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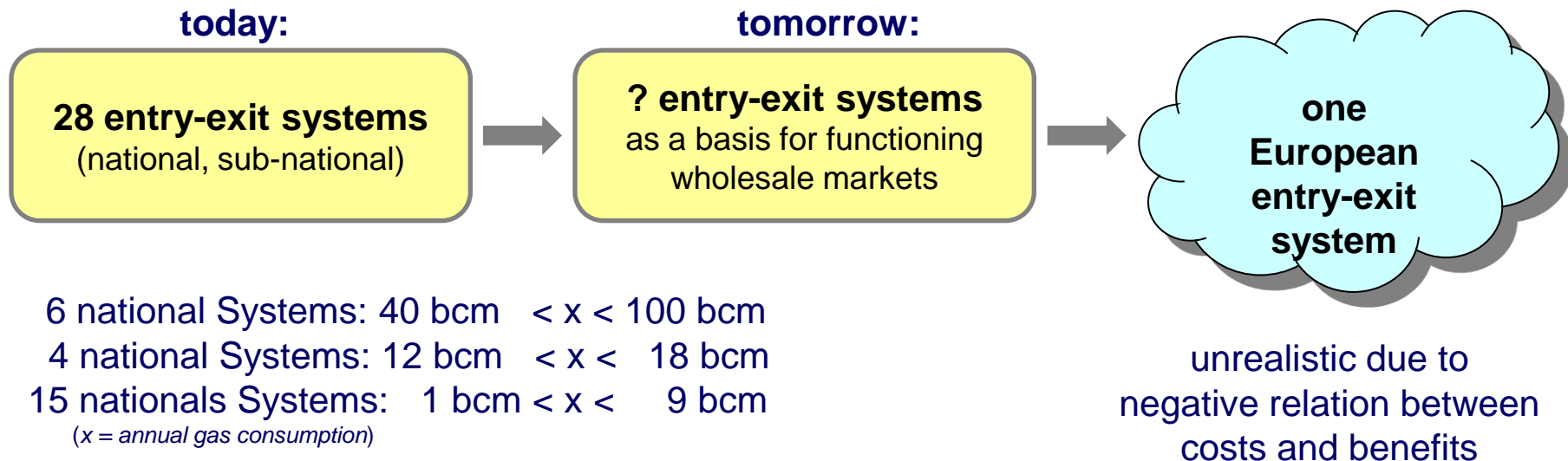
REKK workshop on regional energy market integration efforts

Cross-border Trading Region in CEE

Markus Krug, E-Control

Internal EU gas market

- A well-working internal EU gas market is characterized by tightly connected functioning wholesale markets

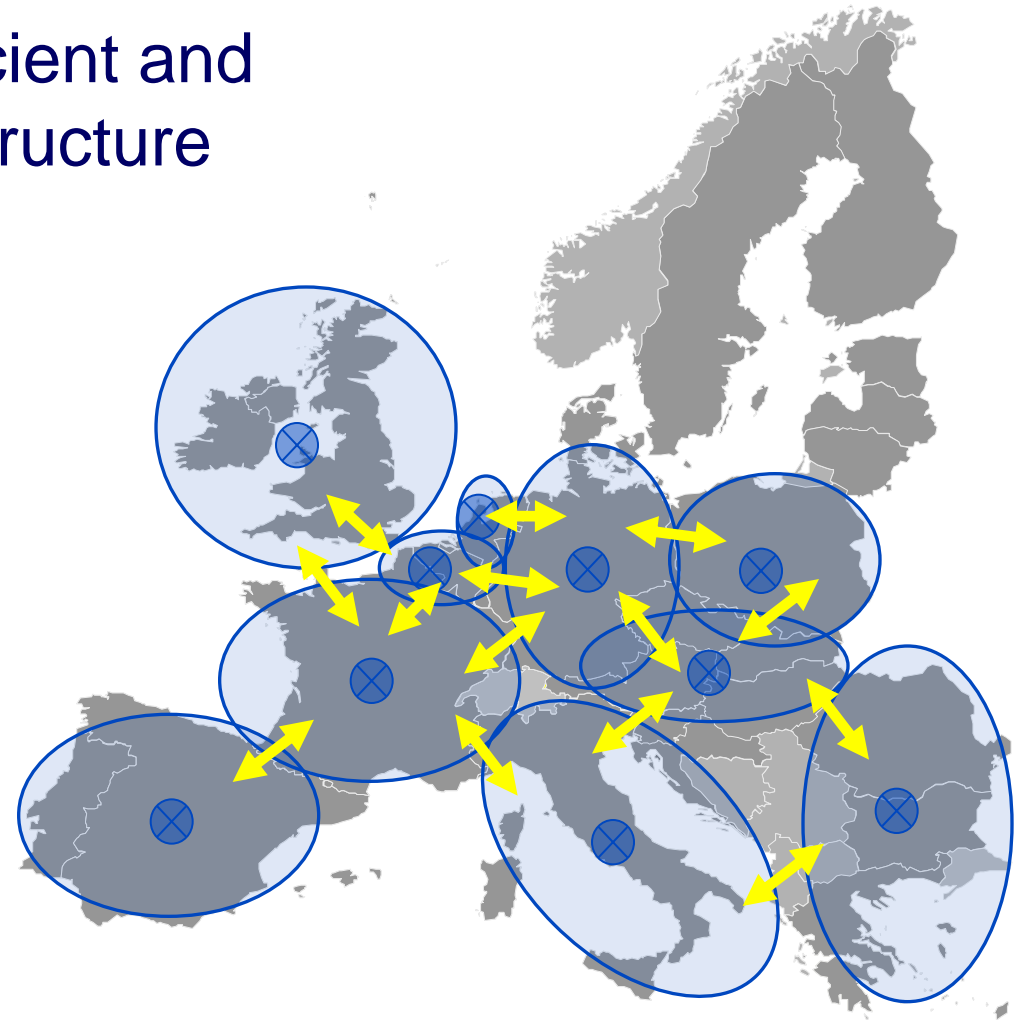
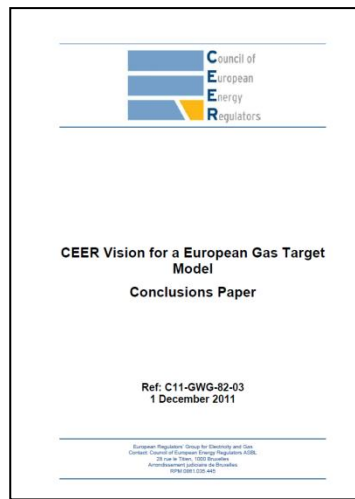


Vision for the EU Gas Target Model



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- Liquid hubs with sufficient and efficiently used infrastructure
- Functioning markets in all of Europe
- Ensure that gas flows to Europe



⊗ Hub

* Zones drawn for illustration. Size of zones will depend on CBA.

Macroeconomic effects of market integration calculated for CEE

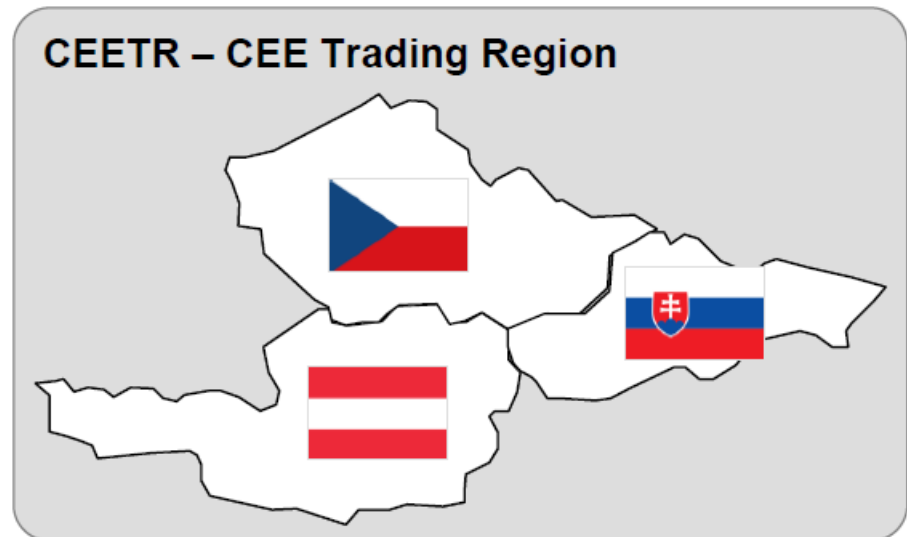
- Region CZ/SK/AT positive effects to be expected
- Expected social welfare gain (> € 15 Mio.) justifies establishment of an integrated market
- Capacities seem sufficient to allow for price convergence during most of the time
- Region could be expanded after promising experience has been gained

Case study for CEE



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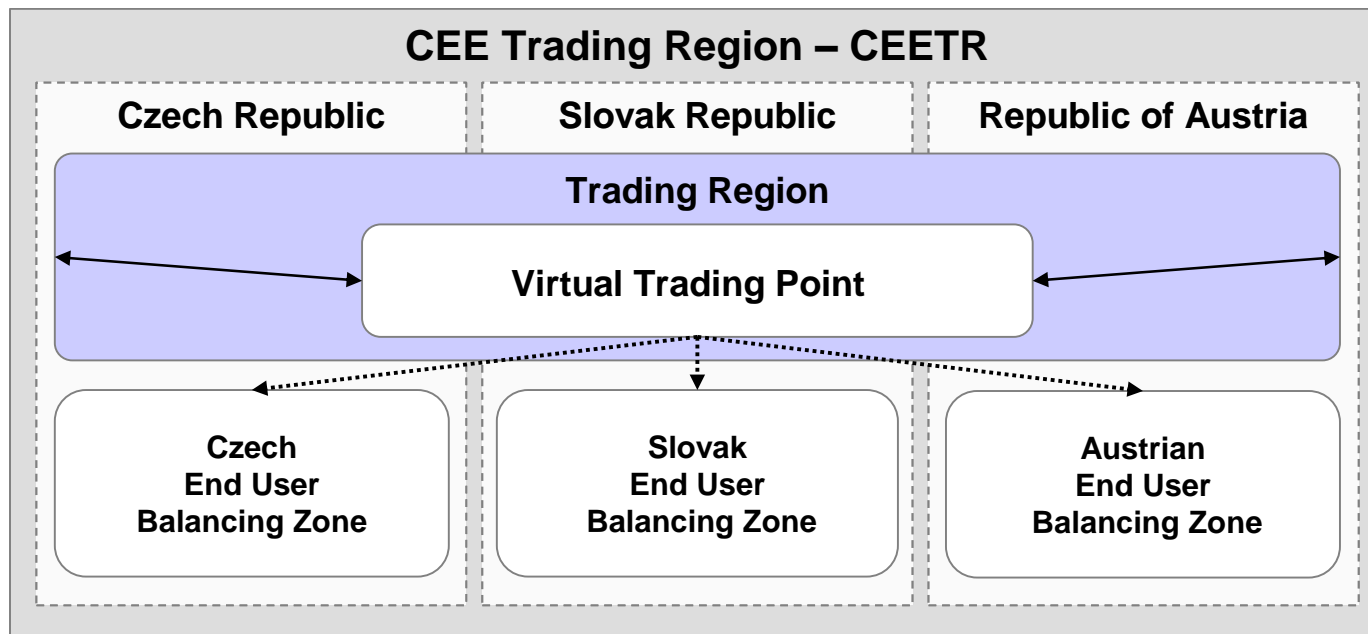
- CEE Trading Region (CEETR) pilot project to assess possible implementation steps of the GTM measures
- CEETR partners: eustream, NET4GAS, CEGH, E-Control consulting supported by Wagner, Elbling & Company



Basic structure of CEETR



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↔ Nominated transfer of gas into / out of the trading region (physical mainflow or counterflow transport)
⋯→ Nominated transfer of gas from the balancing system of the trading region to an end user balancing zone

- Structurally, CEETR is made up of the following components:
 - 1. One Trading Region
 - 2. One Virtual Trading Point
 - 3. Three End User Balancing Zones, one per participating country



Basic principles

- **Capacity model:** Definition of harmonized types of capacities being used and how the joint capacity model can be derived
- **Tariffs:** avoidance of CEETR-induced loss of tariff income for TSOs ensured by ITC mechanism
 - Plus: Avoidance of any losses in tariff income from abolition of current long-term contracts
- **Balancing:** distinction between CEETR and End User Balancing Zone
 - CEETR balancing: “Allocated as nominated” principle
 - Consistency with BAL NC to be assured
 - Market based balancing by procurement of system energy on CEETR VTP gas exchange
 - Balancing in End User Zone according to national rules

Status and next steps



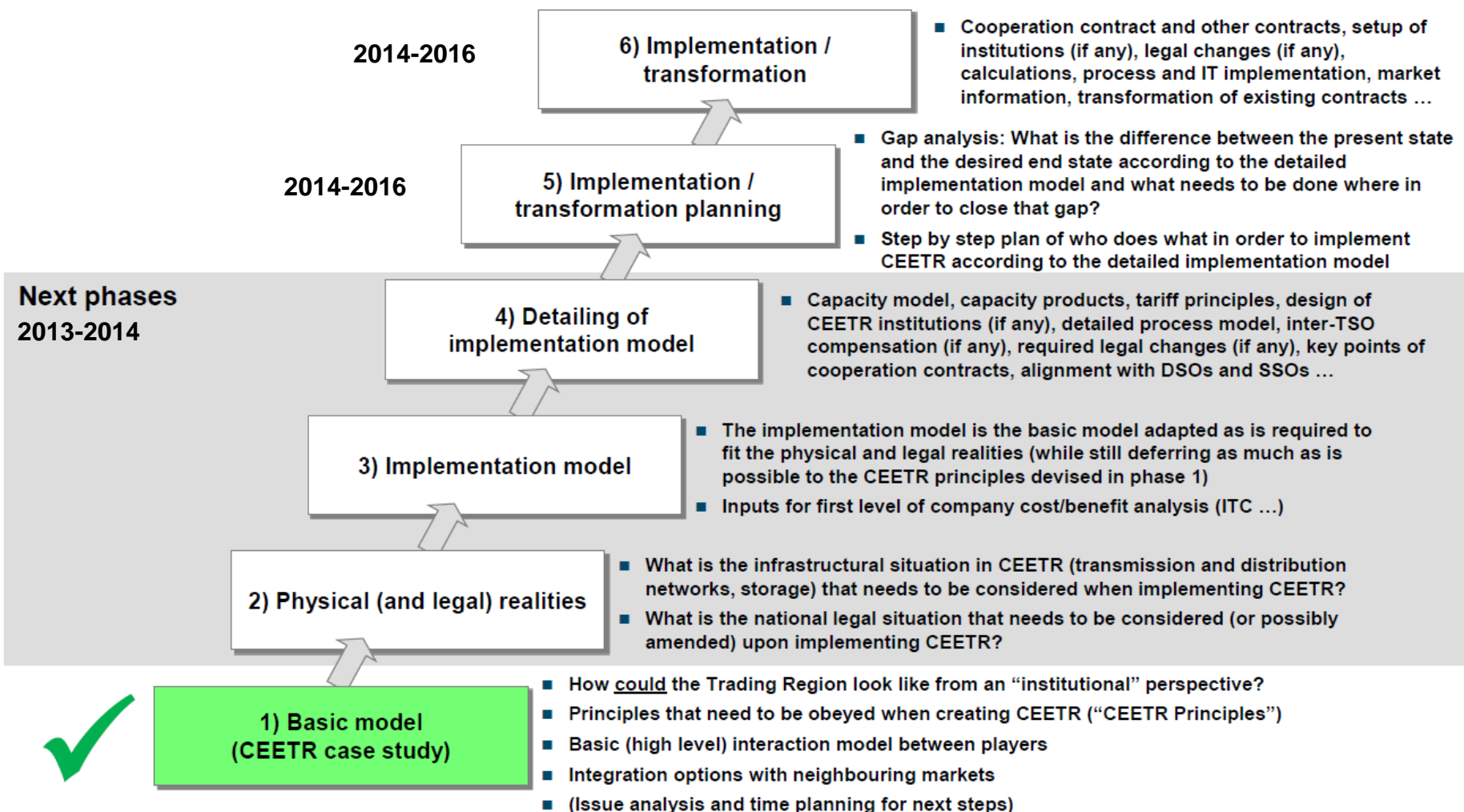
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- **Status after First Project Phase**
 - Basic principles of CEE Trading Region are defined
- **Outlook Second Project Phase**
 - Aim is to gain supplemental information in order to be in a position to decide jointly whether and under which conditions to move project CEETR into an implementation phase
 - Develop the “basic model” to a detailed “implementation model”
 - Based on the “implementation model”, a final implementation decision can be made

CEE Trading Region: indicative timeline



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Requirements for realisation

- All key stakeholders need to be closely involved in the future development of the CEETR model
- Successfully overcoming all legal and financial challenges
- Acceptance by market participants
- CEETR model and the respective European regulations have to be in line
- Ensuring consistency and exploiting synergies with other projects in the region



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Definition of “Functioning Wholesale Markets”

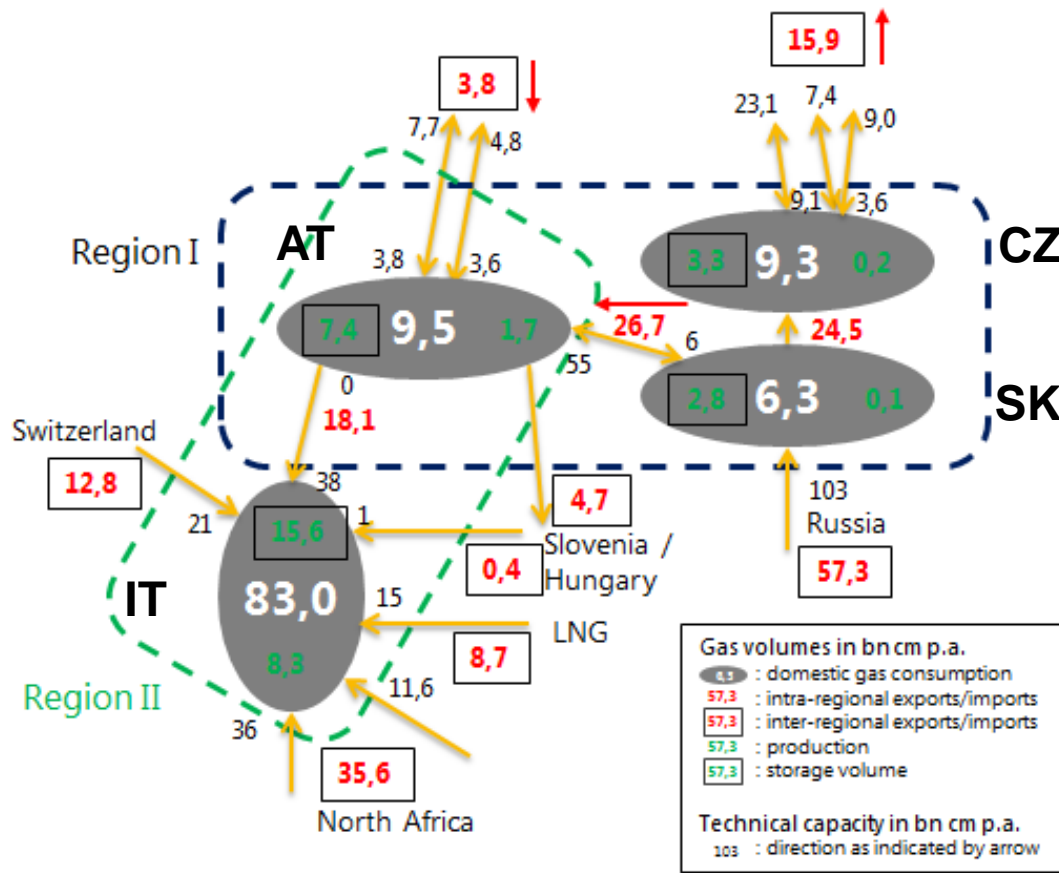
- A functioning wholesale gas market is
 - a single price zone* that is
 - accessible to incumbents and new entrants on equal (i.e. non-discriminatory) terms and where
 - trading is liquid (i.e. vivid and resilient at the same time), so that it
 - creates reliable price signals in the
 - forward and spot markets
 - which are not distorted, even if substantial volumes are bought or sold in this market (in other words: no single transaction shall distort the market price)

* This is to be interpreted in the economic way (i.e. one market price for the same (identical) product at the same time at the same place)

Technical data and flows in the analysed regions



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Region I:

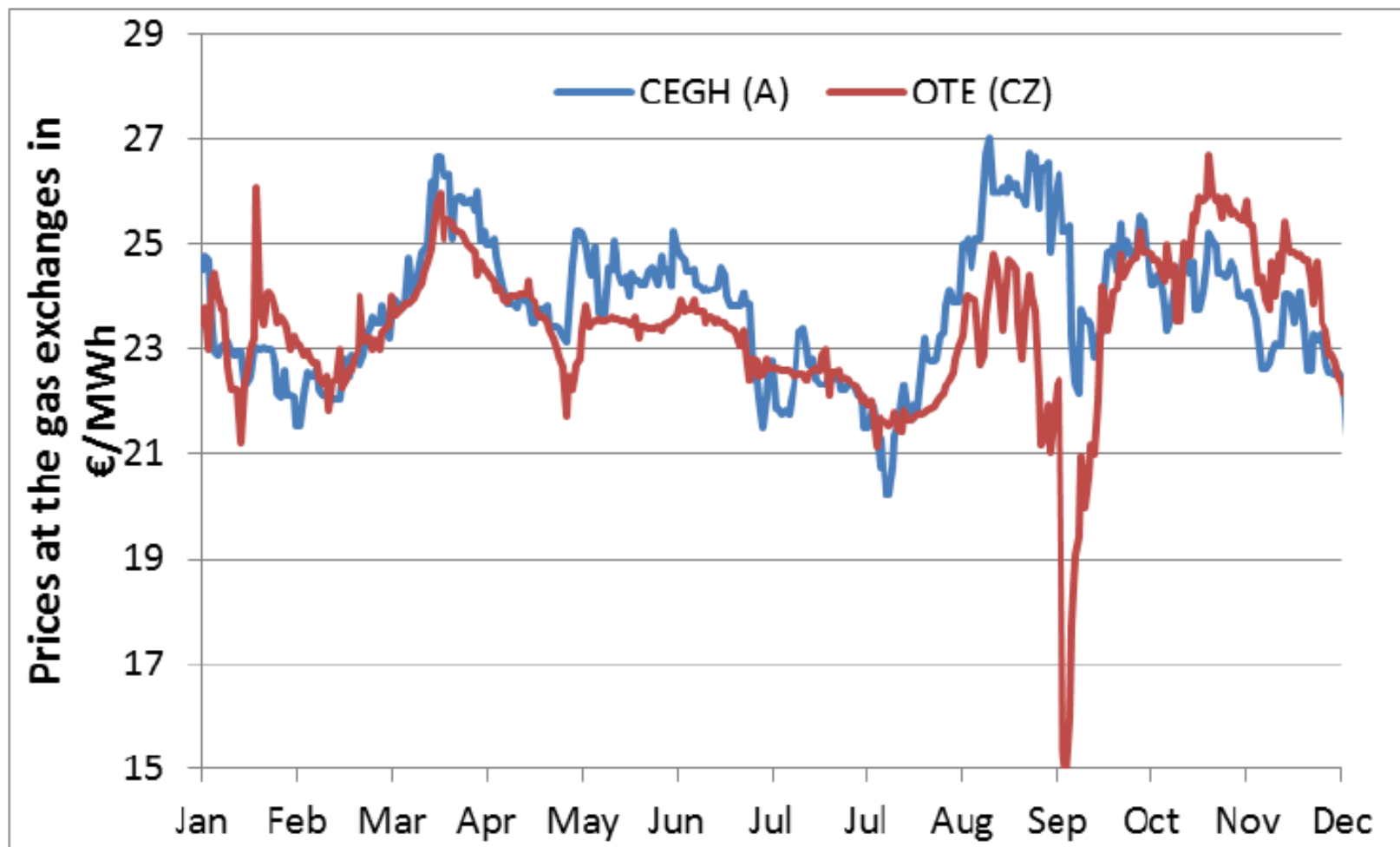
- Consumption: 25,1 bcm
- Imports: 61,1 bcm
- Exports: 38,7 bcm
- Production: 2,0 bcm
- Storage capacity: 54 % of total consumption
 - 29,5% (A)
 - 11,1% (SK)
 - 13,2%(CZ)
- Imports mainly from Russia
- Gas exchanges exist in Austria and the Czech Republic
- In the Slovak Republic, no VTP has been set up

Region II

- Consumption: 92,5 bcm
- Imports: 87,6 bcm
- Exports: 5,1 bcm
- Production: 10,0 bcm
- Storage capacity: 24,8 % of total consumption
 - 8%(A)
 - 16,9% (I)
- Diversified imports
- VTPs exist in Austria and Italy

[Source: UK Department of Energy and Climate Change, IEA, ENTSOG, E-Bridge analysis]

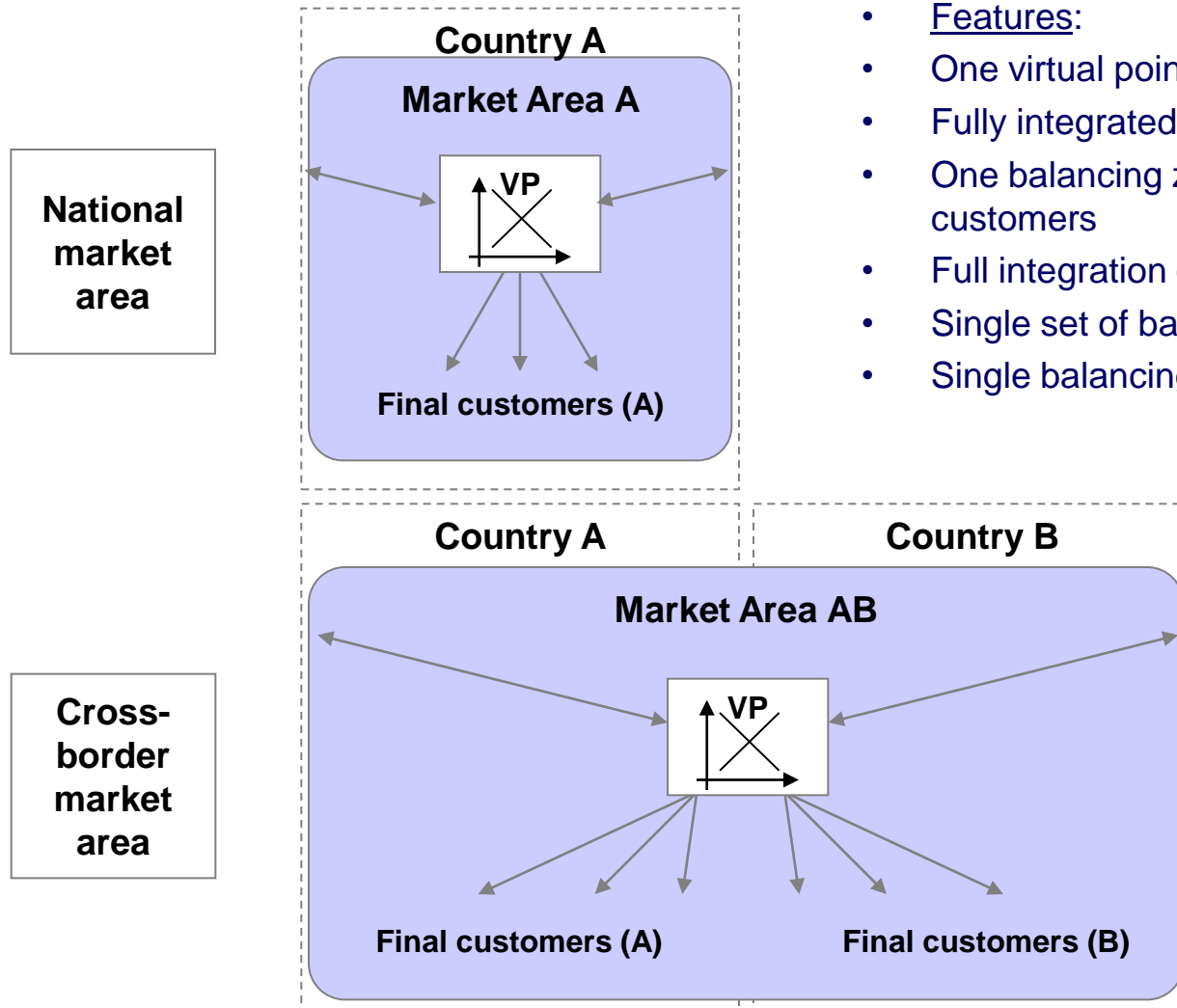
Spot prices in Austria and the Czech Republic in 2011



Observed price differences between the Austrian and Czech market in 2011



The Market Area Model



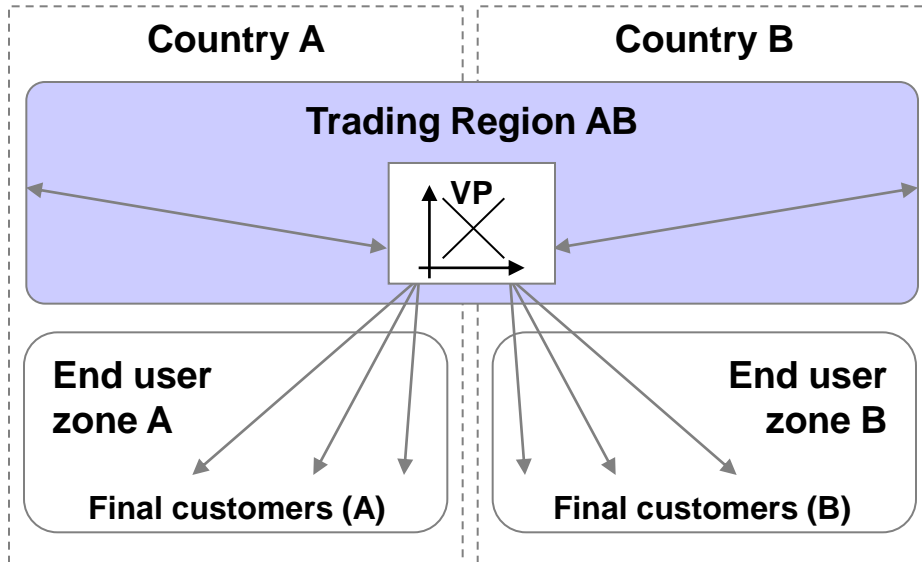
- Features:
- One virtual point for wholesale trading
- Fully integrated wholesale market
- One balancing zone from import points to final customers
- Full integration of DSO networks
- Single set of balancing rules
- Single balancing entity

Symbols

- Virtual point of the market area serving as the sole marketplace of the market area
- Entry or exit contract
- Exit contract



The Trading Region Model



Features:

- One virtual point for wholesale trading
- Fully integrated wholesale market
- Trading region is basically kept free of imbalances
- Final customers are balanced in national end user zones that may reflect national specifics
- End user balancing may be done by national balancing entity
- Congestion-free interconnection between trading region and end user zones through the common virtual point (→ virtual exit to end user zone)


Legend and Symbols

End user zone = National balancing zone for national final customers, no matter the system (distribution or transmission) they are connected to

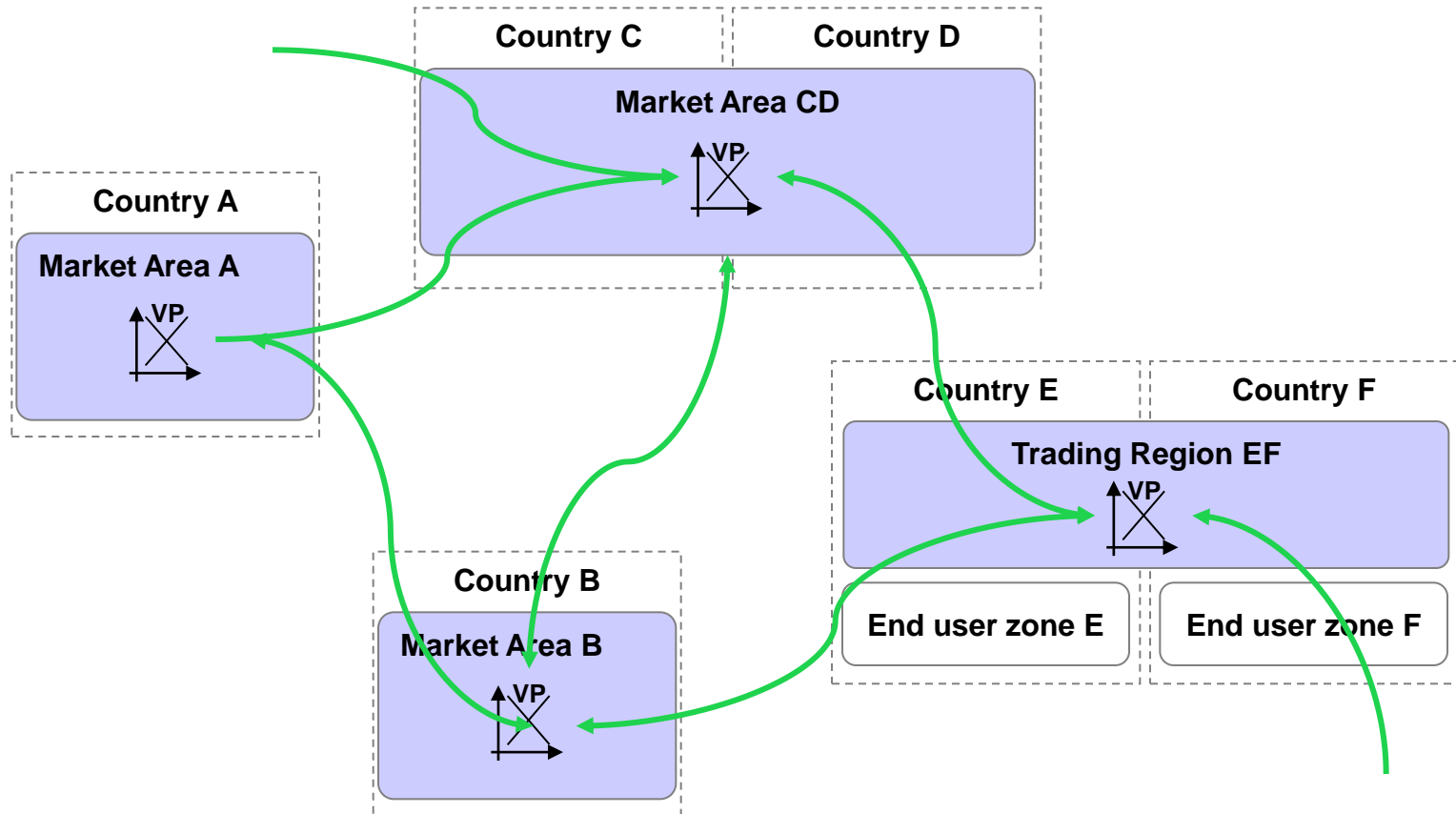
Trading Region AB = Cross-border entry/exit system including all nominated points on the transmission systems of countries A and B

↔ Entry or exit contract



→ Exit contract

 Virtual point of the trading region serving as the sole marketplace of the trading region and all attached end user zones. Shifting of gas between trading region and end user zone is done by nominating a virtual exit on the VP.

MECO-S Model: Architecture at Large



Legend and Symbols

-  "VP2VP" (also called "Hub to Hub") capacity product
-  Virtual point.



Capacity model principles

- Harmonisation of capacity quality needed
- The Trading Region uses the following types of entry/exit capacities:
 - Freely allocable capacity
 - Dynamically allocable capacity
 - Interruptible capacity
- TSOs to increase the amount of freely allocable capacity on their network by:
 - Operational flow commitments and/or
 - oversubscription and buy-back schemes and/or
 - investment (as a long-term measure)



Tariff principles

- For avoiding any loss of tariff income by any TSO the following mechanisms are used:
 - Allocation of lost entry income to the following points on the same network
 - the remaining bookable points and
 - downstream interconnection points with other TSOs operating within the trading region (to be paid by means of Inter-TSO Compensation)
- Compensation of lost exit income by:
 - Inter-TSO Compensation; and
 - a reasonably moderate increase of tariffs at bookable entry points on the network of the TSO losing the exit income.
- Any losses in tariff income from current long-term transport contracts not recovered through the above measures shall still be payable by the current long-term transport customers until the end of their respective contract's term



Balancing principles

- Distinction between CEETR and End User Balancing Zone
- Shippers to choose with which TSO they want to be balanced in the CEETR
- “Allocated as nominated” principle applies
- Ex-ante balancing on an hourly basis
- Required system energy obtained on gas exchange operating on CEETR’s VTP
- All balancing accounts incl. the CEETR VTP
- For points without OBA point-specific balancing accounts are implemented
- Balancing in End User Zone according to national rules, however, Zones shall include the CEETR VTP