

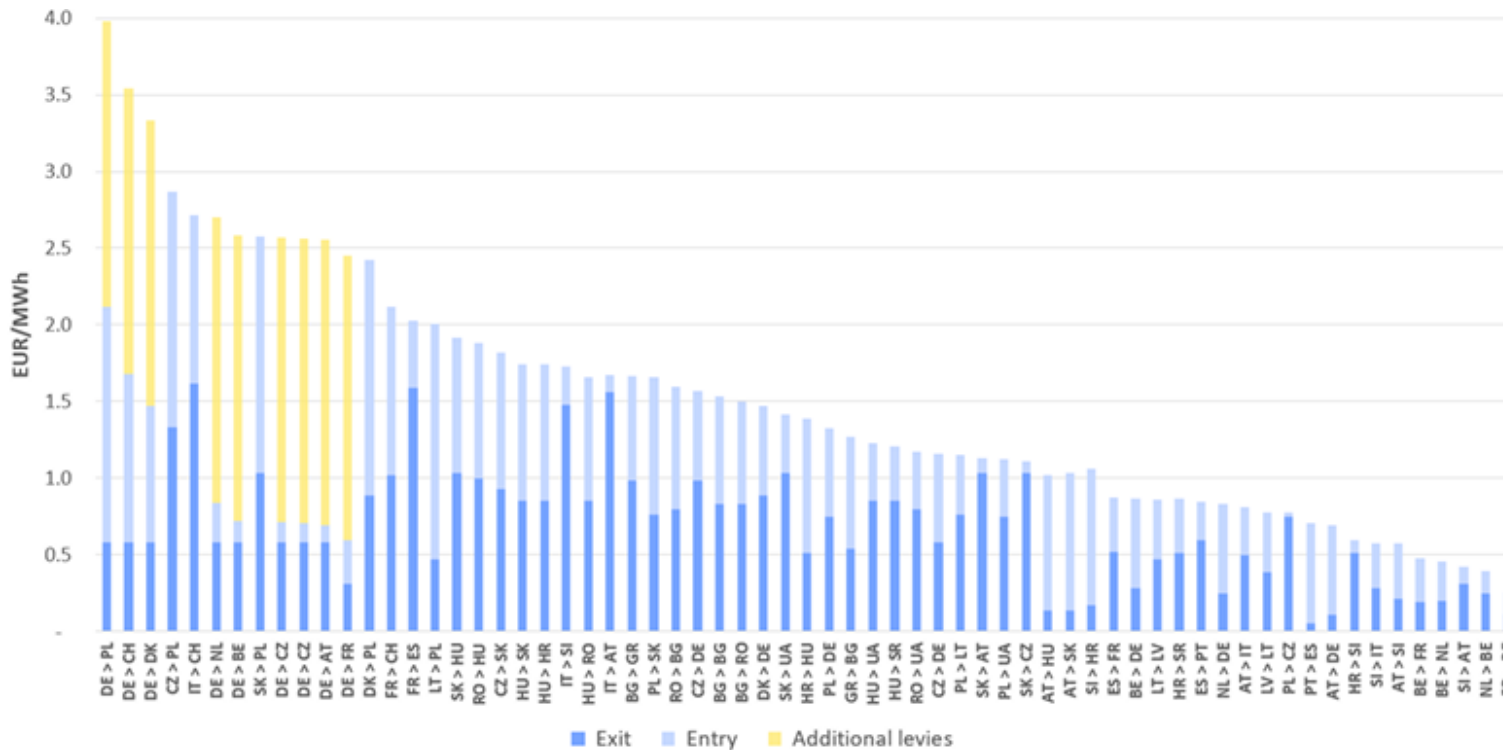
# **Inefficient interactions among Gas Trades and Gas Tariffs in the EU's market: does the new Gas Package spur towards market efficiency?**

8° AIEE Energy Symposium –The gas role in the transition: natural gas, hydrogen and other renewable gases

Padova, 29th November 2024 – Guido Pier Paolo Bortoni

# Transportation Tariffs in Europe

## Cross-border transportation tariffs on certain transit routes, 2024



- **Entry/exit costs vary significantly across different borders**, reflecting differences in regional gas markets, tariff policies, and infrastructure costs among countries
- **Spot price spreads** between most EU hub pairs generally remain below transportation tariffs, **even as tariffs are increasing**
- Introducing a **negative charge** could be considered as a response to the German **neutrality charge\***, but this might be technically complex.

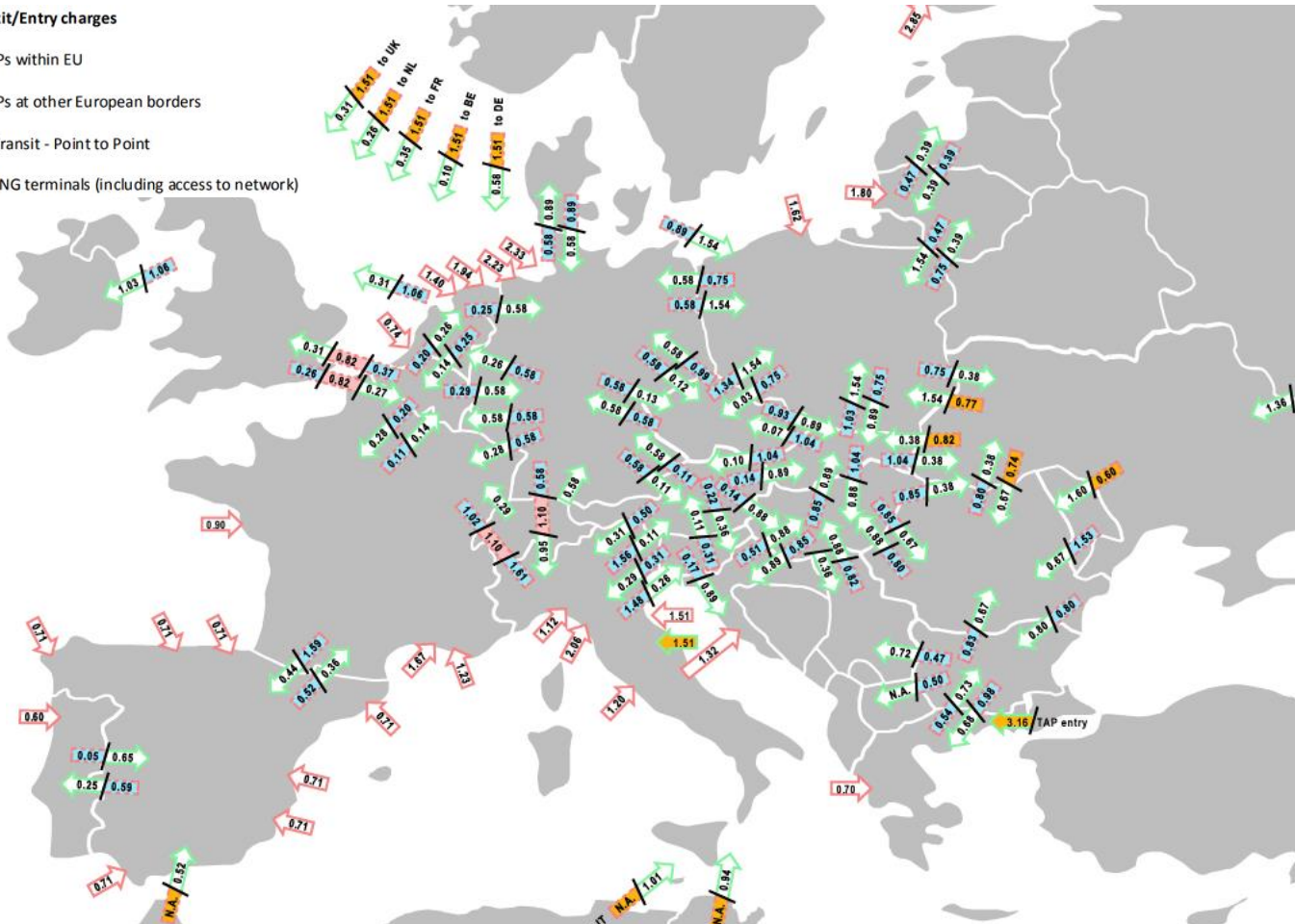
\*German neutrality charge increased to €2.50/MWh for H2 2024, up from €1.86/MWh in H1 2024. The German government introduced this levy to recover the cost of purchasing 50 TWh of uncovered spot gas in the summer of 2022 to fill storage sites for the winter. However, falling prices allowed THE market area operator to recover only about one-third of the spent amount through gas sales, leaving a loss of approximately €6.3 billion to be recovered from all gas exiting the German network.

# EU Transportation System Costs

## Cross-border transportation tariffs and LNG system access costs, 2024 (€/MWh)

April 2024 Exit/Entry charges

-  IPs within EU
-  IPs at other European borders
-  Transit - Point to Point
-  LNG terminals (including access to network)



- The cost levels of cross-border tariffs vary significantly between European borders
- Considering the numerous countries traversed, we can calculate, for indicative purposes, the transportation cost of 1 MWh of gas from the North Sea (Rotterdam Gate LNG Terminal) to Italy through the northern corridor (Passo Gries entry point - Transitgas)

### Import route 1 via DE-CH:

$$\text{Tariff}_{NL>IT}: \text{Tar} \cdot \text{Terminal LNG} + \text{Tar} \cdot \text{NL}>\text{DE} + \text{Tar} \cdot \text{DE}>\text{CH} + \text{Tar} \cdot \text{CH}>\text{IT} = \text{€ } 4,20$$

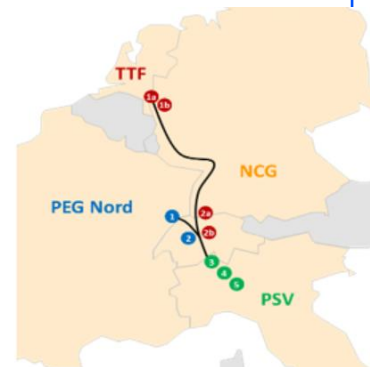
### Import route 2 via BE-FR-CH

$$\text{Tariff}_{NL>IT}: \text{Tar} \cdot \text{Terminal LNG} + \text{Tar} \cdot \text{NL}>\text{BE} + \text{Tar} \cdot \text{BE}>\text{FR} + \text{Tar} \cdot \text{FR}>\text{CH} + \text{Tar} \cdot \text{CH}>\text{IT} = \text{€ } 4,68$$

- In any case, price spread values generally remain below the tariff level.

# The *pancaking* effect

- So far cross-border gas trade, remains subject to network tariffs: not only at points where gas enters and exits the European network, but **also every time gas crosses an entry-exit boundary** (e.g., cross-border interconnection points).
- The *pancaking* effect refers to **the cumulative impact of such cross-border tariffs** on the supply price of natural gas or hydrogen as it crosses multiple borders from the EU network entry point to the delivery point
- For example, LNG delivered and regasified in Rotterdam may be sold to an Italian customer. The gas incurs:
  - An entry tariff into the Dutch network, then
  - Exit and entry tariffs transitioning from the Dutch to the German network, and so on, from the German network to the Swiss network, and finally, from the Swiss network to the Italian network.
- Thus, gas exchanges between market operators in different Member States are **taxed multiple times**, depending on the number of political/system borders crossed



- In the electricity sector, the **transit component** of transmission network tariffs was abolished in 2002. Since then, tariffs imposed on network users at entry and exit points give them the right to transmit electricity across the entire EU transmission network **without additional charges**, except those related to congestion
- A mechanism for **Inter-TSO Compensation (ITC)** was introduced in the electricity sector to reimburse TSOs hosting transit flows without taxing them. This aimed to avoid "pancaking," deemed cost-inefficient and unfairly penalizing cross-border trade

# Limitations of the Gas Target Model

- The GTM model is subject to **inefficiencies and competition distortions** that stem from its administrative framework, particularly tariff charges and the process of nominating capacity rights
- Although the GTM includes auctions for accessing transport capacities, with tariffs serving as reservation price floors, these auctions—under non-congested conditions—yield results **very close to the regulatory entry-exit tariffs**. This creates a dual challenge:
  - **Distorted Competitive Dynamics:** The administratively set tariff for accessing a Virtual Trading Point (VTP) neither reflects nor respects the competitive balance among different gas resources entering the same VTP. This can result in significant market distortions, artificially altering the economic merit order of supply sources in the EU gas market
  - **Capacity Booking Risks and Inefficiencies:** The requirement to book transport capacities (and pay tariffs) in advance introduces uncertainties about the actual utilization of these booked capacities. This uncertainty incentivizes market operators to minimize long-term bookings, instead favoring short-term capacity purchases at higher costs. This behavior can drive up commodity prices, activate higher-priced resources, and reduce overall market efficiency
- Since 2010, the **Gas Target Model (GTM)** has represented a significant step forward by innovating the infrastructure access system moving from a single infrastructure access to access through a virtual trading point (VTP)
- Access to the VTP implies that every transaction path is split into VTP-VTP corridors with tariff costs remunerating the entire transportation network
- Access tariffs are set by National Regulatory Authorities and must comply with the Tariff Network Code for greater harmonization at the national level

# Moving Beyond the Current Model

- The current cross-border gas tariff approach was questioned in 2018 by the **Quo Vadis** study, which proposed overcoming the pancaking effect of gas transportation network tariffs by **eliminating entry and exit fees at internal interconnection points**
- However, significant doubts remain about the elimination of cross-border tariffs, such as the need for different network operators to agree on revenue-sharing mechanisms, which can be complex
- The European Commission has also explored potential **alternatives to the existing model**, such as one based on **elastic corridors**: selecting specific VTP-VTP capacity corridors where market demand is more dynamic and introducing **auction-based capacity management** to establish the market value of transport capacities
- By removing fixed entry-exit tariffs in elastic corridors, this solution could reduce competitive distortions among various gas sources and technologies. The transition could also be gradual, maintaining GTM procedures in less elastic corridors

# The New Gas Package



## Tariff Discounts for Renewable and Low-Carbon Gases (Regulation Art. 18)

- **Entry/injection points from production facilities:**
  - **100% tariff discount for renewable gases**
  - **75% tariff discount for low-carbon gases**, subject to presenting a valid sustainability certificate, valid under Directive (EU) 2018/2001 for renewable gases while valid under Directive (EU) 2024/1788 for low-carbon gases
- **Entry/exit points for natural gas storage and transmission facilities:**
  - **100% discount** for renewable and low-carbon gases in the Member State where they are first injected
- **Interconnection points between Member States:** network users receive from the transmission system operator:
  - **100% discount** for renewable gases
  - **75% discount** for low-carbon gases, based on capacity tariffs at interconnection points
- **Exceptions:** Regulatory authorities may choose not to apply discounts or may establish lower discount rates if such discounts jeopardize the efficiency of the transmission system (e.g., cross-subsidies) or if they are deemed unnecessary due to progress in the uptake of renewable and low-carbon gases within the Member State or the existence of alternative support mechanisms

- The 2024 Gas Package is the fourth iteration of comprehensive sector legislation, following the so-called "**Third Energy Package**" of 2009, which governed the gas market for over a decade but did not include hydrogen regulations
- Published in the EU Official Journal on July 15, 2024, the package includes: an update to the *Regulation on internal markets for renewable gas, natural gas, and hydrogen* (2024/1789) and an update to the *Directive on common rules for internal markets for renewable gas, natural gas, and hydrogen* (2024/1788).
- Regarding cross-border transportation tariffs, in the Package **the current system for gas is confirmed** while **discounts are introduced for renewable gases** in natural gas networks