrease (e.g., after repurposing assets) is essential to ensure maximum access to the gas system.

\(^9\) https://www.acer.europa.eu/acer-consults-cam-nc-revision
1. Maximising the offer of firm capacity

1.1. The gas market benefits from more transparent calculation and maximisation of firm capacity

As provided for in Article 6 of the CAM NC, “the maximum technical capacity shall be made available to network users, taking into account system integrity, safety and efficient network operation”. This principle aims to maximise access to the gas transmission system and its efficient use; its incomplete implementation leads to suboptimal market conditions.

In the Special Congestion Report\(^\text{11}\), ACER acknowledged the substantial efforts of transmission system operators (TSOs) to address bottlenecks in the gas transmission system. ACER also noted issues with availability of information. An example of insufficient transparency is the occurrence of sustained physical flows exceeding the reported technical capacity. From the market perspective, the question can be raised why this higher flow capability is not offered as firm bundled capacity. The ‘system integrity margin’ considered in the capacity calculation exercise may explain this gap between physical flow and commercial ‘technical capacity’, and transparency of this concept should be improved.

The Special Congestion Report also highlighted a case where the potential of firm-capacity bundling had not been fully exploited. Neighbouring TSOs must establish and apply a joint approach to maximise the offer of bundled capacity. More transparency on how that joint approach works might have informed the market why bundling was not achieved.

These two examples illustrate insufficient transparency with respect to the capacity calculation and maximisation methodologies used to maximise the offer and bundling of firm capacity. There are two dimensions to this: first, the mere availability of information, which includes the accessibility and publication of methodologies, and, second, the comprehensiveness (including clarity) of the information that is made available.

1.1.1. Availability of information on the capacity calculation methodologies

ACER understands transparency needs differ between market actors and regulators and presumes there are three transparency levels:

- Information required by neighbouring TSOs (privileged information);
- Information required by the concerned regulatory authorities (privileged information); and
- Information benefiting market participants (public information)

ACER searched TSO websites for information on capacity calculation methodologies and did a complementary survey of regulatory authorities on the availability of this information to the public or as privileged information to regulatory authorities.

Of the 25 regulatory authorities surveyed (excluding Malta and Cyprus), 20 replied and 5 did not provide information (Croatia, Estonia, Finland, Greece and Ireland). The Swedish NRA replied that no information is published as the Swedish gas system has no interconnection points that are subject to the CAM NC.

The results of the analysis show that 7 TSOs do not share information on their methodology, or the information was neither found by ACER nor provided by the concerned NRA. Furthermore,

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\(^{10}\) The notion of ‘technical capacity’ is defined, in Article 2(1), point (19), of the recast gas Regulation as “the maximum firm capacity that can be offered to the network users, taking account of system integrity and the operational requirements of the transmission system [...]”.

in most cases the methodologies do not indicate the last time they were revised. For those with a publication date, the latest update is before 2023. Find the overview in Table 1 of Annex I.

1.1.2. Comprehensiveness of the available capacity calculation methodologies

ACER also made, a preliminary review of the information that is made available in the methodologies and observes that the comprehensiveness of methodologies varies significantly among TSOs.

Most methodologies provide only basic descriptions, without delving into system specifics or network topologies. This makes comparisons between systems difficult and reduces the transparency of the maximisation process. While some methodologies provide more detailed information on network topologies and mathematical models, only two methodologies included explicit calculation steps and comprehensive descriptions of the model. Find the overview in Table 2 of Annex I.

1.1.3. Conclusion on the transparency of the capacity calculation and maximisation methodologies

ACER concludes that transparency on the capacity calculation and maximisation is insufficient, and that improved transparency will benefit the work of TSOs, the oversight by the concerned regulatory authorities, and market participants. This is crucial not only to avoid inefficiencies in the current market, but also for effective decarbonisation of the gas sector, as optimising the remaining capacity and offering it to the market in a transparent manner will be even more important.

ACER believes that improvements are needed in terms of which information is made available, and how. Transparency on the capacity maximisation may have three levels: information that must be available for neighbouring TSOs, information that must be available for regulatory authorities, and information that must be available for the public.

1.2. Options to improve transparency of capacity maximisation

Starting from the requirements of Article 6 of the CAM NC and considering the review of the available methodologies, ACER lists here typical elements of capacity calculation and maximisation methodologies, on which information must be made available:

- What is the role of ‘system integrity’;
- How does the joint method look like, with further details:
  - Description of the capacity calculation process;
  - Description of the calculation steps;
  - Description of the infrastructure and network topology;
  - Mathematical model;
  - Scenarios.
- Dynamic recalculation;
- Reporting template.

For each of these elements, it is important to distinguish between the different audiences who need to understand the methodologies and the results of their application:

- neighbouring TSOs;
- concerned regulatory authorities;
- market participants.
The improvement options discussed below include practices observed in the reviewed methodologies as well as generic approaches that may facilitate transparency.

When evaluating these options, one needs to keep in mind that they all belong to the capacity calculation and maximisation methodology. As such, one should not assess them independently, but rather as components of a larger methodological framework.

1.2.1. Reporting on the system integrity margin

Article 6 mandates TSOs to optimise technical capacity while “taking into account system integrity”. System integrity describes the condition in which its specified operational and technical parameters are within the tolerable limits of the system.

By monitoring and maintaining an adequate ‘system integrity margin’, which may be a time-variant function of uncertainty, TSOs ensure the overall stability and security of their gas network. This enables TSOs to manage demand fluctuations, sudden changes in flow patterns or unforeseen disturbances, thereby minimising the risk of system failure. ACER understands that the consideration of system integrity explains why the commercial technical capacity is less than the physical flow potential. The system integrity margin might furthermore relate to security of supply considerations and explain how firm, conditional or interruptible capacity are used to ensure maximum access to the system.

The reporting of the system integrity margin indicator and how it is established facilitates a better comprehension of the physical transmission system, of its ability to flow gas, and how the commercial firm capacity, including conditional capacity, and interruptible capacity are determined.

ACER finds transparency of the gas system's potential, including the system integrity margin, important to enable the regulatory oversight of the obligations laid out in Article 6 of the CAM NC, as well as for evaluating security of supply considerations. While ACER understands that defining an exact system integrity margin might be difficult in more complex gas systems, it is an essential piece of information in ensuring maximal access to the gas system.

ACER would welcome stakeholders to provide their assessment of the improvement options and to share their substantiated opinion, or to submit any alternative option.

1.1 How is the ‘system integrity margin’ determined in your system? Please include a description of the elements considered. [question addressed primarily to TSOs]

1.2 How could the system integrity margin be reported (e.g. as a percentage of capacity, probability of failure...) in a way that gives clarity on the physical capability of the system, the calculated technical capacity (which has commercial nature) and the relationship between them?

1.3 Do you consider this information should be made available to neighbouring TSOs, to regulatory authorities, or market participants? Please explain why.

1.2.2. Reporting on the joint method for calculating and maximising capacity

Article 6 underlines the importance of a joint method between neighbouring TSOs to maximise the offer of bundled firm capacity. "[I]n the joint method, adjacent transmission system operators shall consult other transmission system operators specifically affected by the interconnection point".

To understand the potential for maximising and bundling firm capacity, regulators and market participants should have access to information on how the joint method ensures the coordination that is required for jointly optimising the capacity as well as on how the calculation is carried out.

Broadly, the description of the joint method should contain a description of the capacity calculation process and the capacity calculation steps. The reporting could be done using a common template.
Description of the capacity calculation process:

24 The requirements of Article 6 of the CAM NC include collecting information from market participants on expected future flows. A description of the capacity calculation process, illustrating key steps and timelines, would inform market participants when and how to provide their input. It could take the form of a process diagram (see Figure 1).

25 The outlined steps may involve collecting input data, updating the mathematical model, determining peak daily gas consumption, updating cooperation agreements with neighbouring TSOs and analysing future bookings and expected future flows.

26 The process should indicate when and under which circumstances contributions from neighbouring TSOs or market participants are allowed or organised. It should also clarify the frequency of this process and the procedures in place when no changes to capacity updates are expected, and also why certain frequency is chosen. A generic example of such a process diagram is shown in Figure 1.

27 Information on the outcome of the process steps could be made available as well: e.g. the outcome of joint consultations, workshops, and coordination meetings.

Figure 2. Illustration of a generic process diagram with indication of consultation/coordination steps

Description of the capacity calculation steps:

28 The methodology for effectively calculating technical capacity involves several steps and is a part of a broader capacity calculation process. A comprehensive overview of the calculation steps to determine the maximum technical capacity, outlining the purpose of each step and the corresponding result, facilitates the understanding and monitoring of the maximised capacity.

29 Calculation steps may include setting boundary conditions and assumptions, parameterising of the network system model, defining the optimisation problem and constraints, solving the optimisation problem for predefined scenarios. These steps are further discussed below.

30 These calculation steps may differ depending on the network topology, calculation methodologies/optimisation problem and the assumptions and scenarios used. The calculation steps may include information on:
• **the infrastructure and network topology**, covering aspects such as length, diameter, elevation, number of entry/exit points, hydraulic conditions, capacity-limiting elements, the impact of domestic consumption and underground storage and potential bottlenecks. This information explains the differences between EU gas transmission system parameters and how these parameters affect capacity maximisation.

• **the mathematical model** behind the capacity calculation:
  i. explaining the assumptions made (‘boundary conditions’, ‘scenarios’) and how the assumptions affect the capacity calculation process;
  ii. explaining the decision variables, meaning the elements under control of the TSO; and
  iii. the optimisation problem (e.g. maximising the capacity or minimising the compression cost of the network).
  iv. In addition, a simplified numerical example calculation could be provided to facilitate a better understanding of the calculation approach and the network.

• **the scenarios used, including expected future flows**: In accordance with Article 6 of the CAM NC, the calculation methodology shall address “relevant demand and supply scenarios”. Furthermore, it shall take into account “the Union-wide 10-year network development plan pursuant to Article 8 of Regulation (EC) No 715/2009, national investment plans, relevant obligations under the applicable national laws and any relevant contractual obligations” as well as the “expected future flows when recalculating the technical capacity”.

Depending on the complexity, topology and location of the network, different scenarios may need to be considered. The seasons could also be considered in the scenarios.

### Reporting template

31 In order to facilitate the sharing of information on the capacity calculation and maximisation as detailed above, a common reporting template may be helpful.

32 Additionally, to further enhance transparency on how the joint method ensures coordination, neighbouring TSOs could publish joint reports on their joint capacity calculation.

**ACER would welcome stakeholders to provide their assessment of the improvement options and to share their substantiated opinion, or to submit any alternative option.**

**Joint method for capacity calculation and maximisation – capacity calculation process:**

1.4 Which steps in the capacity calculation process would you find essential to facilitate your contribution as a concerned party (e.g., market participant, regulatory authority, TSO)?

1.5 Should the (same) information on the capacity calculation process be available to market participants, to concerned TSOs and concerned regulatory authorities? Please explain why.

**Joint method for capacity calculation and maximisation – capacity calculation steps:**

1.6 Which information on calculation steps would you find essential to facilitate your understanding of how capacity is maximised (e.g., a mathematical description of each calculation step with a quantitative explanation, or a qualitative explanation that provides a more descriptive understanding, a simplified capacity calculation model)?

1.7 Should the (same) information on the capacity calculation steps be available to market participants, to concerned TSOs and concerned regulatory authorities? Please explain why.

**Detailed capacity calculation steps:**

1.8 Please share your view on the role of the network topology in the capacity calculation (e.g. compressor stations, diameter of pipelines, inlet pressure etc.)?
1.9 Please share your view on the role of the input assumptions (i.e. boundary conditions such as demand and supply scenarios and expected future flows) and the decision variables (the elements under control by the TSO) of the capacity calculation?

1.10 Please share your view on making available numerical examples of the capacity calculation in a transmission system, e.g. in the form of a simplified capacity calculation model?

**Joint method for capacity calculation and maximisation – common reporting template:**

1.11 Would a common reporting template be useful to increase transparency of the joint capacity calculation and maximisation? Please explain why.

1.12 What are the essential elements (e.g. calculation values, methodology) to be included in such a template?

### 1.2.3. Dynamic recalculation – frequency and timing of calculation

TSOs ‘shall apply a dynamic approach to re-calculating technical capacity’. To ensure and improve transparency in dynamic recalculation, two approaches can be considered.

- **Time-dependent re-calculation:** a systematic schedule for time-dependent re-calculation can be proposed, with options such as annual re-calculation before the start of a new gas year, or seasonal adjustments (winter and summer). This approach improves planning and predictability.

- **Occasional recalculation:** re-calculation triggered by specific events such as capacity expansions, new load connections or changing market conditions. While defining relevant events may be challenging, this approach highlights the importance of an adaptive and responsive re-calculation process.

ACER would welcome stakeholders to provide their assessment of the improvement options and to share their substantiated opinion, or to submit any alternative option.

1.13 Please share your views on the benefits and drawbacks of a ‘time-dependent re-calculation’ schedule, and which option—annual re-calculation or seasonal adjustments (or even more granular)—do you find more beneficial. Please explain why.

1.14 Please share your views on the benefits and drawbacks of ‘occasional re-calculation’ triggered by specific events, and on which events would require a re-calculation. Please explain why.

1.15 Which approach do you prefer? Please explain why.

ACER would welcome stakeholders to provide their assessment of the improvement options and to share their substantiated opinion, or to submit any alternative option.

**Concrete amendment proposals**

1.16 Considering the improvement options discussed in this section, do you have concrete proposals to amend the CAM NC? Please specify your proposed revisions to the legal text.
2. Maximising the offer of interruptible capacity

2.1. The gas market benefits from a more transparent offer of interruptible capacity

The CAM NC does not provide guidance on the amount of interruptible capacity that TSOs can offer to the market. Article 32(1) of the CAM NC only provides that yearly, quarterly and monthly interruptible capacity can be offered “if the corresponding monthly, quarterly or yearly standard capacity product for firm capacity was sold at an auction premium, was sold out, or was not offered”. As a result, when offered, TSOs can sell unlimited volumes of interruptible capacity contracts.

Interruptible capacity optimises the use of the gas transmission system:

- Interruptible capacity ensures that any firm capacity that is not nominated by their owners can thus be used by other shippers on an interruptible basis;
- Interruptible capacity enables the marketing of capacity quantities above ‘technical capacity’, due to dynamic optimisation of the flows or by relaxing the system integrity margin to address acute bottlenecks; and
- Virtual reverse flow capacity can be offered against the physical flow direction on an interruptible basis to reflect that its use is dependent on having sufficient forward flow.

Maximising the offer of interruptible capacity is thus beneficial for the gas transmission system and for the gas market.

However, ACER’s Special Congestion Report also highlighted that the offer of interruptible capacity is not entirely disconnected from the underlying physical system. The combination of offering unlimited interruptible capacity at low prices, high market spreads and physical congestion, led to large amounts of interruptible capacity being contracted and subsequently being interrupted as the amounts were disconnected from the physical capacity of the system.

This situation occurred because an unlimited offer of interruptible capacity prevents price to play its role in assigning capacity to those users that have the highest willingness to pay. Instead, users requested large volumes, above their actual needs, to get a larger share assigned on a pro rata basis. Under these market circumstances, offering unlimited interruptible capacity diluted the signalling function of the auction clearing price, which led to misleading signals on capacity scarcity and massive interruptions at congested IPs.

ACER is of the view that the market would benefit from more comprehensive information on how the offer of interruptible capacity is maximised, how the system can manage those volumes and what is the probability of interruption. Ensuring that price can play its role to allocate scarce capacity.

In case of unidirectional IPs where firm capacity is offered only in one direction, TSOs should offer at least a daily product for interruptible capacity in the other direction.

The CAM NC does not indicate the amount of ‘virtual reverse flow’ capacity to be offered. Market parties report that, in some instances, TSOs limit the offer of virtual reverse flow below the forward physical flow.

ACER considers that the market would also benefit from more comprehensive information on how the offer of interruptible capacity is maximised in the case of virtual reverse flow, how the system can manage those volumes and what is the probability of interruption.

2.2. Options to improve the offer of interruptible capacity

Similar to the transparency issues of firm capacity calculation and maximisation, it is necessary to inform regulators and market participants about the physical flow capability of the system, how
interruptible capacity is maximised, how the system can manage those volumes, and what is the probability of interruption.  

**General considerations**

While a prescriptive limit may have negative effects on optimising the use of the gas system, the different metrics listed here could enhance transparency on how the offer of interruptible capacity is determined:

- **Option 1**: set the limit to the technical capacity level:

  While simple, this metric underestimates the physical flow potential that can be achieved due to dynamic optimisation or temporarily relaxing the system integrity margin; in an extreme case where no firm capacity would be nominated, the network might not be used to its full potential.

- **Option 2**: set the limit to the sum of the technical capacity and the system integrity margin:

  This metric recognises that flow above technical capacity is possible in certain cases; however, the system integrity margin, reflecting the flow potential above technical capacity, must be defined.

- **Option 3**: set the limit to the maximum between technical capacity and the recorded maximum physical flow in the last 'x' months:

  Linking the offer of interruptible capacity to the physical flow could better represent the actual amount that can be flown. Given the dynamic optimisation of the system, physical flows above the normal levels could be observed due to exceptional circumstances and not consistently.

- **Option 4**: base the limit on the probability of interruption.

  Less prescriptive, while recognising the issue of offering unlimited amounts of capacity in tight markets where the probability of interruption rises substantially. The probability estimation could be based on the statistical analysis of historical interruption data.

**Considerations for virtual reverse flow**

The general considerations to improve transparency on how interruptible capacity is maximised, apply as well to the specific case of virtual reverse flow.

The additional challenge is that the maximum interruptible capacity for virtual reverse flow would be set before knowing the actual level of the physical flows. Here, an overly conservative approach may result in offering insufficient levels of interruptible capacity.

In case of forward flows lower than forecasted, the interruptible capacity will be interrupted pro-rata, which increases uncertainty for market participants and may incite them to book larger volumes than needed.

ACER would welcome stakeholders to provide their assessment of the improvement options and to share their substantiated opinion, or to submit any alternative option.

2.1 Which information would you find essential to understand how the interruptible capacity is determined and maximised, how the system can manage those volumes and what is the probability of interruption?

2.2 Building on your response to the previous question, would there be any specificities to determining and maximising interruptible capacity in the case of virtual reverse flow?

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12 For tariff purposes, the probability of interruption of different capacity products must be assessed and reported already today per the network code on harmonised transmission tariff structures for gas (NC TAR).
2.3 Which of the listed metrics do you consider more appropriate for explaining how the level of interruptible capacity products has been determined? Please explain why.

2.4 Considering the improvement options discussed in this section, do you have concrete proposals to amend the CAM NC? Please specify your proposed revisions to the legal text.

Bundling of interruptible products

A further improvement to maximising the offer of interruptible capacity could be to bundle it at interconnection points.

The responses to ACER’s scoping consultation were diverse in this respect. Some respondents were supportive in considering the bundling of interruptible products as an improvement and necessity to the system. Other respondents pointed out that mandatory bundling of interruptible products could represent a limit to capacity bookings.

Respondents also pointed out the difficulties in bundling interruptible products when unbundled firm products are booked at the border considering the challenges in matching unbundled firm with bundled interruptible capacity products. In principle, the categories should be defined as firm-firm (maximal bundling already required), firm-interruptible (the bundle would be deemed interruptible), and interruptible-interruptible (the bundle would be deemed interruptible).

ACER would welcome stakeholders to provide their assessment of the improvement options and to share their substantiated opinion, or to submit any alternative option.

2.5 Which merits and drawbacks do you see in mandatory bundling of interruptible capacities? Please explain.

2.6 Considering the improvement options discussed in this section, do you have concrete proposals to amend the CAM NC? Please specify your proposed revisions to the legal text.
3. Improving the offering of capacity

3.1. Limited opportunities to book transmission capacity

3.1.1. The ascending-clock auction algorithm can prove inefficient in maximising the allocation of capacity

When adopted in 2013, the CAM NC introduced significant changes to gas interconnection capacity allocation, with very positive market effects, notably by providing harmonised, simple and clear rules: standard capacity products offered at all EU IPs (and entry points from and exit points to third countries when they are made subject to CAM NC) following the same auction calendar and using the same algorithms.

Still, these allocation rules were designed based on the way the gas markets used to work in the 2010s and to tackle issues that existed at that time, when most capacity was still booked on a multi-annual basis to match long-term gas supply contracts. Behaviours and needs of market participants have evolved quite substantially since that time: shippers and suppliers have gradually adopted more short-term oriented strategies, with gas flows more reactive to price spreads and with market participants exchanging a wider variety of commodity products.

Considering the above, and based on the joint work carried out by ACER and ENTSOG following EFET’s proposals (FUNC issue 2020-0113), ACER intends to propose more frequent capacity auctions, improvements to the efficiency of the ACA auction algorithm and more diverse capacity products.

3.1.2. The CAM NC offers limited capacity booking opportunities to market participants

Yearly, quarterly and monthly products are not offered frequently enough

While on the gas commodity markets, products can be exchanged every day, all day-long, on the capacity primary market, the CAM NC provides for a very limited number of auction dates.

13 https://www.gasncfunc.eu/gas-func/issues/01/2020/view
Yearly capacity products can only be acquired once a year, on the 1st Monday of July, for the upcoming 15 years. Auctions for quarterly products take place on 4 dates on the 1st Mondays of August (Q1 to Q4), November (Q2 to Q4), February (Q3 to Q4) and May (Q4). As for monthly capacity products, they can only be acquired on one single occasion, on the 3rd Monday of each month for the following month.

This calendar, totalling 17 auction dates during the year (for non-daily products), is perceived as too restrictive, and market participants have long been calling for enhanced booking opportunities.

**Monthly products are not bookable in advance, contrary to yearly and quarterly capacity**

Yearly capacity products can be acquired up to 15 years in advance to allow market participants to match their long-term gas supply contracts with capacity rights.

Until the CAM NC was amended in 2017, each quarterly capacity product could only be acquired once during the year. The revised CAM NC introduced enhanced booking opportunities for quarterly products by offering these products concurrently since the beginning of the year.

However, each monthly product remains offered on a sole occasion, at the end of the preceding month. Market participants have expressed the need to be able to secure monthly capacity further in advance.

**3.1.3. Capacity products available to market participants do not match the commodity products available on gas markets**

While European gas commodity markets offer a wide variety of products, the CAM NC only provides for a limited number of standard capacity products at interconnections point (yearly, quarterly, monthly, day-ahead and within-day).

Namely, gas commodity contracts can be exchanged on maturities such as season, balance-of-month (BoM), week (W), balance of week (BoW), weekend (WE) or weekend next week (WENW), which do not match with the maturities of the standard products on the capacity market.

Market participants see value in being able to match their commodity deals more accurately and more simply with capacity contracts.

**3.1.4. Set-aside rule with more opportunities to book capacity**

Article 8 of the CAM NC provides that no less than 20% of existing technical capacity at each interconnection point shall be set aside, with 10% which shall be offered no earlier than the annual yearly capacity auction during the 5th gas year preceding the start of the relevant gas year, and with 10% which shall be offered no earlier than the annual quarterly capacity auction.

The aim of this rule is to ensure that not all capacity volumes are booked long-term, and that minimum volumes remain available short-term. This rule was particularly justified at times when most capacity was booked long-term via legacy contracts.

Most long-term contracts are set to expire in the next few years, leaving significant capacity volumes available to the market, and market participants tend to book capacity closer to their use.

However, the improvement options to increase the number of auctions for yearly, quarterly and monthly capacity via the UPA algorithm (see Section 3.2) have prompted ACER to also re-examine the appropriateness of the current set-aside rule.

**3.1.5. When to offer interruptible capacity with more opportunities to book firm capacity**

Article 32(9) of the CAM NC specifies that the offered capacity shall be allocated utilising a separate auction after the auction of the firm capacity product of equal duration, but before the start of the auction for the next product of shorter duration.
Article 32(10) of the CAM NC specifies that auctions for interruptible capacity products “shall be conducted in accordance with the same design principles and time scales as applied for firm capacity.”

- Point (10) continues: “For annual yearly, annual quarterly, and rolling monthly capacity auctions, the TSO shall notify the network users of the quantity to be auctioned one week before the start of the auction. If the firm auction has not closed on the scheduled start day for the interruptible one to start, the interruptible auction shall open no later than the next business day after the closing of the respective auction for firm capacity.”

In some cases, no interruptible capacity auction can be launched at all.

With the proposals described in this chapter; notably, the introduction of additional auctions for yearly, quarterly and monthly products, changes to the scheduling of auctions of interruptible capacity might be considered.

3.1.6. Conclusion on limited opportunities to book capacity

Improvements to the opportunities to book capacity are justified. They would enhance:

- the efficiency of the ACA algorithm to ensure assignment of capacity;
- the opportunities to offer yearly, quarterly and monthly capacity products to the market; and
- the ability to match transmission capacity products with commodity products;

and might also require a review of related provisions:

- the set-aside rule in a context with more booking opportunities; and
- when to offer interruptible capacity products.

3.2. Options to improve the offering of firm capacity

3.2.1. Improving the efficiency of ascending-clock auctions

ACER considers that the objective of maximising capacity value should not be to the detriment of capacity allocation.

For this reason, the CAM NC should offer the possibility for TSOs to jointly decide to revise up- or downward the level of the large and small price steps between auction rounds once a day (at the beginning of the day) and to publish their level prior to the start of the next auction round. This new tool would allow TSOs to minimise the duration of each ACA auction process while maximising the volume of allocated capacity.

The termination rule for ACA auctions also needs to be assessed.

Article 17(22) of the CAM NC sets out the termination rule which provides that “if an ascending clock auction has not ended by the scheduled starting point (according to the auction calendar) of the next auction for capacity covering the same period, the first auction shall close and no capacity shall be allocated”.

If additional UPA auctions are introduced (see Section 3.2.2), clarity is needed whether the “next auction for capacity covering the same period” should only apply to the auction for the following capacity product or whether to extend it to the additional UPA auctions that would take place as long as there is still capacity left. Currently, the former applies, for instance, the quarterly ACA auction for Q4 should close by the scheduled date of the monthly auction for October.

Several options can be drawn up:

- Option 1: termination rule in Article 17(22) is amended to explicitly apply to the auction for the following capacity product, as is the case now (excluding additional UPA
A C E R  P o l i c y  p a p e r  o n  t h e  C A M  N C  r e v i s i o n

This option entails that none of the scheduled additional UPA auctions would take place when the ACA auction goes on for a long time;

- Option 2: termination rule in Article 17(22) is amended to explicitly apply to the additional UPA auctions, in which case the revised article could either provide that the ACA auction needs to close before the scheduled date of:
  - Option 2(a): the first UPA auction. This option guarantees that at all IPs, additional UPAs would take place concurrently, when triggered; or
  - Option 2(b): the last UPA auction. This option leaves more time for ACAs to allocate capacity but does not guarantee that all UPAs will be run on the same day from one IP to the other.
- Option 3: termination rule in Article 17(22) is amended to close the ACA auction by using an UPA mechanism in the last round of the ACA, starting the UPA using the price level of the last round of the ACA process. This option entails amending the way the ACA auctions are run, and will not allow additional UPA auctions to be carried out when the UPA auction round is triggered (as it will likely allocate all available capacity).

82 The decision whether to use ACA or UPA for a particular product is one of the areas where more flexibility might be needed under the CAM NC as both algorithms are accepted and known by the market (see Section 4).

ACER would welcome stakeholders to provide their assessment of the improvement options and to share their substantiated opinion, or to submit any alternative option.

3.1 Please provide your views on the advantages and drawbacks of Option 1, Option 2(a), Option 2(b) and Option 3 to amend the termination rule in Article 17(22)?

3.2 Which option to amend the termination rule in Article 17(22) do you prefer? Please explain why.

3.3 Would you consider any other improvement of the ACA algorithm?

3.4 Considering the improvement options discussed in this section, do you have concrete proposals to amend the CAM NC? Please specify your proposed revisions to the legal text.

3.2.2. Additional booking opportunities would be beneficial to the gas market

Additional auction dates for yearly, quarterly and monthly capacity products

83 The improvement options brought forward by ACER would consist in complementing the 17 current yearly, quarterly, and monthly auctions organised via the ACA algorithm with additional auctions using the uniform-price auction (UPA) algorithm, which has already been used to swiftly and efficiently allocate day-ahead and within-day capacity products.

84 With this amended auctioning scheme as proposed, any firm capacity available following the yearly, quarterly, and monthly ACA auctions would be offered again in UPA auctions of the capacity product of the same duration, subject to the capacity set-aside rule.

85 ACER considers that the additional UPA auctions should be launched using the regulated tariff as the reserve price, even if the same capacity was sold at a higher price during the preceding ACA auction. This is because any premium in earlier auctions reflects an appreciation of scarcity and market conditions at the time of that earlier auction. Stakeholders’ considerations are welcome on this proposal.

86 Building on the responses received to the scoping consultation and the earlier public consultation on the FUNC case\(^\text{14}\), ACER considers that a weekly frequency would be a suitable option. Weekly additional auctions are also considered a reasonable compromise between only organising one

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additional auction for each product and having several auctions every day (which would resemble ‘first-come, first served’ allocation).\textsuperscript{15}

It might be viewed as overly rigid to specify the frequency of auctions in the CAM NC, as some flexibility might be needed to adapt to market circumstances. On the other hand, leaving this aspect out of the scope of the CAM NC could undermine the predictability of the auction process. A balanced approach could be to allow for certain modifications to the frequency within a predefined range set by the CAM NC (see also Section 4).

ACER seeks stakeholders feedback on the proposed rule according to which only the upcoming front yearly/quarterly/monthly product will be offered via UPA following the corresponding ACA auction. In other words, once a given capacity product has been offered via UPA, it would no longer be auctioned via ACA again. This proposed rule entails that:

- only the yearly capacity product for the upcoming gas year Y should be offered via subsequent UPA auctions;
- only the quarterly capacity product for the front quarter Q should be offered via subsequent UPA auctions (and not the other quarterly products which have concurrently been offered via ACA);
- only the monthly capacity product for the front month M should be offered via subsequent UPA auctions (and not the other monthly products which, according to ACER’s proposal, would have been offered concurrently via ACA);
- non-front products would have further ACA auctions until they reach the state of upcoming gas year, front quarter, or front month.

While these proposals enable a more dynamic offering of capacity, they may add complexity for the market participants as well as require changes to the IT systems supporting the auctioning of capacity.

\begin{center}
\begin{tabular}{|l|}
\hline
ACER would welcome stakeholders to provide their assessment of the improvement options and to share their substantiated opinion, or to submit any alternative option. \\
\hline
3.5 Please share your views on ACER’s proposal to complement the 17 current yearly (1), quarterly (4), and monthly (12) auctions with additional auctions for the respective capacity products. \\
\hline
3.6 Do you agree that the additional UPA auctions should be launched using the regulated tariff as the reserve price? Please explain. \\
\hline
3.7 Do you agree that only the yearly/quarterly/monthly product for the front year/ front quarter/ front month should be offered via subsequent UPA auctions? Please explain. \\
\hline
3.8 Do you agree that a weekly frequency would be a suitable option for additional auctions? \\
\hline
3.9 Are the improvement options feasible in terms of implementation cost and time? Please explain. \\
\hline
3.10 Considering the improvement options discussed in this section, do you have concrete proposals to amend the CAM NC? Please specify your proposed revisions to the legal text. \\
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\textsuperscript{15} Under ‘first-come, first served’ allocation, network users would obtain capacity by merely requesting it without relying on price signals; capacity would not necessarily be assigned to those users that value most the capacity (and would have a higher willingness to pay for it). Assigning capacity to those network users that value it most promotes market efficiency.
Advanced booking opportunities for monthly capacity products

While yearly capacity products can be acquired up to 15 years in advance, and all 4 quarterly products are offered individually before the beginning of the gas year, following annual yearly auctions, monthly products can only be booked before the start of each month.

ACER proposes to apply to monthly products the same logic which currently applies to the offer of quarterly products. Namely, all monthly products within a given quarter would be auctioned in independent auctions before the start of the quarter and during the quarter, in order to respect the cascading principle.

This proposal can be developed in two different ways.

Under **Option 1**, independent ACA auctions would be launched on the current 12 monthly auction dates:

- on the 3rd Monday of September for the monthly products October, November and December,
- on the 3rd Monday of October for the monthly products November and December,
- on the 3rd Monday of November for the monthly product December,
- on the 3rd Monday of December for the monthly products January, February and March,
- on the 3rd Monday of January for the monthly products February and March,
- on the 3rd Monday of February for the monthly product March,
- on the 3rd Monday of March for the monthly products April, May and June,
- on the 3rd Monday of April for the monthly products May and June,
- on the 3rd Monday of May for the monthly product June,
- on the 3rd Monday of June for the monthly products July, August and September,
- on the 3rd Monday of July for the monthly products August and September,
- on the 3rd Monday of August for the monthly product September.

Following these 12 ACA auction dates, additional weekly UPA auctions would be organised to allocate any available firm capacity for the forthcoming month only.

Under **Option 2**, independent ACA auctions would be launched on 4 dates only:

- on the 3rd Monday of September for the monthly products October, November and December,
- on the 3rd Monday of December for the monthly products January, February and March,
- on the 3rd Monday of March for the monthly products April, May and June,
- on the 3rd Monday of June for the monthly products July, August and September.

Following these 4 ACA auction dates, additional weekly UPA auctions would be organised to allocate any available firm capacity for each month until the end of a given quarter.

ACER would welcome stakeholders to provide their assessment of the improvement options and to share their substantiated opinion, or to submit any alternative option.

3.11 Please share your views on the advantages and drawbacks of **Option 1** (independent ACA auction on 12 monthly auction dates) and **Option 2** (independent ACA auctions on 4 dates)?

3.12 Which option for enabling advance booking of monthly products do you prefer? Please explain why.

3.13 Are the improvement options feasible in terms of implementation cost and time? Please explain.
3.14 Considering the improvement options discussed in this section, do you have concrete proposals to amend the CAM NC? Please specify your proposed revisions to the legal text.

3.2.3. Market participants should be able to book capacity products that better match their commodity contracts

Based on stakeholder feedback, ACER has also investigated options to enable market participants acquire a wider variety of capacity contracts, to better match their gas commodity deals. ACER notes that the CAM NC lacks capacity maturities between monthly and day-ahead products.

Almost all respondents to ACER’s scoping consultation are in favour of the possibility for an enhanced variety of maturities for capacity products. Still, there was no unanimous view among stakeholders on the best option. ACER understands that including a new standard capacity product ‘Balance of Month’ (BoM) in the CAM NC would require amending other legal acts or contracts, and in particular the TAR NC. This is the reason why some stakeholders prefer other options.

Any implementation would have to align with the cascading principle, meaning no overlapping capacity products can be offered concurrently.

Given the above, ACER currently considers the following four options:

**Option 1: introduce a new standard capacity product ‘Balance of month’ (BoM)**

- Principle: BoM would be sold every day following the auction of the corresponding monthly product (while containing less days that the corresponding monthly product) and would contain all remaining days of the month, excluding the day-ahead, and no less than 2 days.
- Advantages: creating a new product has the advantage of running only one auction every day for the BoM product, compared to Options 3 and 4.
- Drawbacks: adding a new standard capacity product to the CAM NC requires to find time in the current CAM auction calendar to set up BoM auctions. It also requires amendments of the legal acts (in particular, the TAR NC by creating a dedicated tariff multiplier) and likely also contractual and/or commercial documents. Also, this option does not provide the possibility to acquire other types of (shorter) maturities.

**Option 2: offer all daily products until the end of the month, excluding the day-ahead product in one auction**

- Principle: everyday, following the auction for the corresponding monthly product, daily products of all remaining days of the month, excluding the day-ahead, would be offered together as a bundle.
- Advantages: this option replicates a BoM product without creating a new standard capacity product. There would thus be no need to amend any other legal acts or contractual/commercial documents. The tariff multiplier would be the same as for DA products.
- Drawbacks: this option does not provide the possibility to acquire other types of maturities.

**Option 3: offer daily products in individual auctions until the end of the month**

- Principle: instead of being auctioned every day for the next day, all remaining days until the end of the month would be offered individually.
- Advantages: this option replicates a BoM product without creating a new standard capacity product and will allow market participants to acquire a wide variety of products such as, for example, balance of month (BoM), week (W), balance of week (BoW), weekend (WE) or weekend next week (WENW).
- Drawbacks: this option can prove complex to implement from a technical point of view with exponentially more auctions running in parallel, as well as raise complexity for shippers, for Booking Platforms and TSOs to follow the capacity allocation with a very wide range of possibilities.
Option 4: offer daily products individually up to 7-days ahead, until the end of the month

Principle: instead of being auctioned every day for the next day, the daily products over the following 7 days will be offered individually until the end of the month.

Advantages: this option is less complex than option 3 as it is limited to (up to) 7 days, and will still allow market participants to acquire a variety of products such as, for example, week (W), balance of week (BoW), or weekend (WE).

Drawbacks: this option excludes the possibility of acquiring a capacity contract over the balance of month horizon.

ACER would welcome stakeholders to provide their assessment of the improvement options and to share their substantiated opinion, or to submit any alternative option.

Question to all

3.15(a) Please share your views on the advantages and drawbacks of Option 1 (new standard capacity product ‘Balance of month’). Please explain.

3.15(b) Please share your views on the advantages and drawbacks of Option 2 (Offer all daily products in one auction until the end of the month – excluding the day-ahead product for the front day). Please explain.

3.15(c) Please share your views on the advantages and drawbacks of Option 3 (Offer all daily products in individual auctions until the end of the month). Please explain.

3.15(d) Please share your views on the advantages and drawbacks of Option 4 (Offer daily products individually up to 7-days ahead, until the end of the month). Please explain.

3.16 Which option do you prefer? Please explain why?

Questions to the particular attention of booking platform operators

3.17(a) Please share your view on the feasibility of Option 1, particularly in terms of implementation costs and time?

3.17(b) Please share your view on the feasibility of Option 2, particularly in terms of implementation costs and time?

3.17(c) Please share your view on the feasibility of Option 3, particularly in terms of implementation costs and time?

3.17(d) Please share your view on the feasibility of Option 4, particularly in terms of implementation costs and time?

Question to all

3.18 Considering the improvement options discussed in this section, do you have concrete proposals to amend the CAM NC? Please specify your proposed revisions to the legal text.

3.2.4. Evaluation of set-aside rule with more opportunities to book capacity

Respondents to ACER’s scoping consultation expressed diverging views on the need to revise the capacity set-aside rule. Some stakeholders asked to guarantee that more capacity volumes are bookable on shorter maturities, whereas other stakeholders were concerned that the set-aside rule unduly restrict capacity bookings and should be relaxed or even removed from the CAM NC.

Some respondents rightly pointed out that the CAM NC only provides for minimum set-aside levels, which regulatory authorities can revise upward. Also, concerning the offer of non-yearly
products, the CAM NC only requires that at least 10% of technical capacity is offered no earlier than Q auctions. This means that regulatory authorities not only can decide to set-aside higher volumes of capacity to non-yearly products, but they can also decide to introduce capacity levels to be set aside dedicated to quarterly, monthly and daily products specifically, if needed.

ACER does not see the need to change the set-aside rule since the current volumes of capacity set aside at IPs under this rule do not overly restrict capacity sales.

ACER also acknowledges that the current rule is flexible enough to allow for higher volumes to be set aside upon NRA decision. ACER however proposes to make it more explicit in the NC CAM that higher percentages could be introduced by regulatory authorities at IPs, or that a specific split could be introduced per capacity product on a case-by-case basis, if there is joint agreement on both sides of a given IP.

ACER would welcome stakeholders to provide their assessment of the improvement options and to share their substantiated opinion, or to submit any alternative option.

3.19 Do you agree with ACER's proposal to make more explicit that regulatory authorities may approve, on a case-by-case basis, higher percentages, or a specific split per capacity product? (Article 8 of the CAM NC)

3.20 How would you amend the CAM NC to reflect this? Please specify your proposed revisions to the legal text.

3.2.5. Options to improve the offering of interruptible capacity products

Once the options for the firm auctions are defined, related changes must be made to the offering of interruptible capacity with durations of one month and longer.

Conditions under which interruptible capacity can be offered

For capacity durations of one month and longer, interruptible capacity may only be offered when firm capacity of the same duration was either sold at an auction premium, was sold out, or was not offered. These conditions could be removed to allow unrestricted sale of interruptible capacity.

Removing the conditions would offer more options to market participants to build a portfolio of capacity products. However, unconditional offer of interruptible capacity could also incite market participants to forego firm capacity.

Auction algorithm for yearly, quarterly and monthly interruptible capacity auctions

Currently, yearly, quarterly and monthly interruptible capacity products are offered through ACA auctions. Using UPA instead of ACA would provide more time for the firm capacity auctions, including additional auctions via UPA.

UPA is fast and would ensure interruptible capacity can be assigned timely. However, price discovery via the process of price steps in ACA would be lost.

ACER would welcome stakeholders to provide their assessment of the improvement options and to share their substantiated opinion, or to submit any alternative option.

3.21 Please share your view on the advantages and drawbacks of removing the conditions under which interruptible capacity can be offered. Please explain. Please provide your preference.

3.22 Please share your view on the advantages and drawbacks of using UPA for allocating all (or selected) interruptible capacity products? Please explain. Please provide your preference.

3.23 Considering the improvement options discussed in this section, do you have concrete proposals to amend the CAM NC? Please specify your proposed revisions to the legal text.
3.2.6. Publication of the auction calendar

Until the CAM NC revision in 2017, annual yearly capacity auctions were in March, and ENTSOG thus published the auction calendar for auctions taking place from March Y to February Y+1.

While the revised CAM NC postponed the annual yearly auctions to July, closer to the starting date of yearly products, the auction calendar’s timeframe remained the same, and still announces auctions from March Y to February Y+1.

ACER proposes that the auction calendar is published by ENTSOG by 1st January of year Y for auctions taking place during the period of July Y until June Y+1. Not only will this be more coherent with the changed auction date for yearly capacity introduced in 2017, but it will also leave 6 months for stakeholders (market participants, booking platforms and TSOs) to prepare for the auctions. This additional time might be necessary considering that, following this CAM NC revision, certain auction parameters or rules could be further specified and adjusted when needed ahead of the yearly auction process (see Section 4).

If the above proposal was to be adopted as part of the CAM NC revision, a transitory period would need to apply in the first year allowing ENTSOG to publish action dates for months March to June Y.

ACER would welcome stakeholders to provide their assessment of the improvement options and to share their substantiated opinion, or to submit any alternative option.

3.24 Do you agree that ENTSOG should publish the auction calendar by 1st January of year Y for auctions taking place during the period of July Y until June Y+1?

3.25 Considering the improvement options discussed in this section, do you have concrete proposals to amend the CAM NC? Please specify your proposed revisions to the legal text.
4. Improving the offering of capacity: adapting the rules to the market

4.1. Rigidity in adapting to evolving market circumstances

Revising a network code takes time and may not always be the most effective mechanism to quickly adapt the rules in response to changing market conditions. The importance of designing the rules in such a way to anticipate and accommodate the changing market dynamics is also recognised in Article 16(2)(b) of Regulation (EC) 715/2009 which provides that capacity allocation mechanisms shall be “flexible and capable of adapting to evolving market circumstances” which, however, is currently not always the case.

Considering the above, the key conclusion from the FUNC Issue 01/2020 “Greater flexibility to book firm capacity at IPs” was that more flexibility should be introduced in the CAM NC in order to change selected pre-identified parameters and rules of the capacity allocation process within the flexibility ranges foreseen in the code.

At the same time, introducing more flexibility to the CAM NC should not compromise the efforts to harmonise capacity allocation rules across the EU, as their harmonisation aims to ensure non-discrimination, effective competition and efficient functioning of the internal gas market. It thus important that changing any of the parameters should be done across all IPs that are subject to the CAM NC.

4.2. Enabling the adaption to market circumstances

Considering the outcomes of the FUNC-related work, ACER sees the need to introduce in the CAM NC a possibility to adapt some of the parameters and rules of the capacity allocation process so that they are always in line with the changing market context and needs of the market participants.

Importantly, the proposal is not to apply different rules and parameters from one IP to the other, but to modify, when necessary, certain pre-defined rules and parameters at all IPs and for all TSOs, and in a way that is predictable for market participants.

The CAM NC should set conditions for such modifications. This may involve specifying a default parameter, a set of criteria for when the parameter can be adapted, the responsible entity or entities and process for such adaptation as well as a range within which the adaptation is permitted. All instances of such permissible adaptations should be defined in the network code. For transparency and legal certainty, this could be done via an exhaustive list of the rules and parameters which can be subject to such adaptation. It might be efficient if the adaptation of the rules and parameters could be done within a single process involving ENTSOG, TSOs and market participants (‘adapt-to-market’ process). The adapted rules and parameters should be then communicated to the market sufficiently in advance of their application, and no later than with the publication of the auction calendar i.e. by January 1st of every calendar year for the auctions taking place during the period of July Y until June Y+1. This would leave network users, booking platforms and TSOs at least 6 months (between January and July) to implement and prepare for the changes.

Based on the FUNC-related work and stakeholder input to date, ACER considers that at least the following parameters and rules could be modified to adapt to the market:

- auction dates
- number of auctions

\[16\] See also corresponding Article 10(2)(b) in the recast gas Regulation.
- frequency of auctions
- duration of bidding rounds
- auction algorithm to be applied (whether to use ACA or UPA)

**ACER would welcome stakeholders to provide their assessment of the improvement options and to share their substantiated opinion, or to submit any alternative option.**

4.1 Do you agree that the parameters and rules listed in the paper would benefit from more flexibility in the CAM NC? Please explain why or why not.
   a. auction dates
   b. number of auctions
   c. frequency of auctions
   d. duration of bidding rounds
   e. auction algorithm to be applied (whether to use ACA or UPA)

4.2 Do you see any other parameters or rules of the CAM NC which should be more flexible and able to be modified depending on the market conditions? Please list them and explain why and how.

4.3 Should there be a single ‘adapt-to-market’ process for deciding whether to modify these rules and parameters, or should certain parameters or rules require specific processes? Please explain.

4.4 How to design the ‘adapt-to-market’ process to make it simple, practical and time-efficient while, at the same time, sufficiently transparent, predictable and ensuring sufficient stakeholder involvement?

4.5 Do you see any risks with devising such a process (e.g. insufficient certainty, insufficient regulatory oversight) and if yes, how would you address them?

4.6 Considering the improvement options discussed in this section, do you have concrete proposals to amend the CAM NC? Please specify your proposed revisions to the legal text.
5. Improving the incremental capacity process

5.1. A burdensome process with low success rate

The incremental capacity process offers a harmonised approach for TSOs and regulatory authorities to check for market interest in expanding cross-border capacity, designing and approving proposals for incremental capacity projects and asking the market for contractual commitments which sufficiently cover the costs of the project before implementing it.

The process is burdensome for TSOs and the success rate is low. The incremental capacity processes between 2017 and 2023 have delivered only one project that passed the economic test.\(^\text{17}\)

Furthermore, capacity expansion of the gas transmission system should not undermine the decarbonisation targets and must factor in gas reduction for unabated gas as well as build on a corroborated demand assessment (including the consideration of alternative solutions not requiring infrastructure investment, like reinvestment, which refers to lifetime extension).

ACER consulted the stakeholders on potentially removing the incremental process from the CAM NC, but the proposal was not supported by the market.\(^\text{18}\) There is a high risk of market fragmentation without a common process for TSOs or shippers to test market interest in expanding capacity. Even stakeholders, who supported removing the current process, called for an alternative process to be included in CAM NC.

Should the incremental capacity process be retained in the revised CAM NC, it should at least be legally robust, simplified and streamlined to lower its (currently high) cost, and revised in light of the decarbonisation targets and the forthcoming decarbonisation package.

5.2. Streamlining the incremental capacity process

To improve the incremental capacity process, ACER is considering several options.

Credibility of the market interest

To ensure the efficiency of the process, particularly the steps following the collection of non-binding interest, the continuation of the process should be based on credible expressions of interest.

The introduction of administrative fees for the placement of non-binding interest, subject to regulatory approval, already exists as a possibility in the current rules. This measure could be more widely adopted, achieving a balance between charging process costs, and not unduly discouraging shippers from expressing their interest.

Frequency of the process

- **Option 1**: running the process on a voluntary basis, activated per border by the neighbouring TSOs. This would avoid running the process where it is unlikely to have positive returns.
- **Option 2**: running the process when a shipper calls for it. By allowing shippers to call for running an incremental process, it is avoided that TSOs would not assess, or not frequently enough, market demand for capacity expansion.

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\(^\text{17}\) After a positive economic test, the three involved TSOs – DESFA, Snam and TAP – will make available to the market 1.2 bcm/year of incremental capacity at the interconnection points of the TAP system; that expansion is in line with the binding commitments received during the “2021 Market Test” (https://www.tap-ag.com/shippers/market-tests-7/market-tests-3).

\(^\text{18}\) Note that the TSOs are generally required to develop cross-border capacity accommodating all economically reasonable and technically feasible demands for capacity (Article 13(2) of Directive 2009/73/EC, Article 39(2) of the recast gas Directive), this regardless of the incremental capacity process specified in the CAM NC.
• **Option 3:** set a *less prescriptive frequency*, e.g. TSOs would be required to run the incremental process at least every $x$ years. The competent regulatory authorities could decide on a higher frequency per border. This approach would reduce the costs by having less procedures, while retaining a common process and timeline for organising the market testing.

**Simplifying the process**

Specific elements of the process could be made less prescriptive, giving more freedom to TSOs to tailor the process per border. The main and well-known pillars of the process (i.e. coordination among TSOs, alignment with yearly incremental auction, process steps) would be preserved, while having a more flexible and tailor-made process designed for specific projects. Introducing more flexibility would mean abandoning a fully harmonised incremental process.

ACER would welcome stakeholders to provide their assessment of the improvement options and to share their substantiated opinion, or to submit any alternative option.

5.1 Please share your views on the advantages and drawbacks in charging administrative fees to avoid speculative expressions of interest? Do you have other ideas regarding assuring credibility of demand expressions?

5.2 Please share your views on the advantages and drawbacks of the options for adjusting the frequency of the process? Which is your preferred option?

5.3 Which elements of the process should remain fully harmonised? How would you simplify the process?

5.4 Do you have any other ideas on how to streamline the incremental capacity process? Please explain the possible advantages and drawbacks of your ideas.

5.5 Considering the improvement options discussed in this section, do you have concrete proposals to amend the CAM NC? Please specify your proposed revisions to the legal text.
6. Further amendment proposals

6.1. Implicit allocation: ensuring case-by-case assessment where implicit allocation is considered

The CAM NC harmonises the capacity allocation mechanisms applied at the interconnections between EU Member States. It establishes auctions of standard products, held simultaneously at all IPs/VIPs following a predetermined calendar, as the market-based mechanism to be used by default. Also, upon decision of the concerned regulatory authority, the CAM NC may be applied to the entry/exit points with third countries.

Still, ACER notes that the CAM NC also foresees implicit allocation. Article 3(6) of the CAM NC defines implicit allocation as "a capacity allocation method where, possibly by means of an auction, both transmission capacity and a corresponding quantity of gas are allocated at the same time".

Article 2(5) of the CAM NC provides that "where implicit allocation mechanisms are applied, national regulatory authorities may decide not to apply Articles 8 to 37 [of the CAM NC]". These provisions include allocation of firm capacity products (chapter III, Articles 8 to 18), principles, terms and conditions applicable to bundled products and bundling in case of existing transport contracts (Chapter IV, Articles 19 to 21), incremental capacity (Chapter V, Articles 22 to 31), interruptible capacity (Chapter VI, Articles 32 to 36) and capacity booking platforms (Chapter VII, Article 37).

ACER notes that implicit allocation mechanisms (IAM) are implemented at a very limited number of interconnection points in Europe, namely: the interconnectors BBL and IUK and at the Baltic Connector interconnection point between Finland and Estonia (the IP within the trading region, where an inter-TSO compensation scheme is in place).

While the regulatory authorities may decide to apply IAM also to IPs/VIPs inside the EU, there is a risk of market fragmentation and circumvention of the harmonised allocation rules currently in place across the EU.

ACER consulted the stakeholders whether to amend the implicit allocation definition and the scope of the CAM NC, to make sure that IAM are consistent with the key principles of the CAM NC, and particularly, with the principle of capacity bundling. Most of the respondents to the scoping consultation consider that IAM are working well at the IPs where they apply and there is no need to make the capacity bundling principle mandatory for IAM. Stakeholders also expressed concerns about the extensive application of the IAM to VIPs/IPs inside the internal market.

Respondents indicated that the principles to be applied must be decided on a case-by-case basis, upon an analysis conducted by the regulatory authorities.

In the light of the responses received, ACER considers that major changes in the CAM provisions on implicit allocation are not required. Nevertheless, there may be a need for further clarifying the procedures to be followed by the regulatory authorities to decide on the potential implementation of this mechanism especially when it is applied to IPs/VIPs inside the Internal Market where the application of CAM NC is mandatory.

The revised process could provide that before the concerned regulatory authorities decide on the application of IAM, they should jointly assess all the potential market impacts of deviating from the application of the CAM NC. Such a joint analysis could be carried out on a case-by-case basis.

ACER would welcome stakeholders to provide their assessment of the improvement options and to share their substantiated opinion, or to submit any alternative option.

6.1 Do you agree that, for new procedures, the concerned regulatory authorities should jointly assess the internal market impacts on a case-by-case basis before deciding, in coordination, to apply an implicit allocation mechanism? Please explain your reasoning.
6.2 Which impacts would you deem essential to be assessed before deciding on the application of an implicit allocation mechanism?

6.3 Considering the improvement options discussed in this section, do you have concrete proposals to amend the CAM NC? Please specify your proposed revisions to the legal text.

6.2. Application of the CAM NC to interconnection points, entry points from and exit points to third countries

The CAM NC defines the scope of its application. According to Article 2(1), the code applies to all IPs within the EU and may also apply to entry points from and exit points to third countries, subject to the decision of the relevant regulatory authorities. The CAM NC does not apply to exit points to end consumers and distribution networks, entry points from 'liquefied natural gas' (LNG) terminals and production facilities, and entry points from or exit points to storage facilities. Until now, no interpretation issues have been identified.

In the scoping consultation, some stakeholders raised concerns about the interpretation of the scope of the CAM NC with respect to interconnectors.

Some stakeholders noted that following the extended definition of 'interconnector', the scope of the CAM NC regarding entry from/exit to third countries is not clear. They suggested clarifying the wording to identify the IPs/VIPs where the application of the CAM NC is mandatory. One stakeholder also noted that the application of the CAM NC is mandatory for the Contracting Parties, but can be applied on a voluntary basis on the EU side of the interconnection.

ACER notes that the decarbonisation package is going to revise the scope of application of the network codes and guidelines, including the CAM NC. Article 70(2)(d) of the recast gas Regulation provides that the network codes and guidelines shall apply to all interconnection points within the Union and entry points from and exit points to third countries. Article 70(3) provides a possibility for the regulatory authorities to submit a request to the Commission for a temporary derogation from the application of the network codes and guidelines at entry points from and exit points to third countries.

Article 2(1) of the CAM NC will need to be revised in light of these changes. Interconnectors would then be subject to CAM NC as long as they share interconnection points with adjacent entry-exit systems, or might share a point allowing entry from or exit to a third country.

In addition, Article 2(57) of the recast gas Directive extends the definition of 'entry-exit system' from the gas transmission system to possibly including (parts of) the distribution system. As the entry-exit system is a pillar of the internal gas market design, and may include distribution points, the CAM NC might foresee the possibility for regulatory authorities to apply CAM rules to distribution points to the extent they are part of the entry-exit system.

ACER would welcome stakeholders to provide their assessment of the improvement options and to share their substantiated opinion, or to submit any alternative option.

6.4 Please provide your view on possible reasons for an entry point from and/or exit point to third countries to be derogated from the application of the CAM rules? Please explain.

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19 Initially, Directive 2009/73/EC defined 'interconnector' as a transmission line which crosses or spans a border between Member States for the sole purpose of connecting the national transmission systems of those Member States. This definition was extended in 2019 to also include transmission lines between Member States and third countries (see Directive (EU) 2019/692 of 17 April 2019). The current definition, which remains unchanged in the recast gas Directive, reads: 'interconnector means a transmission line which crosses or spans a border between Member States for the purpose of connecting the national transmission system of those Member States or a transmission line between a Member State and a third country up to the territory of the Member States or the territorial sea of that Member State'.

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6.5 Please provide your view on introducing the possibility for regulatory authorities to apply CAM rules to distribution points that are part of an entry-exit system. Please explain.

6.6 Do you have any other comments on the scope of application of the CAM NC?

6.3. Default procedure for selecting a joint booking platform

Article 37 of the CAM NC requires TSOs to offer capacity on the two sides of an IP/VIP through a single booking platform jointly selected by the relevant TSOs. If TSOs do not reach an agreement, the competent regulatory authorities must jointly select the platform. If an agreement cannot be reached by the regulatory authorities, ACER will designate the booking platform for a period no longer than three years.

At present, 3 booking platforms offer capacities at EU interconnection points: GSA Platform, PRISMA and RBP.

ACER considers that the selection of a booking platform is foremost a commercial matter to be agreed between TSOs. The CAM rules should be designed to promote agreement between the TSOs, as potential disagreements and their escalation to the regulatory authorities and then ACER may significantly delay the selection of the booking platform to the detriment of the market, and should be considered a path of last resort.

Therefore, ACER believes the inclusion of an annex to the CAM NC setting out a default procedure for the joint selection of a booking platform will facilitate TSO agreement and ensure capacity allocation at all CAM-relevant points. The default selection procedure would be used unless the parties agree on a different process. The procedure can draw inspiration from the selection procedure used by ACER for its Decision 10/201920, where the process reached ACER because the involved parties could not agree even on the tendering terms.

Regarding decisions of the regulatory authorities on the designation of a booking platform, a few respondents support to extend their maximum validity from 3 to 5 years or even beyond. As designations of booking platforms by regulators should be an exception, it raises doubt about maintaining these designations for an extended period.

According to some respondents, TSOs should be able to jointly decide on the booking platform and to deviate from regulatory authorities’ or ACER’s decision if TSOs can reach a subsequent bilateral agreement. ACER notes that TSOs enter contractual relationships with the designated service providers and deviating from those contracts is a contractual matter.

ACER would welcome stakeholders to provide their assessment of the improvement options and to share their substantiated opinion, or to submit any alternative option.

6.7 Please provide your view on adding to the CAM NC an annex setting out a default procedure for jointly selecting a booking platform. Please explain.

6.8 Should the maximum validity of designations of booking platforms by the regulatory authorities be extended from 3 years (currently) to 5 years?

6.9 Considering the improvement options discussed in this section, do you have concrete proposals to amend the CAM NC? Please specify your proposed revisions to the legal text.
6.4. Within day auctions: modifying timings of WD24

Within day auctions: modifying timings of WD24

Market participants who wish to book capacity via the first within-day auction, the so-called ‘WD24’, have to wait until 1.30 UTC (winter time) or 0.30 UTC (daylight saving) before the gas day to find out whether they were successful in acquiring WD capacity or not.

Several stakeholders called for modifying the auction timing so that it closes earlier, and possibly adding a second round afterwards.

Instead of closing at 1.30 UTC (winter time) as is currently the case, ACER proposes that the closing time of the so-called ‘WD24’ product be brought forward to 21.00 UTC D-1 (winter time). An earlier closing time would allow market participants to know earlier if they were successful in acquiring capacity, while also giving TSOs additional time during the night to perform system maintenance.

Also, ACER would like to get feedback from stakeholders regarding the use that could be made of the extra-time that would be gained during the night if this proposal is retained. This time could either be used to add an additional WD24 auction after the initial one, or it could be left for TSOs or booking platforms to perform system maintenance during the night.

ACER would welcome stakeholders to provide their assessment of the proposal and to share their substantiated opinion, or to submit any alternative option.

6.10 Do you agree with the proposal to move earlier the closing of the (first) WD24 auction?

6.11 Do you agree with introducing additional auction rounds for WD24 after the initial one?

6.12 How would you amend the CAM NC to modify the WD24 auction? Please specify your proposed revisions to the legal text.

6.5. Capacity conversion model

According to Article 21(3) of the CAM NC, TSOs must offer a capacity conversion service for unbundled capacity based on the conversion model developed by ENTSOG.

Most of the respondents do not see the need for further harmonisation since the conversion mechanisms that are already in place are working well in their view. On the contrary, some stakeholders point out that further harmonisation is needed wherever mismatches on certain borders in the EU occur, making the shippers double-pay for the same capacity because the conversion mechanism, as defined or as interpreted by TSOs, does not cover such circumstances. In this context, stakeholders consider that the conversion service should include daily capacity, it should be available also for holders of secondary capacity and for different legal entities that are part of the same group of the capacity holder. It is also proposed to allow for an ex-post approach where shippers can surrender unbundled capacity following successful bidding for bundled products.

Most stakeholders do not see merit in ACER’s past recommendation to have the same conversion model applying at least per entry-exit zone border.

Regarding the proposed changes in the scope and the ex-post application of the conversion model, no major problems have been detected. Regarding the application of the model service to daily products and the extension of the service to the secondary market, it is considered that the current wording is fit for purpose since it allows users holding mismatched unbundled capacity on one side of an interconnection point to convert that capacity into bundled capacity making it possible to use it. Regarding the ex-post approach, it might be considered as a last resort, only applicable in cases where there is no other possibility to convert the capacity into bundled capacity.
ACER would welcome stakeholders to provide their assessment of the proposal and to share their substantiated opinion, or to submit any alternative option.

6.13 Do you agree with ACER’s view that no further harmonisation of the conversion model is needed? In case you do not agree, please specify your detailed proposed revisions to the legal text.
7. Reflections on aligning the CAM NC with the decarbonisation package

ACER would welcome stakeholders to provide their assessment of the proposal and to share their substantiated opinion, or to submit any alternative option.

ACER invites your further reflections on aligning the CAM NC with the decarbonisation package, not already shared in the preceding questions in this consultation.

7.1 Please share your views on how the capacity allocation rules might align with the decarbonisation objectives, potential capacity decrease and its management.

7.2 Please share your views on how certain allocation configurations might maximise the use of the network in relation to security of supply considerations.

7.3 Please share your views on how the rules in the code interact with and facilitate regional cooperation initiatives and market mergers.

7.4 Please signal essential interactions between possible amendments to the CAM NC and other network codes and guidelines.
8. Other comments

ACER would welcome stakeholders to provide their assessment of the proposal and to share their substantiated opinion, or to submit any alternative option.

1. Do you have any other comments you wish to share with us?
## Annex I

### Table 1: Availability of information on capacity calculation and maximisation

<table>
<thead>
<tr>
<th>TSOs with published information on the methodology for calculating and maximising firm capacity</th>
<th>34 out of 41 TSOs (representing 20 MS)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Trans Austria Gasleitung (AT), Fluxys Belgium (BE), Bulgartransgaz (BG), Plinacro (HR), Net4Gas (CZ), Energinet (DK), GRTgaz (FR), Teréga (FR), Gascade (DE), Gasunie Deutschland (DE), GRTgaz Deutschland (DE), Ferrogaz (DE), Fluxys Deutschland (DE), Bayernets (DE), Nowega (DE), Ontras (DE), Open Grid Europe (DE), Terranets bw (DE), Thyssen Gas (DE), Elering (EE), Gasgrid (FI), Desfa (GR), FGSG (HU), Gas Networks Ireland (IE), Snam (IT), Conexus (LV), Amber Grid (LT), Gasunie (NL), Gaz System (PL), REN (PT), Transgaz (RO), Eustream (SK), Plinovodi (SI), Enagas (ES)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>TSOs without published information on the methodology for calculating and maximising firm capacity</th>
<th>6 out of 41 TSOs (representing 8 MS)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NEL (DE), GTG Nord (DE), SGI &amp; Infrastrutture Trasporto Gas (IT - no cross-border points), BBL company (NL), Reganossa (ES), Swedegas (SE, Article 6 of CAM NC is not applicable to the Swedish gas network)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Additional information published by regulatory authorities on capacity calculations</th>
<th>1 out of 25 regulatory authorities (excluding Malta and Cyprus)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>E-Control (AT) published capacity calculations that is applied by the Austrian TSOs (for market area east).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Member States (MS) with national rules on capacity calculation and maximisation in addition to CAM NC</th>
<th>9 out of 25 MS (excluding Malta and Cyprus)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Austria, Estonia, Germany, Hungary, Italy, Lithuania, the Netherlands, Romania, and Spain have national rules in addition to CAM NC.</td>
</tr>
</tbody>
</table>

### Table 2: Comprehensiveness of the information on capacity calculation and maximisation

<table>
<thead>
<tr>
<th>Basic methodologies</th>
<th>A methodology that includes basic descriptions without explanation of network topology or individual calculation steps</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Trans Austria Gasleitung (AT), Gaz System (PL), Gasunie Deutschland (DE), GRTgaz Deutschland (DE), Ferrogaz (DE), Net4Gas (DE), Nowega (DE), Bulgartransgaz (BG), Bayernets (DE), Thyssen gas (DE), Gasgrid (FI), FGSG (HU), Gas Networks Ireland (IE), Conexus (LV), Transgaz (RO), Eustream (SK), Plinovodi (SI),</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Detailed methodologies</th>
<th>A methodology that includes more detailed descriptions, including graphical explanations, considering network topology and selected variables</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fluxys Belgium (BE), Plinacro (HR), Energinet (DK), Enagas (ES), Teréga (FR), Gascade (DE), Fluxys Deutschland (DE), Open Grid Europe (DE), Terranets bw (DE), Elering (EE), Desfa (GR), Snam (IT), Amber Grid (LT), Gasunie (NL), REN (PT),</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Comprehensive methodologies</th>
<th>A methodology with explicit description of calculation steps, the mathematical model, the scenarios, and boundary conditions</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>GRTgaz (FR), e-control (AT regulatory authority)</td>
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</tbody>
</table>