entsog

european network
of transmission system operators
for gas

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TYNDP 2018

Tariff assumptions for existing infrastructure and projects

Image Courtesy of Thyssengas

Considering infrastructure charges

CBAM update requested by stakeholders, ACER, and the EC

> For market-driven flow modelling and refined supply mixes

> ➔ Considering infrastructure cost in the modelling implies to consider **tariffs** for existing and future gas infrastructure
  - TSO charges
  - LSO charges
  - SSO charges

> Looking only at TSO charges would distort the assessment… **but there are stumbling blocks**
  - A comprehensive approach of all gas infrastructure is necessary
  - Tariff data collected under the assumption that 'tomorrow is as today'
  - TYNDP has a 20-year time horizon
  - Discrepancy between time horizons for TYNDP assessment and data availability for tariffs (a few years at best)

Need for a global approach to tariffs

Charges at Interconnection Points (IPs) and other points

> ***First***, inclusion of **IP tariffs will lead to market-oriented flow patterns**

- Consider IP tariffs between gas hubs
- Network user optimisation is focused on arbitrage opportunities by checking hub prices and IP tariffs (a cost for network users)
- Actual and up-to-date IP tariffs are key to market-oriented flows ➔ ***but which information source?***

> ***Second***, **LNG and storage tariffs** must be taken into account for a comprehensive picture

- Regasification terminals are essential in many countries to ensure gas supplies
- Storage facilities provide flexibility to TSOs and network users
- Therefore, skipping LSO and SSO tariffs is not an option and would only distort the TYNDP assessment (system and projects) ➔ ***but which information source?***

Data sources for existing infrastructure

Sources for existing infrastructure

Tariff data sources for IPs, LNG terminals and storages

- Since December 2017, **ENTSOG's Transparency Platform (TP)** is a key source for IP tariffs
  - Art. 31 (Form of publication) of the Tariff Network Code (TAR NC) sets out that ENTSOG's TP will provide a link to tariffs published by TSOs/NRAs
  - Tariff information at IPs are published by TSOs directly on the TP

- **Ongoing discussion with GLE and GSE** to access tariff data for LNG terminals and storages
  - Help from GLE and GSE is central to facilitate ENTSOG's tasks

ENTSOG‘s methodology for tariffs

ENTSOG's methodology for tariffs

Overview

- **For existing infrastructure (IPs, LNG terminals and storages)**
  - Find IP tariff components on ENTSOG's TP and/or TSO/NRA websites
  - Estimate flow costs at IPs
  - Consider tariffs at LNG/storages + TSO connection points

- **For infrastructure projects (IPs, LNG terminals and storages)**
  - Use simple proxies if possible, not project costs as a basis
  - Use alternative proxies when necessary
  - In PS-CBA, sensitivity analysis necessary for tariffs at new projects

ENTSOG's methodology for tariffs (1/5)

For existing infrastructure (1/2)

1. **Find IP tariff components** on ENTSOG's TP and/or TSO/NRA websites available from the link on ENTSOG's TP

- Consider **yearly firm tariffs** at each side of EU internal IPs (and 3rd country IPs if available) ➔ same as ACER's MMR
  - ➔ Yearly tariffs: assumption that yearly products are the most subscribed products, as shown by recent data from a majority of EU TSOs for ENTSOG's draft TAR NC monitoring report

- Get capacity and commodity components
- Tariffs valid at 1 January 2018
- Apply unit conversions (exchange rates at 1 January 2018, GCV, capacity/commodity units)
- Data is then converted to a 1 GWh/d flow
- Cross-check with ACER's MMR data

Tariff Period	Point Name	Direction	Operator	Capacity type	Product Type	Applicable tariff in common unit [value]	Applicable tariff in common unit [unit]	Start time of validity	End ti of vali
Tariff Perio	Point Name	Direction	Operato	f	year	Applicable	Applicable	Start time	End tin
01/01/2017 06:00 01/01/2021 06:00	Oberkappel	entry	Gas Connect Austria	Firm	Yearly	0.00356164	Euro/ (kWh/h)/d	01/01/2017 06:00	01/01/2 06:0
01/01/2017 06:00 01/01/2021 06:00	Überackern ABG (AT) / Überackern (DE)	exit	Gas Connect Austria	Firm	Yearly	0.00942500	Euro/ (kWh/h)/d	01/01/2017 06:00	01/01/2 06:0
01/01/2017 06:00 01/01/2021 06:00	Oberkappel	exit	Gas Connect Austria	Firm	Yearly	0.00942500	Euro/ (kWh/h)/d	01/01/2017 06:00	01/01/2 06:0

ENTSOG's methodology for tariffs (2/5)

For existing infrastructure (2/2)

2. **Estimate flow costs** first at each side of the border, **then at the IP**

- **Load factor:** an assumption on the usage profile of the capacity. Assumed: **LF = 100%** ➔ same as ACER MMR:

$$Load\ factor = \frac{Average\ flow}{Peak\ flow}$$

E.g. when the entire IP charge is expressed in volume units (e.g. Bulgaria BGN/1,000 m³), and also for the tariff commodity component that several TSOs apply, the assumption made is that the volume equivalent to the simulated energy content (i.e. 365 GWh/year) is flown constantly along the yearly period. This would equal to a capacity load factor of 100%. This supposition leads to an estimation of cross-

- Focus on hub borders by weighting tariffs at each border side with technical capacity
- Tariffs are first fully 'commoditised' into costs per flow unit, in EUR/(GWh/d)/y at each side of border
- Then, conversion to EUR/(GWh/d)/d by dividing by 365 and using the assumed LF of 100%, with peak flow equal to booked capacity

PL to CZ	POLAND	CZECH REPUBLIC	Cieszyn/Cesky Tesin GazSystem		Weight 100%
PL to DE_GPL	POLAND	GERMANY_GPL	Mallnow TGPS Europol Gaz		Weight 100%
PL to UA	POLAND	UKRAINE	Hermanovicze GazSystem		Weight 100%
PT to ES	PORTUGAL	SPAIN	VIP IBERICO REN		Weight 100%
RO to BG	ROMANIA	BULGARIA	Negru Voda I / II Transgaz		Weight 100%

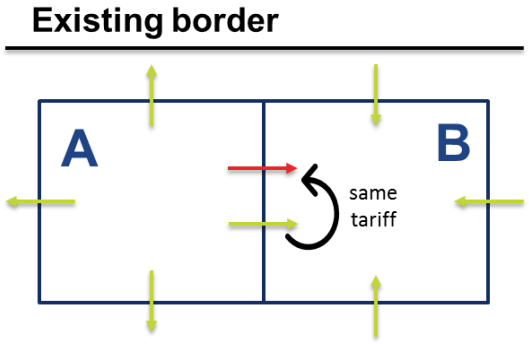
➔ **Finally,** add up the entry and exit sides to get flow costs at existing IPs

ENTSOG's methodology for tariffs (4/5)

For infrastructure projects (1/2)

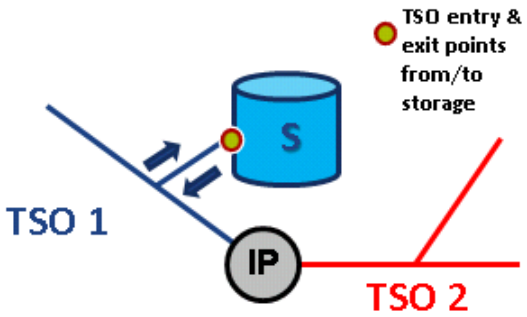
Any calculation of tariffs based on announced project costs would be influenced by too many possible parameters (f-factor from CAM NC, CBCA analysis, CEF, tariff methodologies…) ➔ therefore, **an harmonised methodology using proxies** is better

➔ Start with **a simple proxy for tariffs at IPs, storage points and LNG points if possible**

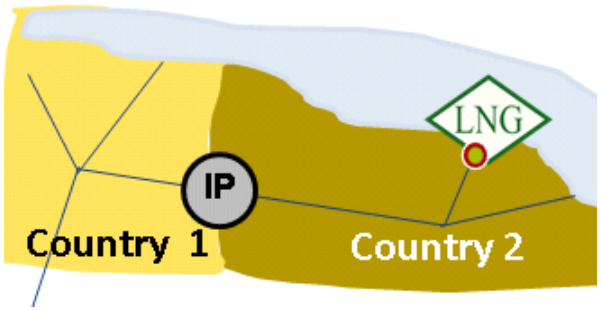


same entry/exit tariff of the existing IP

IPs: 1. use average tariff of existing IPs in TSO systems if any



Storages: 1. use average tariff of existing storages in TSO systems if any + GSE for SSOs



LNG: 1. use average tariff of existing LNG terminals in TSO systems if any + GLE for LSOs

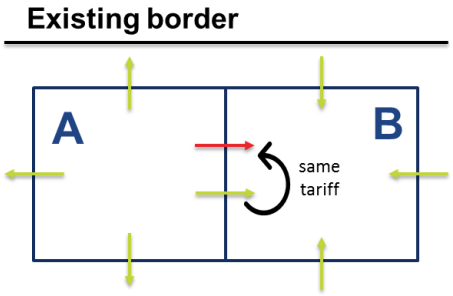
But in many cases, no existing equivalent infrastructure ➔ need for **refined proxies**

ENTSOG's methodology for tariffs (5/5)

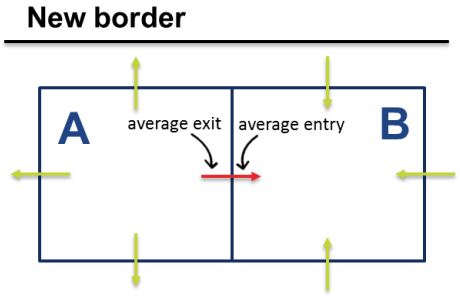
For infrastructure projects (2/2)

> Setting tariffs for new projects is a complex process: outcome is difficult to anticipate
  - For CBA, **level-playing field** assessment requires a standard methodology
  - The modelled tariff will impact on the 'over whole year, use of the project

> In case of new interconnection A->B



same entry/exit tariff of the existing IP



average of entry/exit tariffs at the other availble borders

> In case of new LNG/UGS facilities
  - if facility already existing in the country – average of the existing tariff (entry/exit)
  - if no facility existing in the country – average of all facilities in EU (entry/exit)

Proposal: in PS-CBAs, perform a sensitivity analysis on new projects tariffs (projects highly impacted by the tariff assumptions)

Thank You for Your Attention

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