ACER Public consultation on inter-temporal cost allocation mechanisms (ICA) for financing hydrogen infrastructure

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A) Risks underpinning the development of hydrogen networks

1. In your view, what are the main risks faced by the following parties? Please elaborate.

a) Hydrogen end-users: different risks depending on their decarbonization options. Those with alternatives, such as electrification, risk a lock-in effect when committing to hydrogen infrastructure (and vice versa). Additionally, the wide range of hydrogen price forecasts, influenced by still unclear regulations on non-green hydrogen production, creates uncertainty about the economic viability of different decarbonization paths. As a result, many postpone large investment decisions – with a technology switch – until price projections become more certain. Unclear hydrogen network fees, particularly at the distribution level, and uncertain long-term market mechanisms also add to investor attentism.

b) Hydrogen suppliers: uncertainty when potential customers will be connected to the core or distribution grid and especially, how much they are willing to pay in the long term. This uncertainty makes it difficult to secure buyers for their production, leading to a lack of FIDs.

c) Hydrogen network operators:
   - Constant H2 availability (and therefore liability risk towards the end user / customer), especially in the ramp-up phase and ensuring system integrity (pressure) according to Regulation (EU) 2024/1789, Articles 37 and 56 despite possible fluctuations in feed-in and off take
   - Incomplete national regulation on blending, when it comes to repurposing of the grids (investments in "H2 readiness")
   - Incomplete regulation due to not yet transposed gas- and hydrogen package on national level
   - Therefore it is difficult to calculate grid tariffs; potentially there will be prohibitively high grid fees at the beginning, making it hard to find enough customers; portion of the deductible in a inter-temporal-cost-allocation mechanism
   - Readiness of other Hydrogen infrastructure (i.e. storage)

2. What are the main reasons preventing <u>hydrogen end-users</u> from signing long term hydrogen off-take agreements?

Front runner problem: Not only are the current hydrogen prices too high to be an attractive alternative to other options, it is also projected to fall significantly in the coming years. Therefore, the best strategy from an economic perspective is to wait with the transformation until a stable hydrogen market has formed or to only commit to short-term contracts and to ride the cost curve. End users therefore try to minimize uncertainties regarding availability and price development by observing market trends. Attractive contracts for end consumers can be accompanied by certain guarantees, which may quickly become economically unviable or entail significant risks for the supplier. Public funding especially via IPCEI, PCI projects and hydrogen bank help but do not seem to be sufficient from a current point of view.

3. **Main reasons preventing hydrogen suppliers from signing long term capacity booking contracts (e.g. ship-or-pay contracts)?**

At a price that ensures economic viability for suppliers, they do not have enough secured buyers. This lack of "guaranteed demand", in turn, prevents them from making FID. For suppliers, a long-term perspective with specific guarantees is essential to secure long-term capacity bookings. To achieve this a not too ambitious political framework on hydrogen (DA on RFNBO and LCF) as well as regulatory stability is needed.

B) Scope of intertemporal cost allocation mechanisms

4. **What strategy is preferable for the development of hydrogen transmission networks?**

Option 1: Gradual approach based on largely verified demand needs (e.g. binding off-take commitments)
X Option 2: Core network developed at an early stage to allow for market development
Option 3: Other (Please elaborate)

5. **What criteria should be used to identify the infrastructure to be financed by inter-temporal cost allocation mechanisms?**

In general there should not be exclusive infrastructures when identifying potential beneficiaries of a intertemporal cost allocation mechanism.
The decisive criteria are local demand and the availability of alternatives. Areas that meet these criteria must not be denied the establishment of a hydrogen (distribution) network, as demand in such regions will persist in the long term and is likely to increase. When industrial areas convert their processes to hydrogen, they plan this over an extended period. The conversion from natural gas to hydrogen involves significant investments and binding resources for companies. This alone ensures the long-term benefits of the hydrogen network. Therefore, besides hard to abate sectors, IPCEI projects and large industrial consumers, cogeneration plants – be they industrial, be they "residential" – should be a focal point when identifying the infrastructure.
Similarly, in the heating sector at the distribution level, households that convert their heating systems to hydrogen plan to use these systems for several decades. This may be especially true for households nearby industrial consumers, commercial areas or transmission pipelines. Since hydrogen will most probably be delivered to them in the future, it is economically feasible to connect households "along the way". Also, it may be more helpful for the hydrogen ramp up – bearing in mind the scarcity of hydrogen supply, to start with several smaller consumers (commercial areas, households) than with large energy-intensive industrial consumers (depending on the possibilities of the use of blends).

6. **What measures, besides binding open seasons, can enhance the accuracy of hydrogen demand projections over time and consequently optimize the planning of hydrogen networks?**

Inquiries by the DSOs from customers in regular intervals. Since DSOs have closer contact to their respective customers, they are able to asses the transformation and demand side more realistically. In Germany, such a process has been set up with the gas network area transformation plan (GTP). Furthermore the planning of new plants (i.e. cogeneration or by means of creating plants for a capacity market) and respective infrastructure needs to be synchronized and amended by a cross-sectoral network development planning (TYNDP), but with a strong regional (DSO) component. Where applicable, as in Germany, a bottom-up planning approach via the "municipal heat planning" should also be taken into account.

7. **Should an intertemporal cost allocation mechanism be used for transmission networks, distribution networks or both?**

The inter-temporal cost allocation mechanism for hydrogen can be used for both system operation levels, taking into account national specificities, especially the number of DSOs/TSOs (i.e. in Germany 16 TSOs and around 700 DSOs compared to – for example – the Nordics with fewer gas consumption and fewer TSOs and DSOs) and the estimated costs for the building and/or repurposing of the respective infrastructure.
As for Germany, with a total length of more than 560,000 kilometers gas distribution network is tightly meshed and has been expanded throughout the entire country. While about 500 large customers are supplied directly via the transmission network, all other customers, including more than 1.6 million businesses and around 50 percent of all households (regional differences) and the vast majority of power plants are being supplied via the distribution network. As most of these customers will need hydrogen to reach their respective climate goals, transforming the German distribution network could significantly lower the national carbon footprint and optimize intersectoral efforts.
On the TSO level, Germany already has a cost-allocation-mechanism, which in principle and for reasons of planning security should not be affected / made impossible by ACERs recommendations, whereas the regulatory framework for DSOs is still to be determined and there is also a high necessity to transform the German distribution network. The inter-temporal cost allocation mechanism for hydrogen could be one adequate mechanism to also support the hydrogen transformation for German DSOs. As its implementation will probably be challenging due to the large number of DSOs involved, additional instruments are needed in order for the mechanism to be successful (see answer to question 9). When designing such an instrument, the grid operators on the distribution level should only be liable for the risks in their respective grid area – amended by state support.
Since Article 5(6) of the Gas-Regulation stipulates that ACER shall issue recommendations towards a temporal-cost-allocation mechanism but may issue recommendations on financial transfers (Article 5 (4)), Thüga suggests that ACER should timely do so, in order to facilitate the financial transfer as another preferred instrument for financing the scale-up of hydrogen distribution networks, given its greater practical feasibility in implementation – at least in some Member States. On this matter, Thüga preemptively notes that:

- The regulatory authority must determine that financing hydrogen distribution networks solely through hydrogen network tariffs is not viable. This applies in cases where network tariffs would be prohibitively high (cf. Recital 10). Linked to this consideration is the obligation for Member States to create investment incentives for market participants by ensuring the possibility of cost recovery. According to the definition of "network user" (Article 2(60) of Directive EU 2024/1788), potential customers are also included. In the end this leads to the conclusion that financial transfers are permissible even if no customers are yet connected to the hydrogen network in question, including during the construction phase.

- The Member State should define the methodology for the permissible financial transfer within its national legal framework. One possible approach could be a dedicated component within the natural gas network tariff of the respective network operator, or alternatively, a nationwide levy.

C) Intertemporal cost allocation network tariffs

8. What tariff levels can be considered affordable and competitive in the early stages of the hydrogen market development and what methodology can be used to calculate these levels?

Aligning with the tariff levels for the gas network of recent years appears to be appropriate. Initially, the pure procurement price for hydrogen will be higher than it is currently for natural gas. To financially relieve hydrogen customers, excessive charges should be discouraged. This will also encourage the entry of potential new customers into the hydrogen market. However, a long-term coupling to these tariffs should be avoided, as they are expected to increase significantly over an extended period. Additionally, uniform tariffs should be preferred.

9. What design elements of the intertemporal cost allocation mechanisms can facilitate recovering the full investment costs in view of the sector's uncertainties and the potential absence of long-term commitments?

On the DSO level, the instrument can be one adequate mechanism. Because of the variety of DSOs and their ownership structure it is essential that the liability of each entity must be strictly limited to the own network area; liability for other networks / operators must be excluded.
Revenue gaps could and should be covered by public loans or guarantees with low interest rates and long amortization periods, minimizing risks for investors. Creating low risks, predictability and stability in the market should be at the center of the chosen strategy.
We also suggest, that a combination of the two instruments foreseen by the regulation (intertemporal cost allocation mechanism and financial transfers) should be made possible in the beginning. This would reduce the sums that have to be covered by the temporal stretching.

10. How should the risk of potential cost overruns for infrastructure developed under intertemporal cost allocation mechanisms be dealt with and who should bear this risk (e.g. hydrogen network operators, users of the hydrogen network, state/governments)?

The distribution of risk among the three stakeholders must be clearly delineated. The greatest risk should be borne by the state, as it sets the energy policy direction and establishes the framework conditions for the hydrogen market. Binding goals and their consistent implementation are crucial to ensure that end consumers and suppliers are not left with stranded investments due to potential shifts in political priorities or failure to meet

predefined objectives.
Following this, the customers of the hydrogen network should bear the next level of risk. These customers need hydrogen and must determine the necessary capacities, which allows for better planning regarding hydrogen production, importation, and network expansion. The risk for customers lies in the possibility that the forecasted demand may significantly exceed the actual required amount. However, this risk cannot be transferred to other stakeholders.
Finally, hydrogen network operators should bear the least risk, provided they fulfill their responsibilities in guaranteeing the transport of hydrogen. Without a clear political mandate to promote hydrogen and without customers who require hydrogen, network operators will not undertake the conversion of the existing gas network or the construction of a new hydrogen network.

D) Cross border elements

11. What are the relevant cross-border impacts to consider when designing intertemporal cost allocation mechanisms?

Since DSOs are all-in-all not involved in cross-border issues, Thüga keeps its responses in Section D limited on a need to have basis.
Most practical on this issue would seem that net tariffs at the receiving side of the boarder (not by itself affected from a intertemporal cost allocation mechanism) can – under control of the national regulator –negotiate tariffs for the time of the duration of the cost-mechanism.

12. Should intertemporal cost allocation mechanisms be harmonised across the EU? If yes, which elements of the intertemporal cost allocation mechanisms should be harmonised (e.g. assessment of needs, tariff structures, duration)?

No. This would increase complexity and would therefore contribute to hindering the uptake of hydrogen even more. Instead of a "perfect solution" (only) on the drawing board, an incremental approach is needed.

13. Are locational signals (tariffs differentiated depending on the location in the network) relevant for the development of the hydrogen market?

Although this could be the case, especially during the ramp-up phase, the overall system should be kept as simple as possible.

14. What negative impacts on cross-border trade and market integration can result from the application of national intertemporal cost allocation mechanisms?

(See preliminary remarks on question 11)

15. What type of coordination at EU level is necessary to enable cross-border trade and market integration when using intertemporal cost allocation mechanisms?

(See preliminary remarks on question 11)

16. What are the key elements that should be considered when using intertemporal cost allocation mechanisms for cross-border infrastructure projects?

(See preliminary remarks on question 11)

E) Final Questions

17. Which of the following elements of an intertemporal cost allocation mechanism are most important (select in order of importance, from high to low):

- Other:
  The success of an intertemporal cost allocation mechanism stands and falls with the degree of the deductible the TSOs / DSOs have to pay in case of failure. This directly affects risk-management and therefor the FID decision.
- Stability and predictability
- Simplicity and understandability
- Transparency and reproducibility
- Flexibility and adaptability (scalable tariffs to ensure cost recovery)
- Maintaining locational price signals (ensure cheaper supply routes are used first)

18. Please provide any other view relevant to the topic of the consultation

ACER should consult as soon as possible on the instrument of financial transfers according to Article 5 (6) second subparagraph.

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