

Tariff regulation of TSOs

Key parameters to discuss the need of international harmonisation

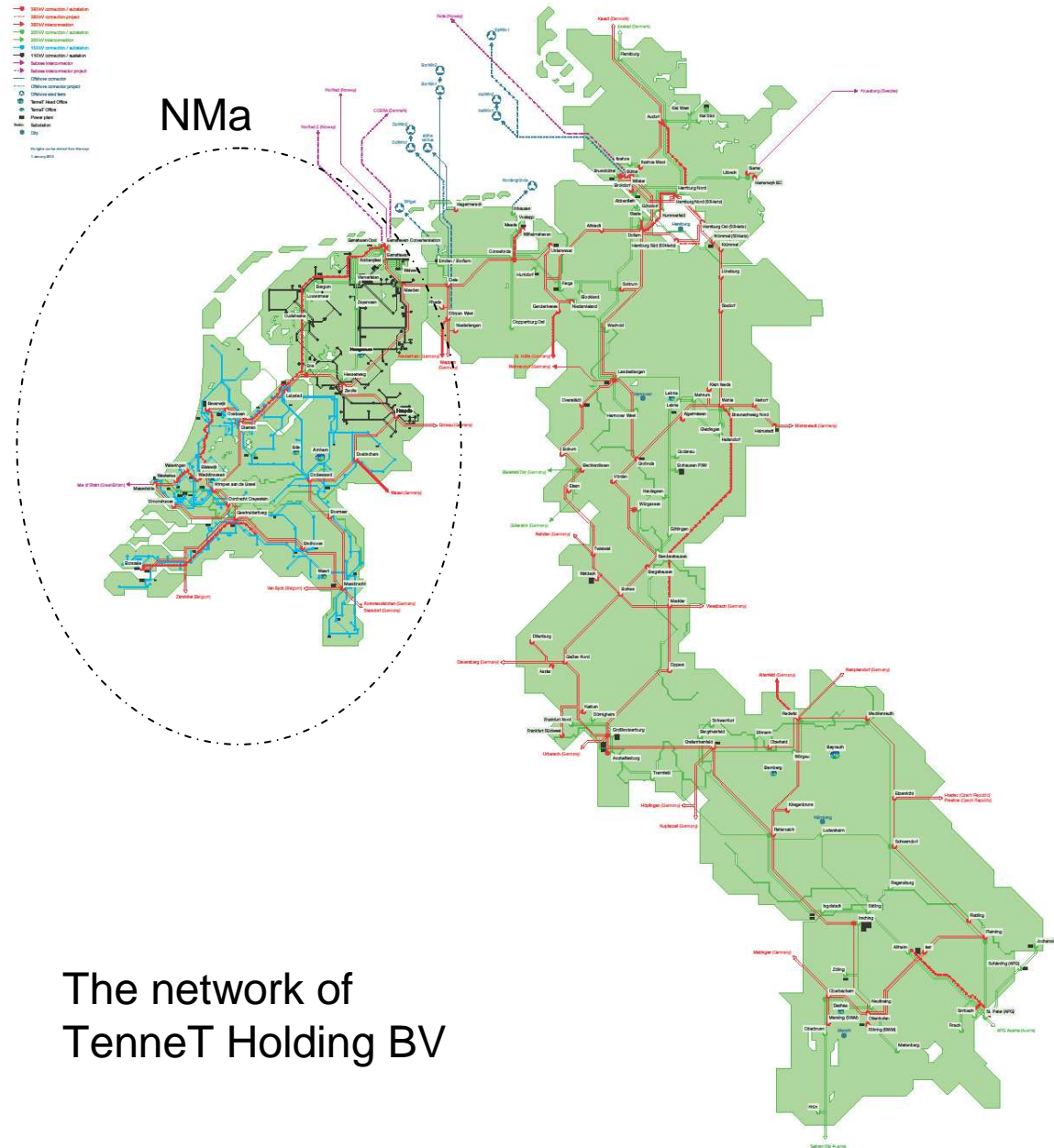
Machiel Mulder

Netherlands Competition Authority
University of Groningen
BAEE

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Tariff regulation is a key element of the regulation of TSOs, but other parts are also important, such as regulation of:

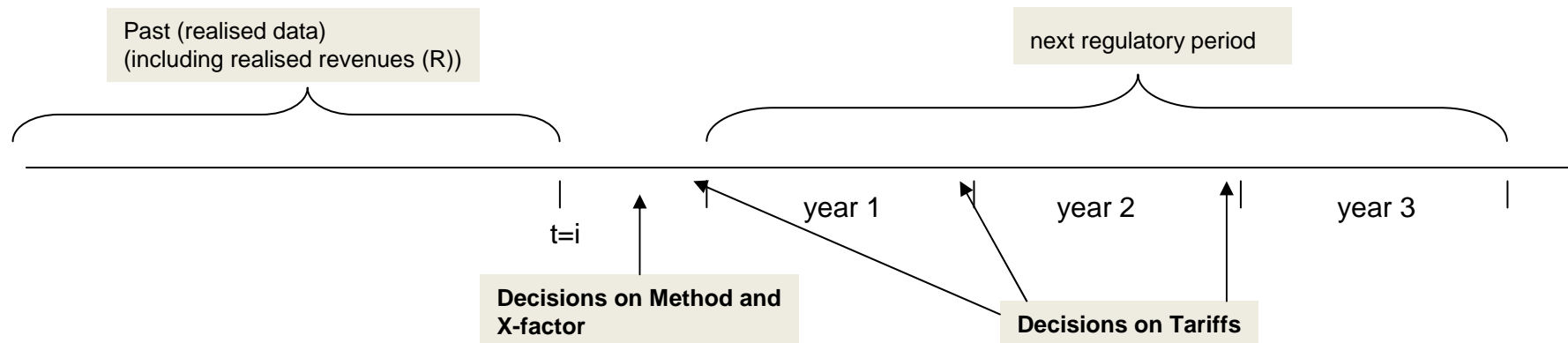
- quality of networks
- relationship with network users
- system-management (balancing)
- allocation of cross-border capacity



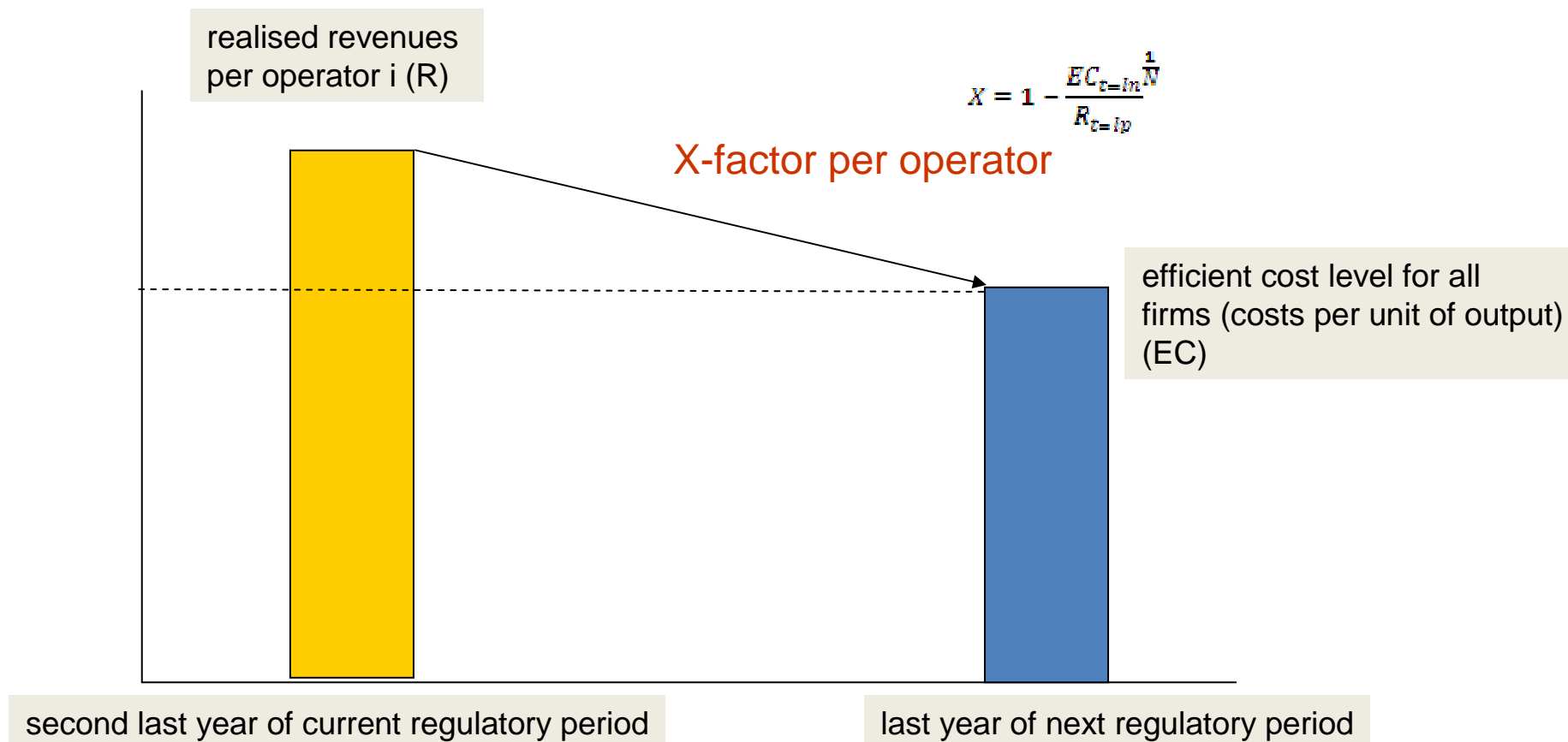
The network of TenneT Holding BV

Process of tariff regulation consists of 3 steps

1. **Decision on Method**
 - a. describes general principles for determining revenues
 - b. holds for **total regulatory period** (3 – 5 years)
2. **Decisions on X-factor**
 - a. determines the x-factor, i.e. factor by which the annual revenues will be reduced
 - b. is taken at the **beginning of the regulatory period**
3. **Decisions on Tariffs**
 1. determines the tariffs for all products of a network owner (*note: the NMa only approves the tariff proposals of the TSOs*)
 2. is taken just before **each year** of the regulatory period

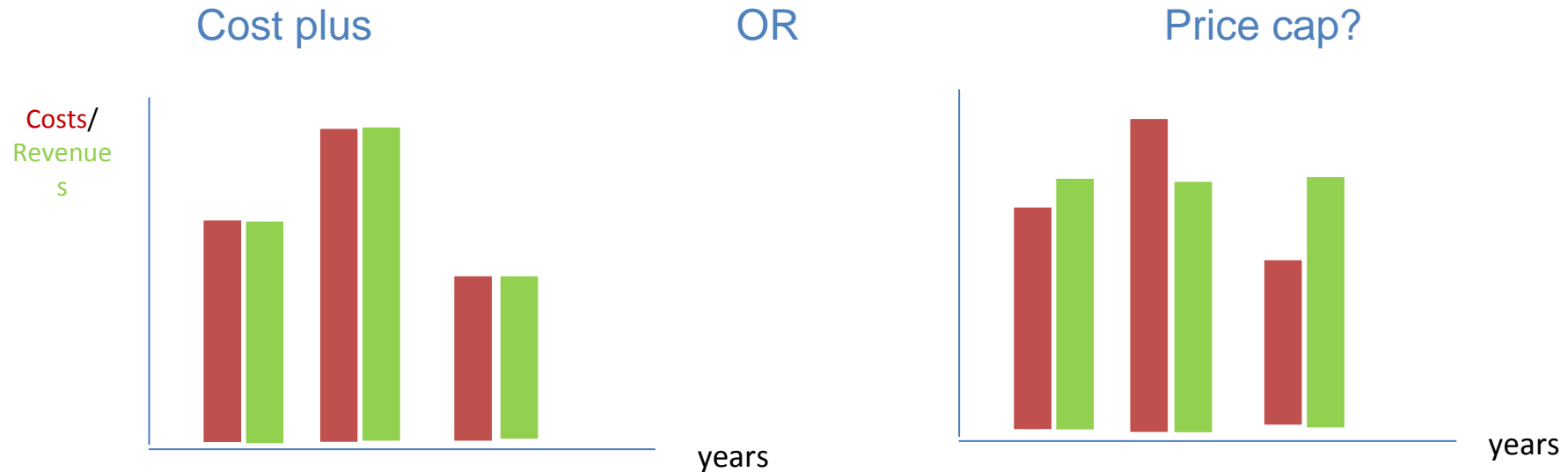


X-factor is the annual percentage change needed to take the current level of revenues per operator to the level of efficient costs in the last year of the next regulatory period



Note: regulation is directed at total **revenues** of network operators, not at **costs**

Key components of tariff regulation: Determination of total revenues



Which components affect the level of the price cap?

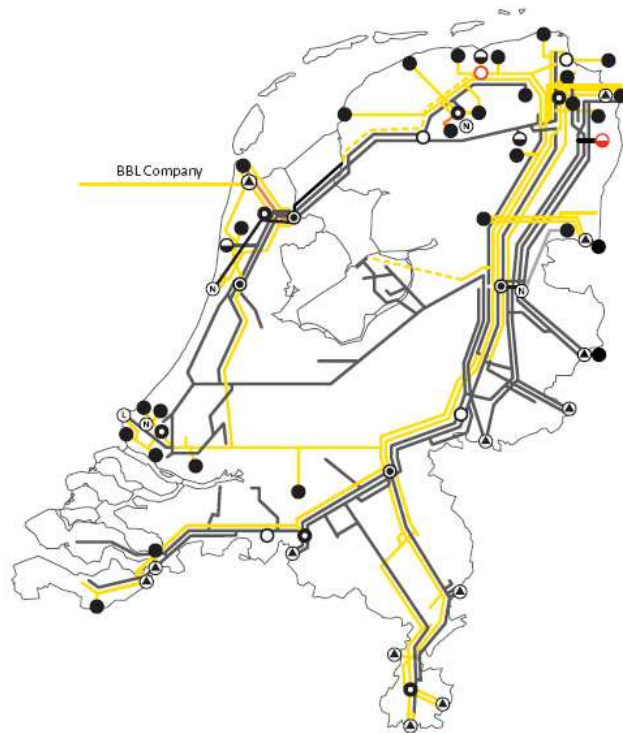
- Value of regulated asset based (**RAB**)
- WACC** (weighted average costs of capital)
- Efficiency assessment** of the total costs
- Treatment of **investments** (I)

Simple formula:

$$\text{Price Cap} = \text{efficiency score} * [\text{WACC} * (\text{RAB} + \text{I}) + \text{other costs}]$$

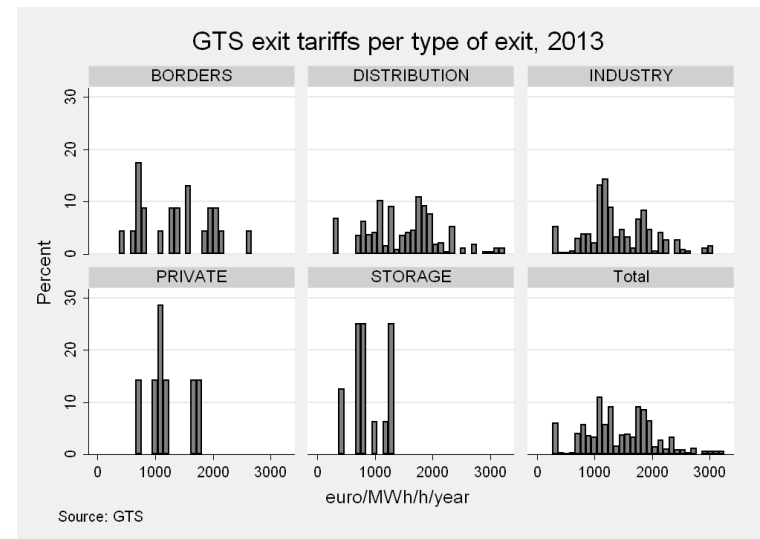
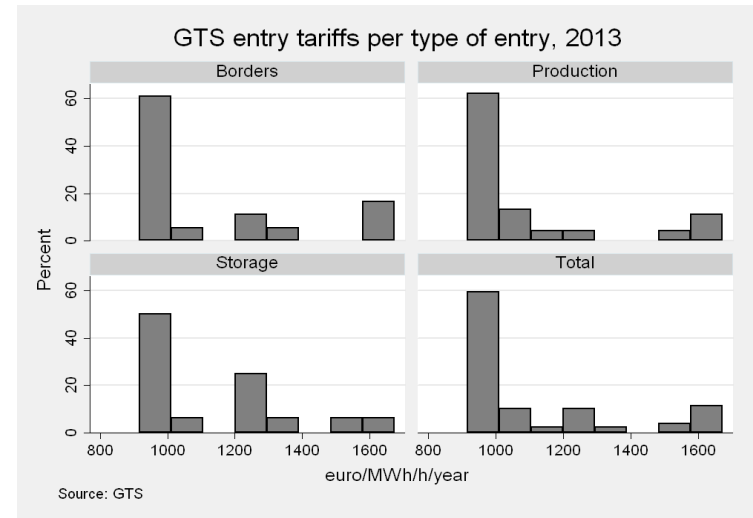
Key components of tariff regulation: **determination of tariffs**

Cost oriented tariffs OR freedom for the TSOs to choose prices in order to maximize profits?



GTS uses a mixture of many different tariffs

- pipelines Groningen-gas
- pipelines high-calorific gas
- pipelines low-calorific gas
- pipelines desulphurized gas
- pipelines nitrogen
- feeder station(s) [entry-points]
- ⊙ compressor and blending station
- compressor station
- blending station
- ⊖ underground gas storage
- ⊙ export station
- ⊙ LNG facility
- ⊙ nitrogen injection
- Planned extensions of the gas grid
- pipelines high-calorific gas
- compressor station
- installation underground gas storage



Differences in tariff regulation may affect decisions of TSOs as well as network users

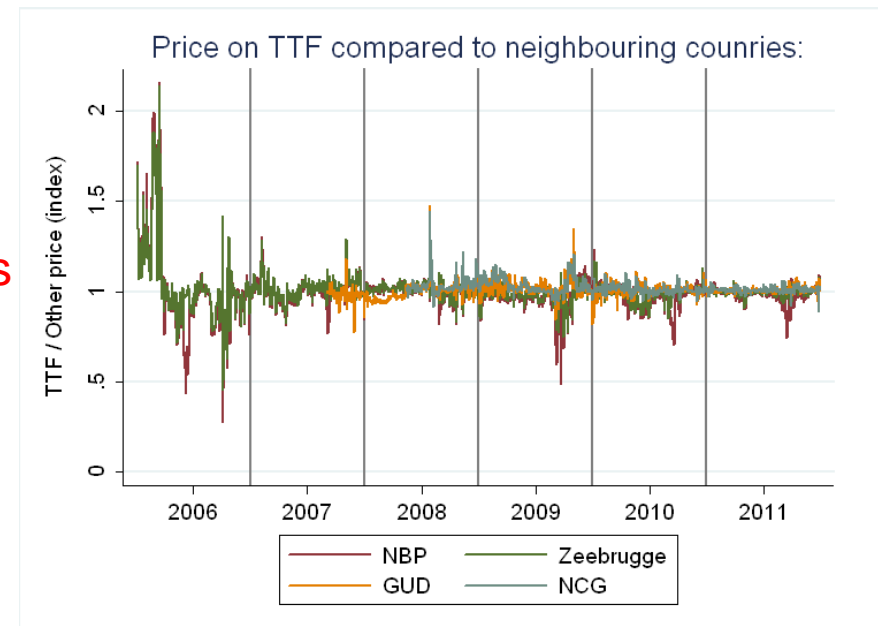
For TSOs:

- Differences in the way the **efficiency** is assessed might affect investment decisions
- Differences in the **WACC** do not necessarily mean that TSOs do not invest anymore (or less) in countries with a low WACC

A 'rational' firm invests in all countries where the WACC \geq 'reasonable' return, unless the firm faces constraints in e.g. available capital

For the network users:

- Differences in **network tariffs** affect the competitiveness of firms or even the locational decisions of firms
- Differences in **capacity products & definitions** may hamper international trade
- **Cross-border entry/exit tariffs** affect opportunities for international price arbitrage



Concluding

- Differences in tariff regulation between countries may affect
 - the **incentives** for TSOs and network users
 - the **efficiency** of international trade
- **Harmonisation of tariff regulation** contributes to further integrating national markets into a European market
- the issue is **which components** of the tariff regulation should be dealt with first