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Regulatory perspective for the EU hydrogen transport infrastructure

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The decarbonisation will build on various components, including more-integrated systems

Reduction in EU energy demand

- EU final energy demand is anticipated to drop by 40% by 2050, backed by efficiency achievements
- Specifically, REpowerEU targets a 50% gas demand drop by 2030, relative to 2019

Electrification of energy needs, reshaping in turn power systems' operation

- Power demand to grow double by 2040, chiefly backed by RES generation expansion
- Flexibility needs to double by 2030 as renewable rollout expands. Demand-response and storage solution will be core to keep the power system in balance

Deployment of renewable and low-carbon gas where electrification is not an option

- Hydrogen to cover parts of industrial and transportation needs (range, application related)

Deeper integration between sectors and energy trade across all markets

- An innovative and enabling regulatory framework facilitates that

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A comprehensive regulatory approach

- The Decarbonisation Package sets the **regulatory framework** for investments in hydrogen networks, both in terms of the decision-making process for **planning** new infrastructure, and in the options available for **allocating** infrastructure **costs** across users
- The **cost-allocation aspects** need to be complemented by a comprehensive approach to **risk management** related to the development of hydrogen infrastructure
- Two key challenges: **high unit costs** during the early market phases, and the **risk that future demand may not meet expectations** - potentially leaving parts of the infrastructure underutilised

COST ALLOCATION

How users pay for the use of the infrastructure

RISK MANAGEMENT

How to cover the costs that are not covered by the users of the infrastructure

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Approach to cost allocation

In energy networks, a proper cost allocation is key not only to achieve **cost-reflectivity** (which links to the question of fairness and equity in the amount paid by network users), but also to ensure **affordability**, and to provide **price signals** to achieve greater **system efficiency**

CLASSIC TARIFF METHODOLOGY

WITH IP TARIFFS

WITHOUT IP TARIFFS, FINANCIAL COMPENSATION

Article 7(8) Regulation gives the possibility to NRAs to charge no tariffs at IPs.
In this case, from 1 January 2033 H2 operators shall negotiate a system of financial compensation (Article 59(3) Directive)

MOVE COST RECOVERY IN TIME

INTER-TEMPORAL COST ALLOCATION

Member States may allow hydrogen network operators to spread cost recovery over time (Article 5(3) Regulation)

MOVE COST RECOVERY TO ≠ COUNTRY

CROSS-BORDER COST ALLOCATION (CBCA)

VIA TEN-E REGULATION

VIA DECARBONISATION PACKAGE

Article 51 Directive

MOVE COST RECOVERY TO ≠ SECTOR

CROSS-SECTORAL CROSS SUBSIDIES

Possibility to derogate from rule of not allowing financial transfers between regulated services that are separate (Article 5(4) Regulation)

PUBLIC FINANCING

Domestic points would be the ones directly contributing to cost recovery. In case a system of **financial compensation** would be designed, certain users in the neighbouring country would also contribute.

Intertemporal cost allocation has the effect of reducing/modifying hydrogen infrastructure tariffs in that Member State, including cross-border tariffs.

Tariffs would still be paid at **both cross-border and domestic points**, based on chosen cost allocation methodology. A **transfer of resources between countries**, as a function of the benefits the cross-border infrastructure would bring.

Users of other sectors (e.g. gas, electricity) bear a share of the cost. **Financial transfers** in one Member State have the only effect of reducing hydrogen infrastructure tariffs in that Member State, including cross-border tariffs.

Public resources (at Member state or EU level) can also be employed, provided they comply with **State aid rules**.

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Approach to risk allocation

The main challenge the hydrogen sector is facing in relation to infrastructure development is how **to manage the risk** that infrastructure costs are **not fully covered by tariffs** paid by network users.

In gas, tariffs are usually adjusted on a yearly basis, and the risk is fully borne by network users. (NC TAR for gas)

In hydrogen, the risk of misalignments is much higher because of the uncertainty of the evolution of hydrogen demand and challenges to forecast it. Consequently, the lag between the time when tariffs are estimated (and investments decided) and the time when they are applied exists.

DIFFERENCE BETWEEN REVENUES COMING FROM TARIFFS, AND COSTS

DUE TO A DIFFERENCE IN **REVENUES COMING FROM TARIFFS** COMPARED TO INITIALLY PROJECTED *(DIFFERENCE IN NETWORK UTILISATION)*	DUE TO A DIFFERENCE IN **COSTS** COMPARED TO INITIALLY PROJECTED *(E.G. DIFFERENCE IN COST INCURRED)*
DEMAND RISK	**COST RISK**

TO NETWORK USERS, BY MEANS OF TARIFF ADJUSTMENTS

- ALL TARIFFS ADJUSTED WITH SAME PROPORTION
- ONLY DOMESTIC TARIFFS ADJUSTED
- ALL TARIFFS ADJUSTED WITH DIFFERENT PROPORTIONS
- ONLY DOMESTIC TARIFFS IN BOTH COUTNRIES ARE ADJUSTED

TO NETWORK USERS, BY MEANS OF CBCA OR FINANCIAL COMPENSATION

TO LONG-TERM CAPACITY HOLDERS, BY MEANS OF LONG-TERM COMMITMENTS

Can be in the form of explicit procedures (such as the incremental capacity process), but also be associated with a regime of exemption from regulated TPA, where long-term commitments are usually negotiated on a bilateral basis

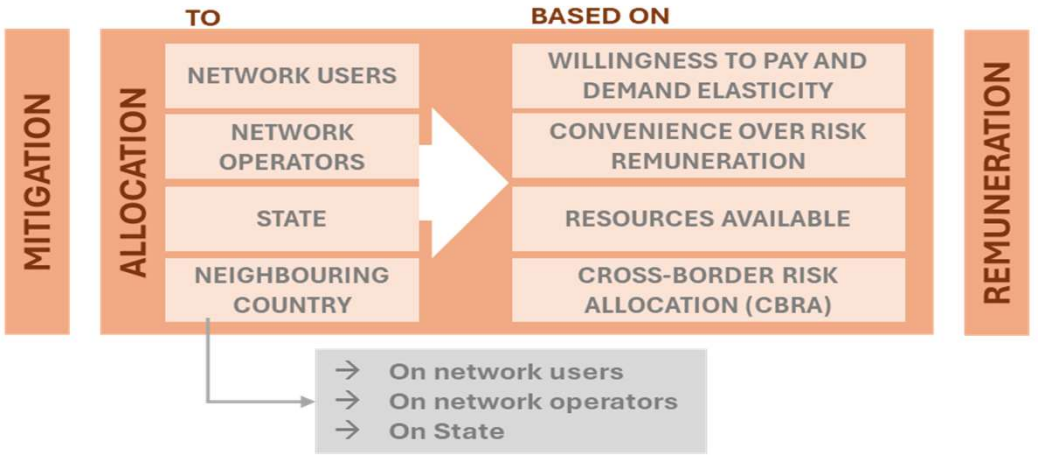
TO INFRASTRUCTURE OPERATORS

No specific tool to allocate a part of the risk to H2 infrastructure operators, but can be achieved either implicitly (negotiated TPA), or more explicitly in the context of specific risk management tools

TO THE STATE, BY MEANS OF GUARANTEES

Integration of risk management in the remuneration

The design of specific **risk management strategies** can help facilitate infrastructure investments in the hydrogen sector, allowing for greater transparency over the conditions, and the share of risk taken by each party



- Risk allocation choices can be part of the design of **inter-temporal cost allocation mechanisms**, or integrated into **CBCA agreements**
- Ultimately it is a matter of understanding how much costs hydrogen network users can bear, and deciding on who should bear the remaining costs in case the risk materialises

Thank you.
Any questions?

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ACER role and governance

- **Supporting the integration of energy markets in the EU** (by common rules at EU level). Primarily directed towards transmission system operators and power exchanges.
- **Contributing to efficient trans-European energy infrastructure**, ensuring alignment with EU priorities.
- Monitoring energy markets to ensure that they function well, **deterring market manipulation and abusive behaviour**.
- Where necessary, **coordinating cross-national regulatory action**.
- Governance: **Regulatory oversight is shared** with national regulators. **Decision-making** within ACER is collaborative and joint (formal decisions requiring 2/3 majority of national regulators). **Decentralised enforcement** at national level.
- Headquartered in Ljubljana, Slovenia. **Engaged across the EU**.