

SUMMARY NOTE

PUBLIC CONSULTATION ON CAPACITY OFFERING AND USE AT THE GAS INTERCONNECTION POINTS LOCATED AT THE BORDERS OF THE EU AND THE ENERGY COMMUNITY AND WITHIN THE ENERGY COMMUNITY

1. Background

From 12 May 2021 to 30 June 2021, the EU Agency for the Cooperation of Energy Regulators (ACER) and the Energy Community Secretariat (ECS) carried out a joint public consultation regarding gas capacity availability and use on a number of interconnection points (IPs). The IPs concerned are located on the borders of the EU Member States and the Energy Community Contracting Parties and between the Energy Community Contracting Parties (EU MS – EnC CP & CP-CP).

This Summary Note provides an overview of the results of the consultation based on the received input, without, however, necessarily providing a complete or authoritative guidance to the responses to the consultation. The non-confidential responses are available here ([link](#)).

2. Objective of the consultation

By way of this consultation, ACER and the ECS aimed at gaining a firmer understanding of stakeholders' views on best practices in pursuit of enhancing connectivity, optimal use of existing capacity, market integration, and competition. ACER and ECS consulted the market to better understand market needs and to learn about possible approaches to avoid network interruptions and optimise capacity availability at gas interconnection points between the EU Member States and the Energy Community Contracting Parties and between the Energy Community Contracting Parties. The consultation was performed with the objective of highlighting possible ways and means for enhancing market integration and competition, to the ultimate benefit of gas consumers.

3. Scope of the consultation

Table 1 lists the IPs in focus of the consultation. However, the consultation questionnaire also provided “open fields” where respondents could provide any comments, including on other IPs.

Table 1: Interconnection points within the scope of the consultation

IP code	IP Name	Country 1	Country 2
217	Drozdovichi – Drozdowicze	Ukraine	Poland
21Z000000000266H	Hermanowice	Poland	Ukraine
218	Uzhgorod / Velke Kapushany	Ukraine	Slovakia
71	Budince	Ukraine	Slovakia
219	Beregovo / Beredgaroc	Ukraine	Hungary
229	Beredgaroc / Beregovo	Hungary	Ukraine
226	Tekovo - Mediesu Aurit -	Ukraine	Romania
21Z000000000304Z	Orlovka – Isaccea 1	Ukraine	Romania
21Z000000000305X	Orlovka – Isaccea 2	Ukraine	Romania
21Z000000000306V	Orlovka – Isaccea 3	Ukraine	Romania
21Z000000000151Y	Orlovka – Isaccea (import)	Ukraine	Romania
21Z000000000182N	Oleksiivka	Ukraine	Moldova
	Ananiv	Ukraine	Moldova
	Lymanske	Ukraine	Moldova
21Z000000000178E	Grebenyki	Ukraine	Moldova
21Z000000000179C	Kaushany - Caushany	Ukraine	Moldova
21Z000000000356G	Iasi - Ungheni	Romania	Moldova
21Z000000000154S 48	Kiskondorozsma - Horgos	Hungary	Serbia
58Z-000000007-KZ	Kireevo / Zajecar	Bulgaria	Serbia
50	Kuystendil-Zidilovo	Bulgaria	North Macedonia
49	Loznica / Zvornik	Serbia	BiH

4. Participants and questionnaire

While ACER and the Energy Community Secretariat were particularly interested in hearing from users (actual and potential) of gas transport capacity and other services provided by transmission system operators (TSO) on the gas pipelines / IPs concerned, the consultation was open to any party or individual from around the world.

The questionnaire was framed to allow respondents to share their views on approaches ensuring the optimal use of capacity and secure and reliable flow of gas, whilst allowing for proper cooperation with regard to improving gas network services at the relevant IPs. The questionnaire was designed to cover the following topical areas:

- Fair and transparent terms of access to services, including capacity contracts, network codes and contracts for auxiliary services;
- Market integration
- Availability of capacity (capacity availability, allocation and use) and maintenance, gas quality issues (interoperability);
- Issues related to Network Codes (NCs);
- Issues related to particular IPs

When providing answers and comments, respondents were invited to focus on the following potential solutions to any issues:

- “Technical approaches”, i.e. engineering solutions, e.g. looping a pipeline or managing flows with pressure differentials;
- “Commercial approaches”, i.e. contractual terms and conditions, e.g. transferring the use of capacity rights to another IP for an agreed fee when the contracted capacity is not available;
- “Market design approaches”, i.e. rules that are typically part of network codes, e.g. setting up virtual interconnection points.

Respondents could select from pre-defined menus and – in case they wished to do so - explain their choices, as well as provide any further comments and suggestions in free (text) form, on any of the above issues and solutions and for each IP, as well as provide further comments beyond the outlined topical issues and approaches.

By the closing of the consultation, 15 responses were received, along with one “empty” response that contained no answers or comments and is therefore not considered. Eight of the responses were submitted as public, and seven as confidential.

The largest number of responses was received from traders / suppliers (9), followed by those received from transmission system operators (TSOs, 3), as well as a gas-to-power and heating plant, a consultant, and an industry association. Geographically, responses were received from respondents in EU Member States (9), Energy Community Contracting Parties (3), and from respondents residing elsewhere in Europe (2) and in Canada (1).

5. Summary of responses

In summarising the responses, ACER and the Energy Community Secretariat considered all information in all responses. For those responses marked as confidential, information that was too specific (e.g. referring to a particular IP, TSO or NRA) was rephrased in order to respect the confidential nature of those responses while maintaining the main messages.

5.1. Highlights of obstacles

Among frequently mentioned obstacles the following ones can be highlighted:

- Physical system upgrades are promoted where “soft” market and regulatory solutions could suffice to resolve the issue of increasing capacity (if needed at all), thus creating risks of wasting money and increasing tariffs;
- Transparency is inadequate regarding many aspects of the availability, contracting, and use of capacity, putting some market participants at an advantage due to better awareness about key parameters of the market, e.g. incumbents and dominant suppliers may have undue influence on markets;
- Licensing and other bureaucratic hurdles may create undue skew by putting some market participants at an advantage, due to barriers to entry, reduced competition, and greater cost to business (compliance) and the public at large (cost of network services);
- Interconnection agreements (IAs) are not concluded at some IPs;
- Greater attention should be paid to the interplay between network services markets and gas (commodity) markets. In many instances, gas is not “fungible” due to either lack of ability to transfer contracts to another IP, lack of capacity release programs, lack of reverse flow capability, or simply because of unavailability of freely traded gas (lack of gas release programs where it might be beneficial for reducing market dominance, lack of diversification of supply and regulatory instability and unpredictability);
- Firm capacity availability can be seen as in short supply, and is sometimes labelled as “firm” when it is actually “less interruptible” or cannot be “firm” at all;
- NC implementation is seen as inconsistent, incomplete, and – on the IPs along the borders between the EU Member States and the Energy Community Contracting Parties – asymmetrical;
- Capacity is not even offered at some IPs;
- Gas quality and gas measurement standards and procedures are inconsistent and lead to market segmentation;
- VIPs are implemented in an inconsistent manner and to an inadequate extent;
- RES integration is inadequately considered.

Overall, respondents see market integration and competition as still quite imperfect. The business environment is consequently seen as risky, thus discouraging market entry by risk-averse businesses, increasing the cost of doing business due to the need to take risk-hedging steps, and generally slowing down the growth of free, competitive markets due to the perceived obstacles.

5.2. Highlights of recommended solutions

Respondents recommend a range of actions for overcoming the still existing deficiencies. Among actions that could help to overcome the identified obstacles and reduce risks, respondents point out the following:

- Systematically reassess investments in physical infrastructure, by preferring commercial and regulatory solutions rather than building physical infrastructure, whenever possible at all;
- Taking a more holistic approach to capacity and commodity markets, in consideration of that fact that cross-border trading and use of capacity also depends on levels of liquidity in the commodity markets, which can also be a result of barriers to entry;
- Introducing VIPs and VTPs whenever possible, but with due care and where their introduction would make sense, in a carefully designed and monitored way;
- Strive to fully apply EU's and the Energy Community regulatory framework, with due care in instances where application may not be appropriate due to commodity markets, security of supply and other considerations; Specifically regarding NCs' consider the following, and more specifically:
 - Entry-exit tariffs system
 - Transparent tariffs methodology
 - Capacity products at least: YA, QA, MA, DA
 - Common energy units (KWh/h or MWh/d)
 - Interoperability: ensure that IAs are signed for all IPs and capacity is offered at all IPs
 - Harmonised approach to booking capacities (same calendars, auction systems)
 - System for nominations (edig@s);
 - Clear booking/nomination rules;
 - Bundled capacity offers.
 - Harmonised maintenance program on borders avoiding the flows interruptions
 - Reverse flow ability.
- Increase transparency;
- Introduce common or at least consistent gas quality and gas measurements standards, rules, and procedures, at all IPs;
- Address instances where capacity (both firm and interruptible) may be perceived as withheld from the market, by greater regulatory oversight and consistent implementation of the NCs, and discourage instances where capacity products are misrepresented (e.g. as "firm" while actually not being such);
- Strive to reduce market concentration in both the services and the commodity markets, and capacity hoarding, by addressing issues related to market dominance and incumbents;
- Further promote trans-border cooperation by applying a variety of platforms, processes (e.g. CESEC, PCI, PECl, etc.),
- Integrate EnC TSO into ENTSOG and increase cooperation between the NRAs, including through ACER.

The Annex of this Summary Note contains additional information about the responses, with a focus on the identified obstacles and the proposed solutions.

ANNEX

ADDITIONAL INFORMATION ABOUT THE CONTENT OF THE RESPONSES

1. Approaches to improve access to and use of capacity

a. Technical approaches

A recurrent point of view in responses is that adequate physical (technical) capacity is already available, or even that some already made investments to increase such capacity are actually redundant, without, however completely excluding the possibility of considering further system reinforcements – but only if much stricter criteria are applied for pinpointing and justifying such reinforcements.

Another “physical” issue mentioned in responses is related to the need to better align gas quality management and gas metering practices.

Respondents tend to point out that priority at this time should be assigned to “soft” approaches for improving capacity availability and use, i.e. to commercial and regulatory solutions which should be preferred over investments in physical infrastructure whenever possible.

b. Commercial approaches

Respondents highlight a number of areas and specific cases where the benefits of commercial approaches to improving capacity availability and use are yet to be reaped. In the view of the respondents, access to capacity is suboptimal in a number of instances, due to skewed application of terms and conditions for such access, to undue subsidies, or even to outright de-facto dominance by a party over capacity use, a circumstance that prevents the free flow of gas and thus impacts the commodity (gas) market as well. A sample of areas (not necessarily exhaustive or in order of priority) where respondents see opportunities for putting commercial approaches to better use includes:

- Discontinuation of the inclusion in the same virtual interconnection points (VIPs) of IPs which handle gas flows that are not “substitutable” or “fungible”, due to lack of physical ability to redirect flows, lack of reverse flow capability, or differences in the capacity products which can actually be used at the IPs;
- Overcoming the great variations in the features of available firm capacity products at different IPs, even ones located along the borders crossed by the same infrastructure route;
- Stricter application of use-it-or-loose-it (UIOLI) rules;
- Addressing the limitations of access to interruptible capacity;
- Resolving the limited or non-existent options for capacity contract transfer between different IPs;
- Addressing the limitations on the availability of shorthaul services;
- Resolving the inconsistency of the features of the forward/reverse capacity offers along the same infrastructure route.

- Addressing the evolving balance between long-term and short-term capacity bookings and the associated tariffs and multipliers, in particular evaluating the need to continue the preferred treatment of long-term capacity products;
- Applying a holistic approach to capacity and commodity markets, in consideration of that fact that cross-border trading and use of capacity also depends on levels of liquidity in the commodity markets, which can also be a result of barriers to entry, burdensome administration requirements, lack of a clear legislative regime, and regulatory instability and unpredictability.
- Striving to further improve regulatory cooperation in pursuit of finding market-based solutions in the above areas.

Respondents stress that the full and consistent application of the European Union's and the Energy Community's regulatory framework, *in particular network codes*, is likely to help to resolve these concerns, a view which essentially reiterates the comments regarding the need to apply technical solutions: priority should be assigned to software solutions, before investments in infrastructure.

c. Market design approaches

Respondents point out to a number of areas where better market design and market transparency should be pursued. Examples include:

- Instances where dominant upstream companies could benefit from subpar transparency and the resulting information asymmetries could give such companies undue leverage to influence markets;
- Carefully considering the trade-offs in cases of offering firm capacity where capacity does not physically exist, as such an approach may not be well aligned with entry/exit tolling, thus reducing the efficiency of each pipeline system. However, once such a choice has been made, it should not be reconsidered.
- VIPs should be established by mutual TSOs' agreement rather than mandated, as a number of circumstances have to be considered. Such circumstances may include, for example, whether the gas is also freely tradable, at least in quantities that would facilitate the TSOs' agreement, whether there are differences in pressures at different IPs on the same infrastructure route that essentially exclude some IPs from the realm of virtual, what is the likely number of days and the volumes which are likely to be posted for backhauling by capacity users, etc. Such circumstances have an impact on actual physical flows and to a large extent define the range of capacity products which "make sense" in a given infrastructure and physical flow configuration, for example whether "firm backhaul" makes sense at all.
- Further considerations pointed by respondents regarding the establishment of VIPs include the need to assess any possible negative impact on capacities offered at particular IPs, potential mismatches on the two sides of an IP, and reduced overall offering of capacity.
- On the other hand, the establishment of a VIP should go hand-in-hand with transparency around capacity availability and actual gas flows, in order to help market participants plan their activities. Such transparency should, of course, be present even if no VIP are established. Information on the tariffs applicable

at different entry/exit products is frequently presented and/or denominated in different units, creating unnecessary problems around estimating the costs of gas and potentially leading to certain imbalances resulting from unit conversions. Identical energy units should be implemented across Europe to improve the conditions to trade.

- Anti capacity-hoarding measures need to be in place and issues around the ongoing influence of legacy contracts need to be resolved.
- EU rules on unbundling, as well as the network codes need to be effectively implemented in all the countries in question in order to ensure free movement of gas.
- Regarding available freely traded gas, respondents point out that market concentration can constitute a barrier to enter and trade at given markets, distorting the way through which the interplay between supply and demand would direct the flows between different market areas. Similar considerations are applicable to capacity hoarding as well. Well-designed gas release programmes together with other obligations on dominant players, such as market-making obligations or underwriting the balancing market for a transitional period can collectively support the transition towards market-based competition.
- With the above considerations in mind, as far as capacity markets are concerned, VIPs and greater availability of firm products are seen by a range of respondents as basic tools that help to enhance free movement of gas and promote market integration, competition, and security of supply. This should be complemented by the right interruptible capacity products and access to virtual trading platforms (VTPs). VIPs provide simplified capacity booking process and increased transparency which ensures equal access to the information to all parties, which helps to achieve optimal capacity booking structure, flexibility between balancing zones.

2. Other market integration solutions

In addition to various issues and potential solutions in the area of technical, commercial, and market design approaches, respondents point out a range of other potential ways and means that could help to establish free, competitive commodity (gas) and services (capacity) markets and promote their integration:

- Former incumbents may still enjoy ongoing state support in different Member States and Contracting Parties, giving these entities competitive advantage and foreclosing the market for competition. Historical players should instead hold certain responsibilities in terms of allowing market access and facilitating market-based competition (gas release programmes).
- Interconnection agreements are still not concluded at some IPs between EU Member States and the Energy Community Contracting Parties ;
- There are asymmetries in the introduction of VIPs (backhaul), transparent capacity allocation mechanism in form of auctions, the signing of IAs, and standard matching and allocation procedures. Ways should be found to at least reduce such asymmetries, if not mandate symmetrical approaches.

- A potential element of market integration could be the implementation of the applicable rules on network users' access to VTP/balancing market in Energy Community Contracting Parties;
- Regulatory authorities should address more resolutely the issues of non-harmonised licensing requirements for market participants, as well as potentially excessive licensing requirements that deter market entry and competition;

3. Best practices

a. Capacity demand instruments to better serve market integration

Respondents shared views on the ways in which capacity services products could be structured in a way that would further promote market integration:

- Instruments should foresee the move to integrated electricity and gas systems planning and operation, in pursuit of climate goals which would require better integration of renewable energy sources (RES). Specifically regarding interconnections, such an approach should become integral in network planning, especially 10-year network development plans (TYNDPs) and lists of projects of common interest (PCIs), projects of Mutual interest (PMI), projects of EnC interest (PECI) as well as the incremental capacity process foreseen in the CAM network code. However, the lengthy procedures associated with such tools may lead to uncertainties about the availability of long-term capacity, and the procedural aspects should be revisited to make sure that they are shorter, more transparent, and better fit for maintaining adequate levels of capacity;
- Stricter criteria should be used for the promotion and implementation of infrastructure projects.;
- Efficient allocation and utilization of the already available capacity is often more important than further network expansions. Authorities should first ensure that available capacities are being offered at competitive rates (i.e. not disadvantaged against the historical contracts);
- Administrative market entry barriers (such as onerous licensing requirements and fees, reporting obligations) can work against market integration just as they work against the build-up of liquidity on national markets. It is important to analyse the potential issues around market integration also from the national perspective, where certain barriers may exist that prevent market entry (administrative and/or regulatory barriers can also work against market integration);
- Enhanced trans-border cooperation at regional level should be encouraged, for example in the CESEC format;
- Further harmonisation of data, information tools and information availability is needed between the EU Member States and the Energy Community Contracting Parties. For example, it is important for the auctioned capacity and its reference price to be published sufficiently in advance and the allocated capacities should be tradeable on a secondary market;

- In highly concentrated markets, gas release or capacity release mechanisms should also be considered to make sure that network utilization is not hampered;

b. Best ways for network user to benefit from capacity allocation / optimal use of existing systems and capacity

- Transparency is essential for markets to work and integrate, thus also promoting greater liquidity. Improved transparency of bookings at IPs is required, along with improved regulatory oversight – less heavy on procedure but more effective on making sure capacity is offered on fair and transparent terms. Firm and bundled products should be offered in a transparent manner on booking platforms without administrative hurdles, barriers for registration, and onerous conditions for participation in auctions;
- There are instances where a TSO may be seen as withholding firm capacity; strict implementation of the gas acquis on either side of IPs must be applied – the role of NRAs and ACER is crucial.;
- Whenever possible, create VIPs and make sure interruptible backhaul capacity in unidirectional IP is offered, in the opposite direction to the physical flow of natural gas, within the limit of the firm capacity reserved in the direct flow direction.
- Further implement the good tools available in the frameworks of the TYNDP, PCI / PEGI / PMI and network codes;
- Improve TSO-to-TSO cooperation and communication, especially in cases of maintenance and other instances of flow reduction or interruption – integrate CPs TSOS in ENTSOG;
- Allow for shift of capacity (including time shift) between IPs and further enhance the reciprocal implementation of NCs on the IPs between the EU Member States and the Energy Community Contracting Parties.

c. Best ways to handle emergencies

- Improve transparency, ensure that earlier heads-up warnings are available to users, use the “bad news fast” principle. Emergencies should always be timely communicated to the market participants;
- Avoid imbalances and imbalances build-up, inform partners about any imbalances on the day of occurrence and – when expected to be persisting for more than a day - ahead of time. Communicate this information upstream and downstream and involve ENTSOG, ACER, and the Energy Community Secretariat and use the INT NC;
- Accelerate the implementation of Regulation 2017/1938 on security of gas supply in the Energy Community, to enable effective plans for emergency situations management, especially for the cooperation of Competent Authorities within the framework of Preventive and Emergency Plans elaborated in advance among competent authorities of an IP; the conclusion of an Intergovernmental Agreement between the relevant Member State and Contracting Party. Make sure that the plans are properly “transposed” at operational level (at TSO and TSO-to-TSO level);

- Enhance the role of storage capacity, diversification of supply, and demand-side management; Make sure that backhaul capacity is as firm as it can possibly be firm, diversify supply sources;
- In the event of an emergency, keep the market timely and continuously informed and keep the market open as long as possible, for example by maximising available capacity at alternative entry points as far as possible and providing dynamically recalculated information about available capacity at alternative entry points.
- Introduce VIPs whenever possible, and make sure that, to the extent possible, NC are symmetrically applied on the two sides of IPs between the EU Member States and the Energy Community Contracting Parties;
- Detailed information on infrastructure topology should be always available to the market participants to help them understand the gravity of any technical faults that occur in the network.

d. Best approaches to gas quality measuring rules, specifications and standards

Respondents suggest several possible solutions, and while not all suggested approaches to gas quality are necessarily consistent, respondents seem to coalesce around the notion of ensuring interoperability and minimum required gas quality standards:

- The CAM NC and interoperability rules must be fully implemented to all IPs;
- Identical definition of gas quality measuring rules should be introduced at all IPs, and then at each IP the TSOs shall determine the parameters of natural gas quality by using equipment that meets the same specifications and standards. To achieve that, European regulations should be introduced that require that the TSOs avoid use inconsistent basic parameters that need to be controlled to allow cross-border natural gas flow.
- International standards could be applied for assessing gas composition (e.g. standardized measuring techniques - utilization of gas chromatography in accordance to ISO 6974 - part 5 - gas composition, and identification of sulphur compounds in accordance to ISO 19739 to ensure reduced environment pollution). Similarly, for calorific value ISO 6976 - calorific parameters, including hydrogen, could be used. Oxygen levels must be kept at an acceptably low level (say 0.1% vol).
- The neighbouring transmission system operators shall conclude a comprehensive interconnection agreement covering all relevant parameters which should be transparent. That agreement shall satisfy the quality requirements of the two connected systems of the interconnection point and it shall not be limited by general quality criteria, even those which are deriving from points that are hydraulically inaccessible from that interconnection point.
- To achieve full interoperability, universal standard for fuel quality measurement by all transmission system operators should be introduced, as a part of national network codes.

e. Best approaches to managing gas measurement rules and standards

- Compliance with the rules on natural gas measurement provided in the INT-NC.
- Compliance with the provisions of standard EN1776 for Class A gas measuring installations as well as measuring methods and measuring equipment shall be in accordance with the applicable EN and ISO standards, in the original English language versions. The gas metering station shall be located in the territory of the European Union in order to make the application of EU gas measurement rules and standards mandatory.
- In any case, common rules and standards of gas measurement should preferably be applied at all IPs. Agreement over common standards for measurement (such as the applicable temperature and pressure) should encourage greater integration. Universal reference parameters for all member countries to measure GCV and NCV, should be determined during international consultations and then implemented at each measuring point. Greater facilitation by and cooperation between ACER and the ECRB and the Energy Community Secretariat could improve the process of defining, applying and executing the different rules and standards for gas measurement across the respective regions.

f. Best approaches to ensure network users can manage the risks related to the firmness of transport contracts and balancing adequately

- Transparency and timely information provision about any scheduled/unscheduled network availability issues is of key importance for the market participants to react to the new situation, as well as about nominations and bookings. TSOs should publish accurate information that allows network users to balance their positions independently in near-real time. This reduces the imbalance levels that need to be managed by the system operator and promotes liquidity in the markets. If alternative routes to the interrupted pipeline exist, TSO should have the freedom to offer solutions that could allow market participants to balance their portfolios through these alternative routes.
- Make sure the terms and conditions applicable to a product are clear and unambiguous, e.g. avoid labelling a product as “firm” when it is actually “less interruptible”;
- Strive to fully apply NC at all IPs, preferably in symmetrical way on the two sides of the IPs, and operate joint balancing accounts by the TSOs, with shippers defined as per EU regulations;
- Ensure that all IPs are covered by interconnection agreements;
- Provide access via VIPs, look for ways to reduce market concentration.

g. Best approach the TSOs need to undertake to improve the exchange of information amongst market participants

- Common data exchange solutions;
- Communication procedures during emergencies;
- Communications in instances of interruptible capacity and transmission.

4. Other issues

- Clear procedures for dispute resolution with respect to execution of interconnection agreements should provide additional confidence in trading between different zones.
- Make sure that maximum firm capacity is offered and that TSOs don't have the choice of not offering firm capacity when such offering is possible at all;
- Make sure that interconnection agreements are signed for all IPs.

5. Which NCs should be implemented by which IP at the EU MS and EnC CP border?

Respondents point out different options for the application of NCs:

- All NC on both sides of all IPs;
- INT, CAM, and BAL NCs, at some IPs;
- INT, CAM and TAR NCs, at some IPs,
- INT and CAM NCs, at some IPs.
- CAM NC only, at some IPs, with the IP also covered by VIP - or not;

Some respondents point out that the BAL NC should not be applied at any IP.

Applying bundled capacity is also seen as a potential problem by some respondents.

6. Capacity availability and use

a. *Firm physical bi-directional capacity availability under normal, maintenance, and emergency conditions*

- Respondents point out that "firm" bi-directional product is rare – it existed in one instance in the past and then was discontinued – and that "firm" should be carefully used when describing bi-directional flow in the reverse mode, in order to avoid misconceptions about the "firmness" of the product.
- Issues include the non-availability of such products under any condition on a number of IPs, or the non-availability of the product under normal conditions, or (in one instance) the insufficient availability of capacity under normal conditions.
- However, while the infrastructure adequacy should be evaluated based on the N-1 criterion, the lack of adequacy should not by default be treated as a result of insufficient infrastructure, and it should be analysed whether the access to the existing infrastructure could be further improved in the first instance.

b. *Firm virtual backhaul modality (bi-directional capacities availability) under normal, maintenance, and emergency conditions*

- Respondents point out that such a product is not in use. Some respondents also question the very *raison d'être* of the concept of such a product, albeit from different perspectives: whether it makes sense at all as a commercial product, or whether the reason for the product not to be extant is rooted in the absence

of any flow in the “normal” direction. Besides, virtual backhaul is not legally defined in at least one Energy Community Contracting Party.

c. Insufficient firm capacities one way only

- Only one respondent indicates that there is such a case, at one IP.
- While respondents generally find capacity adequate, they point out that at an number of IPs firm capacity is only available in one direction;
- No capacity whatsoever is offered at one IP, even though it is in operation, with actual flows going through it.

d. Other issue(s) related to the availability of capacity at the concerned IPs

- Lack of IP agreements or regulatory framework alignment, circumstances which prevent the introduction of firm reverse flow and other important products;
- Evaluation of firm capacity is not performed in compliance with the CAM NC;
- Lack of gas quality minimum standards leads to the use of interruptible products only;
- VIPs should be used to the maximum extent;
- Asymmetries in the application of NC should be avoided;
- Capacity should be allocated via auctions.

e. Best possible future approaches to ensure that network users enjoy fair and transparent access to capacity and other network services at the following IPs, on competitive market terms

- Full application of the EU rules of access to the transmission system, including NCs, and more specifically:
 - Entry-exit tariffs system
 - Transparent tariffs methodology
 - Capacity products at least: YA, QA, MA, DA
 - Common energy units (KWh/h or MWh/d)
 - Interoperability: IA on all points
 - Harmonised approach to booking capacities (same calendars, auction systems)
 - System for nominations (edig@s);
 - Clear booking/nomination rules;
 - Bundled capacity offers.
 - Same maintenance program on borders avoiding the flows interruptions
 - Reverse flow ability.
- Establishment of VIPs.