

Reference scenario building

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- Shall reflect that the third package has fully been implemented
 - Comment 1: a full implementation by 2020 is unrealistic
 - Comment 2: regional differences between implementation shall be reflected
 - Comment 3: we do not know what the implementation might bring it is too early to judge
- A starting point of best estimate shall be selected, sensitivities address the rest.

Difference between current status and reference shall be clear

Modelling can handle e.g. that:

- Currently (2016) spot trade is restricted on certain EU/EU borders. (e.g. RO-BG, BG-GR) In the 2020 reference no artificial regulatory barrier to trade will exist.
- Outlier tariffs of 2016 are cut back by 2020 (to e.g. regional average, EU average...)
- Regional regulatory differences: Current regulatory interventions like storage obligations are taken into account as of 2016 fact - and do not change in the 2020 to reflect on country specifics

3rd package	By 2020	EGMM
CAM, CMP	Implemented	Model works as CAM, CMP implemented
BAL	Implemented	Model can not handle – monthly modell
TAR	Implemented	Model input will reflect implementation
Interoperability		We do not consider technical issues like quality, odorization, etc.

- Current tariffs are 2016 fact (used for verification)
- By September 2017 we do a follow up: the published tariffs will be taken into account: e.g. UA, FR
- For the reference updated tariffs are used with extreme outliers cut (to be exactly defined how to do that)
 - Comment 1: absolute tariff amounts should anyhow further decrease once the amortisation of past investment is complete – all tariffs shall decrease by 2020...2030 – to be exactly defined how to do that
 - Comment 2: Decrease in demand and flow would increase TSO tariffs

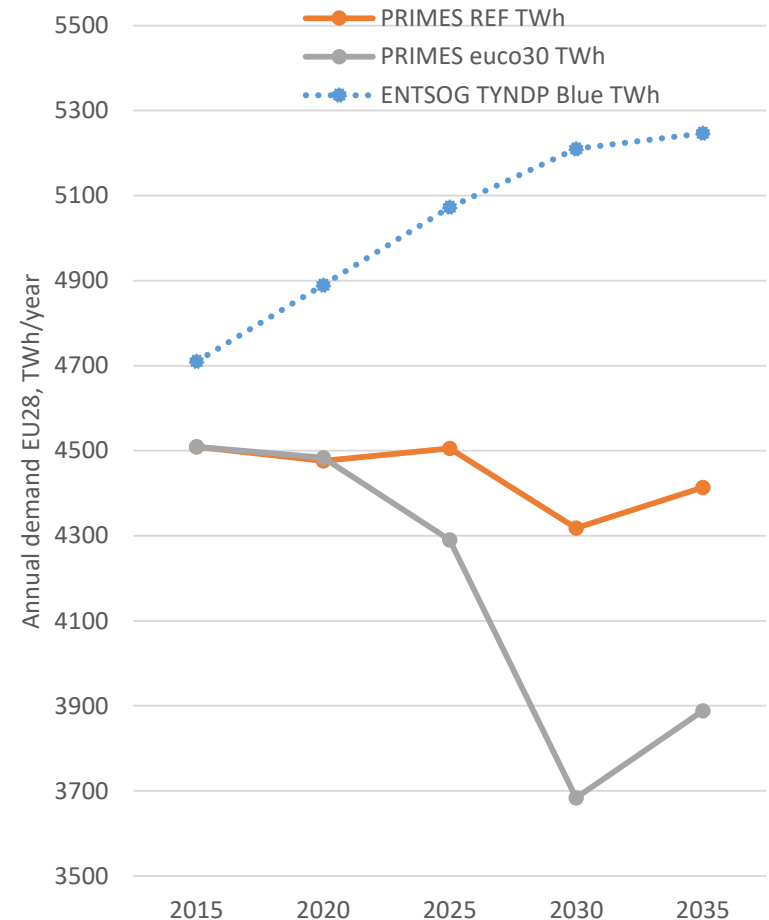
Infrastructure assumptions for the reference

- Existing + under construction (+ FID)
- Comments:
 - existing + all currently under construction (TAP, ...)
 - existing + under construction + FID + PCI advanced
 - existing + under construction + FID + all advanced

Taking unrealistic assumptions for the reference would jeopardize the credibility of the results...

Demand assumption

- Reference PRIMES
 - Demand stagnating around 4500 TWh/year
- EUACO30
 - Demand drops below 4000 TWh/year by 2030 to meet renewable targets
- Sensitivity – TYNDP blue transition scenario?



- Long-term contracts are re-contracted at 50% volume upon expiry
- Delivery point, price and flexibility remain unchanged upon re-contracting
- Pricing is partially oil-indexed
- NS2 commissioning changes the route of LTCs, bypassing the Ukraine

Modelling the scenarios

- Zero/marginal cost tariff on IPs
- Revenue neutrality for TSOs
- Missing revenue shall be recovered on either EU28 border entries (1) or EU28 domestic exits (2) or the combination of both (3)

	Entry	Exit
1	100%	0%
2	0%	100%
3	50%	50%

- ▶ How to put 100% on Entry?

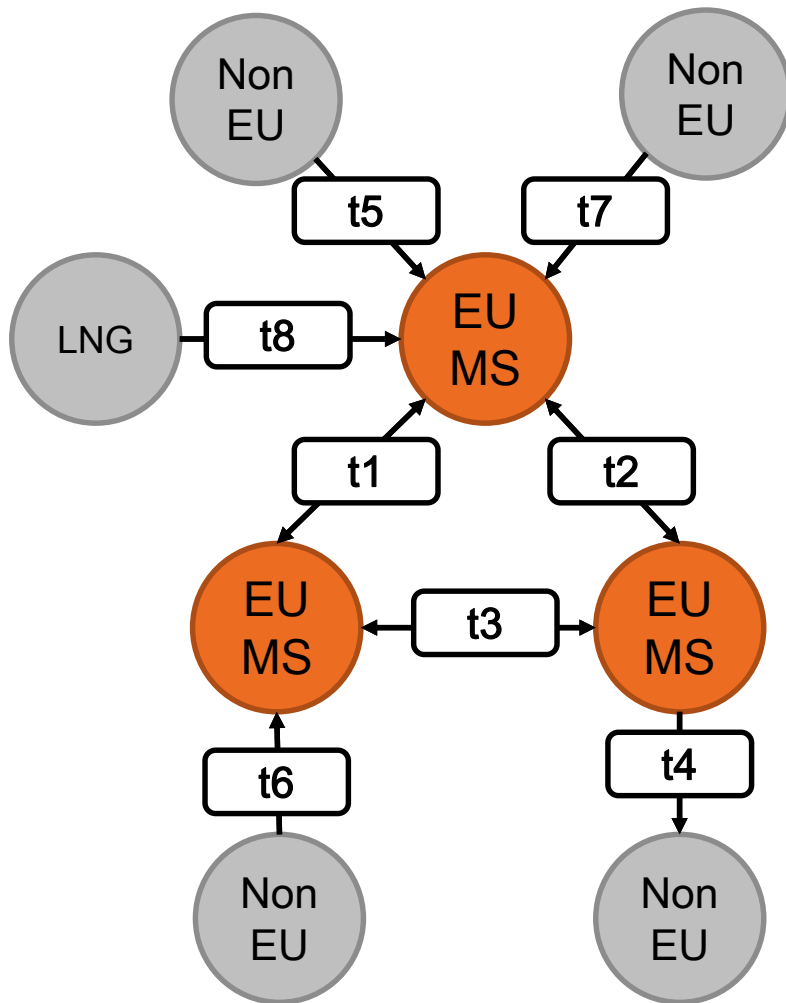
- A.) ~~All entries are equal~~
- B.) All entries are increased with an incremental (current entry tariff + uniform fee)

- No differentiation between LNG and pipeline

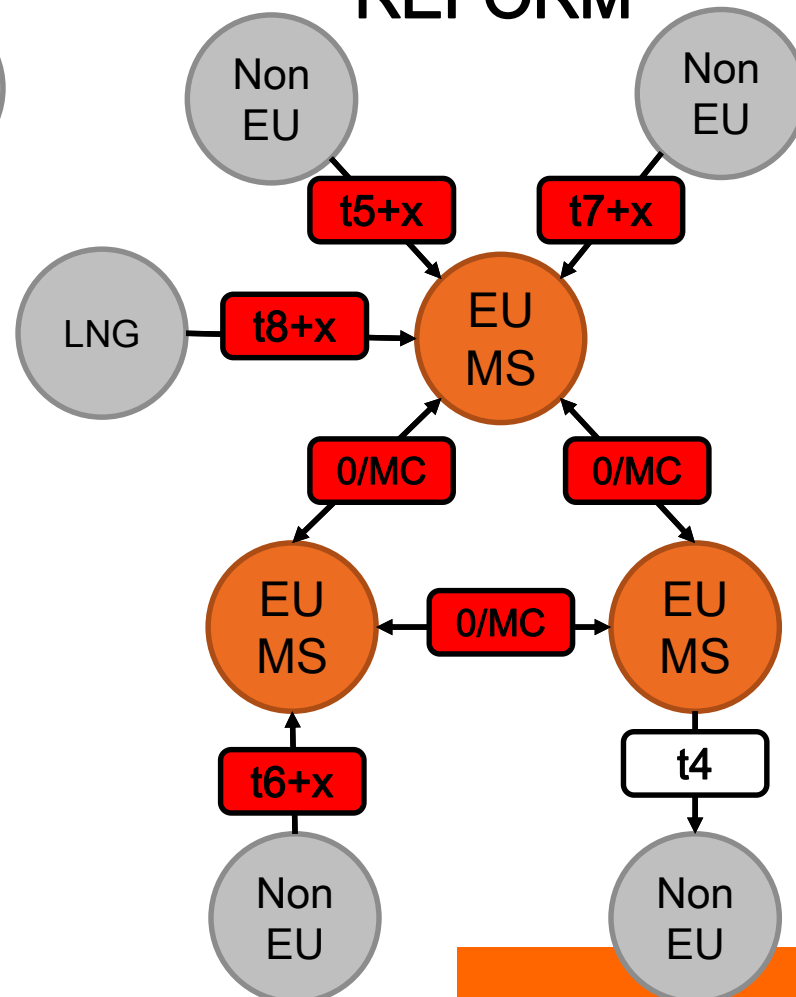
- ▶ Same principle applies when we put 50%/100% on exit (current exit + uniform fee)

Schematic representation of tariff reform scenario (1B)

REFERENCE



TARIFF REFORM



The purpose is to reduce the number of market zones in Europe.

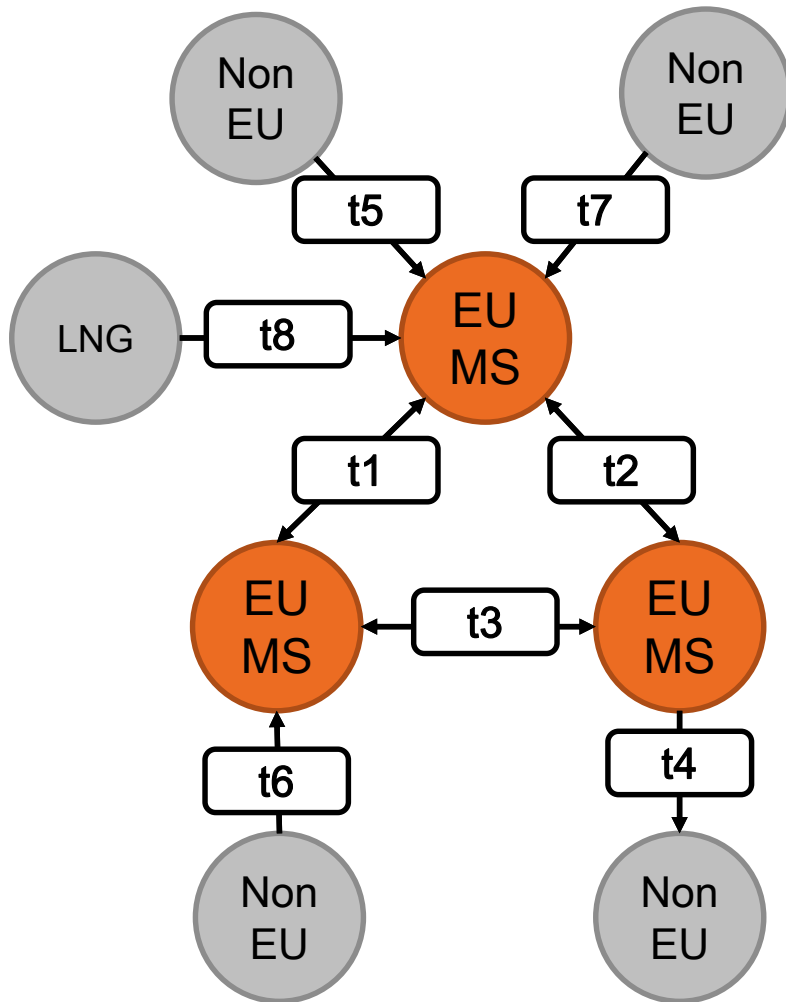
- No bottlenecks within the merged zone can remain. How to define these zones?
 - ▶ Bottlenecks on IPs are outputs of modelling
 - ▶ Need for internal system development are not considered by the model – TSO data is needed to arrive to costs
 - ▶ Analysis of regions one by one



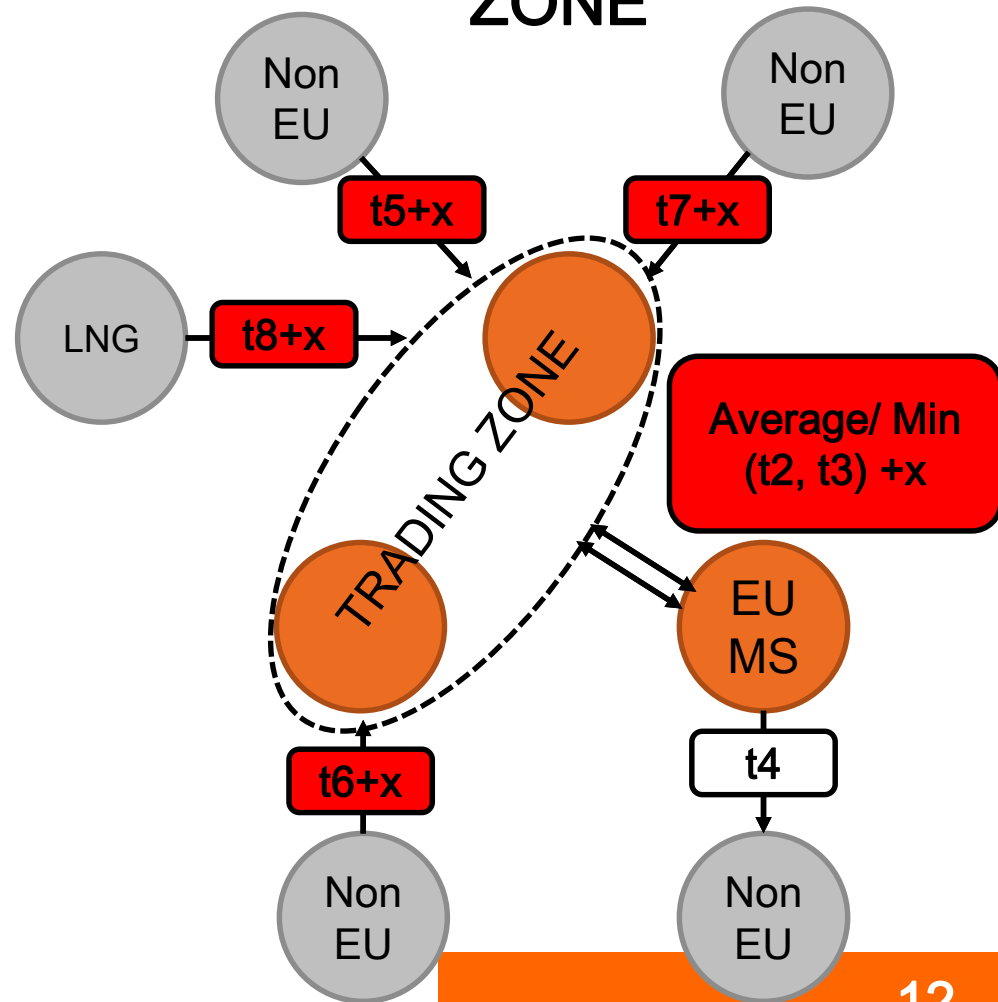
Figure 1: Proposed regional zones

Schematic representation of trading zone scenario

REFERENCE



TRADING ZONE

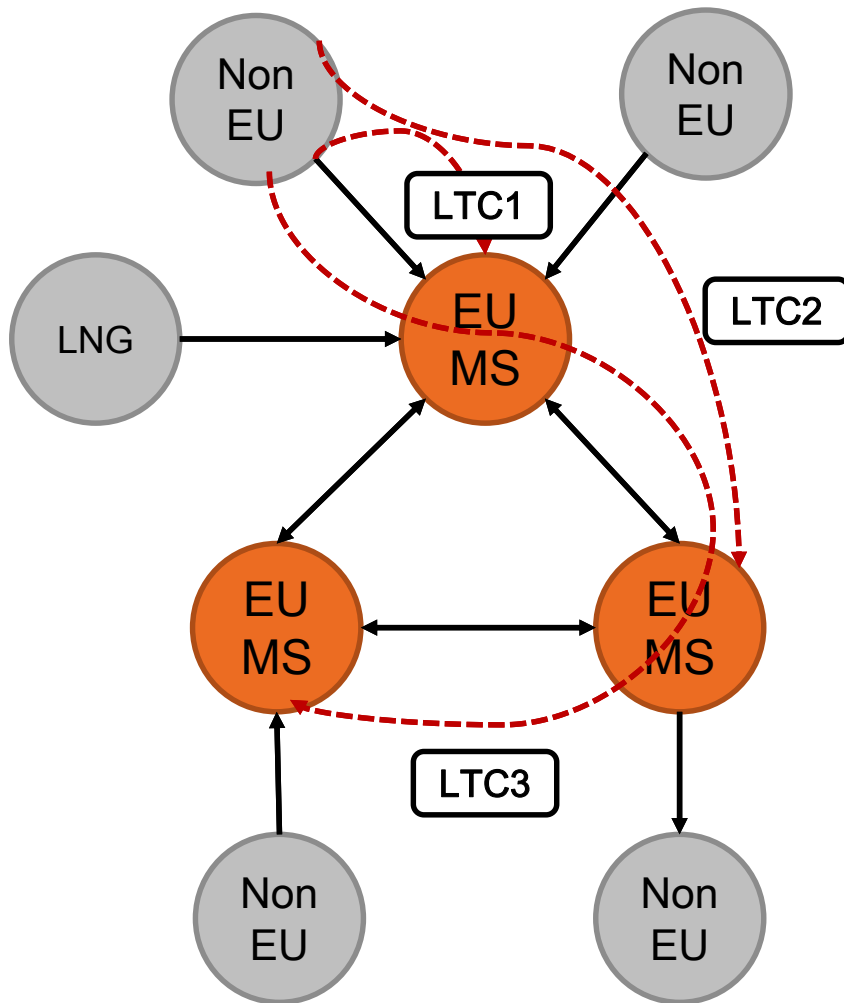


- The aim is to reduce the price gap between a liquid market and a connected less developed market. Tariff at $IP:=0$, auction if capacity gets congested.
- Possible to model, however the countries where this could be modelled needs to be defined.
- Harmonization of balancing is not modelled.

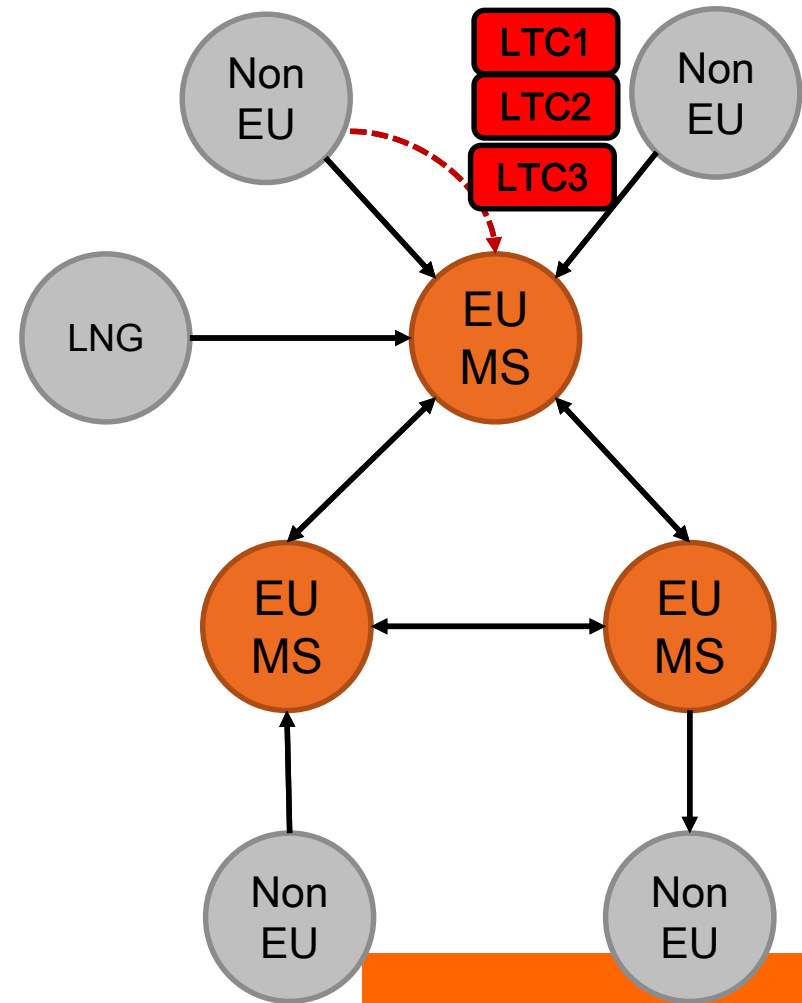
- Contract delivery points of gas arriving from Russia would be moved to the Member State border where the gas enters the EU
- Same contracted quantity is assumed as in the reference
- More efficient use of existing infrastructure is expected
- We assume that the wellhead prices of contracts are changed to reflect the difference in transportation fees between the new and the old delivery routes. As a result, if the gas found its way to its former target market, its border price would be the same as before.
- Possible from modelling point of view

Schematic representation of delivery point scenario

REFERENCE



DELIVERY POINT



- Supply shocks (low and high LNG supply to Europe)
- Demand shock (high demand)
- Brexit (where is the EU border?) is UK part of the EU welfare?
- Combination of demand and supply shocks (e.g. High demand and low LNG supply)

Thank you for your attention

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