The MECO-S Model

a proposed

Target Model

for the

European Natural Gas Market

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Preliminary Outline

April 2011

Agenda

- Background for a Gas Target Model
- The MECO-S Model – Overview
- The MECO-S Model Explained

Questions

Please send any questions to:

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- Background for a Gas Target Model
- The MECO-S Model – Overview
- The MECO-S Model Explained

Background for a Gas Target Model (1)

- The 3rd package sets a number of structural preconditions towards realizing an internal market architecture.
- Most notable among them are the mandatory entry/exit organisation of TSO network access and the processes that shall lead to a harmonized system of European TSO netcodes.
- Now, many different stakeholders at European and national level are working on the implementation of the 3rd package
  - **Lawmakers in the 25 member states with natural gas**
  - **Regulators in the 25 member states with natural gas**
  - **ACER**
  - **ENTSOG**
  - **The EU Commission**
  - **Members of comitology committees**
  - **TSOs, DSOs and their associations**
  - **Suppliers, wholesalers, retailers and traders and their associations**

Background for a Gas Target Model (2)

- A challenge for these implementation efforts is, that the 3rd package does not include a comprehensive vision of the organisation of network access across the European Union.
- For instance, the 3rd package does not tell:
  - **if every single TSO shall set up its own entry/exit system or if the number of entry/exit networks shall be smaller then the number of TSOs**
  - **if the TSO balancing system shall include distribution networks or not**
  - **if entry/exit network access shall extend from transmission systems down to distribution networks or not**
  - **etc.**
- Depending on the answers to these questions certain issues need to be addressed on a European level or not.
  - **For instance if the TSO balancing system shall include distribution systems, the European balancing harmonization has a much wider scope (and requires much more detail) then otherwise; also national action would be required to obligate DSOs to blend into that system.**
  - **Or if the entry/exit systems shall include distribution systems, then action on a national level will be required to deal with the corollary cost (and tariff) issues for DSOs (which may receive a cost allocation from TSOs in such a system).**

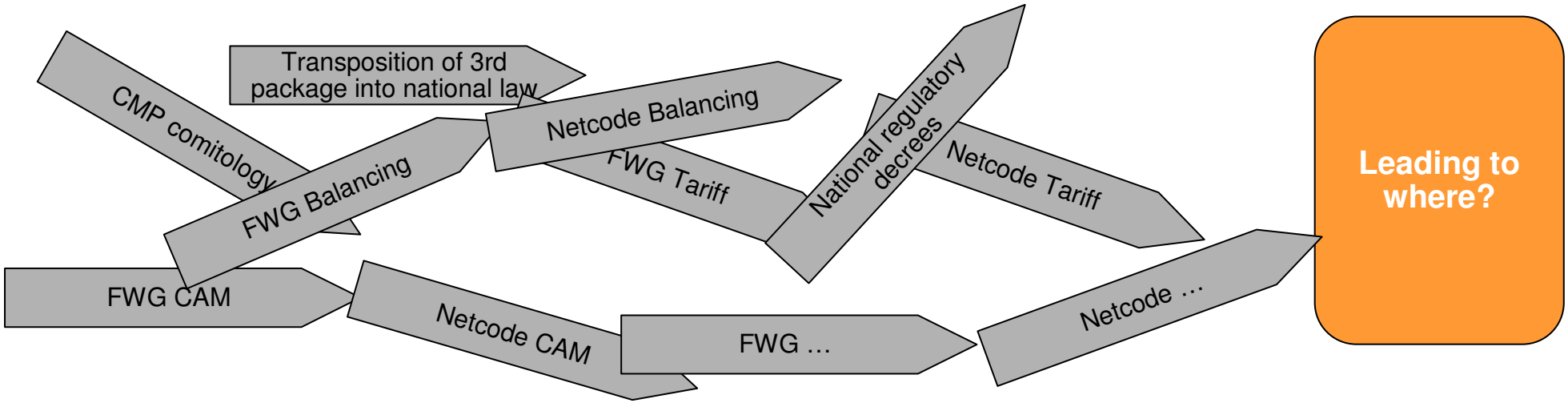
Background for a Gas Target Model (3)

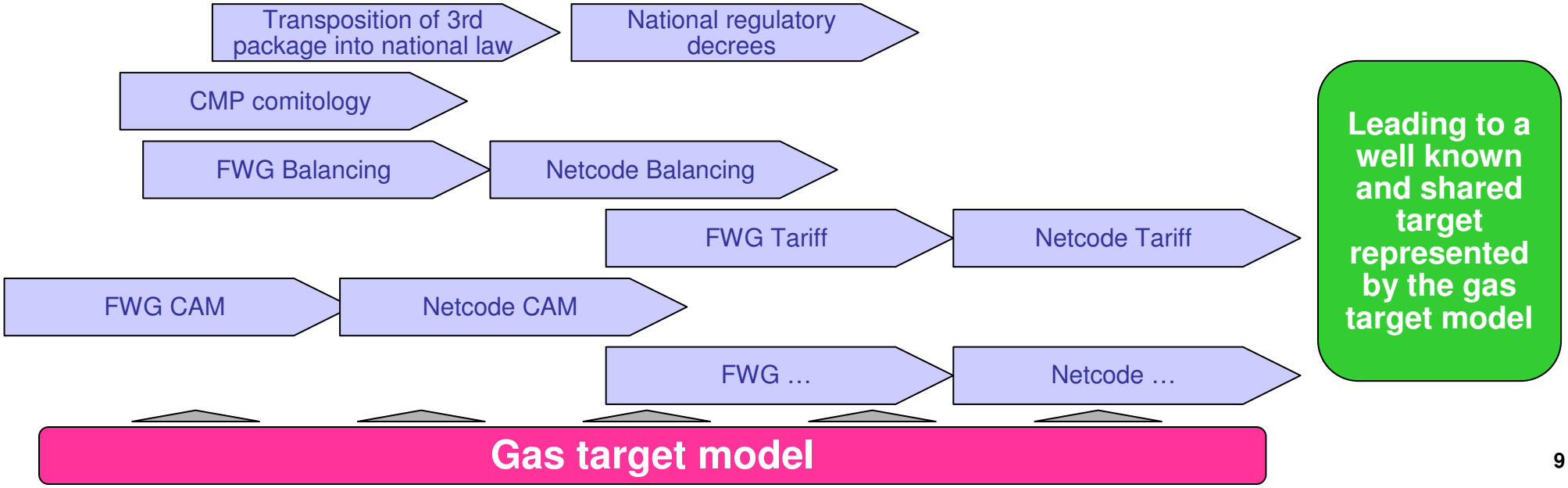
- Now the risk is, that – within a very limited timescale – a lot of policy makers and other stakeholders while doing their best to implement the 3rd package – interpret and implement the package in a different way or work on different strands of implementation that in the end contradict each other.
- This problem is aggravated by the fact that – inter alia due to resource limitations – not all European netcodes can be developed at the same time.
- It is in this potential problem area where a gas target model can play a beneficial role.
- Metaphorically speaking, the implementation of the 3rd package is a journey with many drivers and many passengers.
- For this implementation journey, a gas target model can serve as a communication tool.
- It enables communication between the drivers and passengers about the destination of the implementation journey.
- It makes visible, where all the different strands of work in national and European implementation shall lead to – like a photo of the destination that one can look at before one travels there.

Background for a Gas Target Model (4)

- It does not so much matter how the gas target model looks like – it will as any political process have to accommodate a lot of interests.
- Instead the most important things about a gas target model are:
  - **that there is a gas target model**
  - **that is well understood by stakeholders**
  - **that is agreeable to stakeholders**
  - **that is being observed by those parties doing implementation work**
  - **that is regularly reviewed and adapted to new insights as appropriate**
- Having no target model means going on a long and costly journey without a map, without a more or less clear vision of the destination.
- This would involve the risk of an unnecessary long travel, possibly including detours and a waste of time and money.
- It is important to note, that – as a communication tool – the gas target model is non-binding.
- Unlocking the value of that tool requires the goodwill of all stakeholders. The rewards will be easier and better alignment of implementation work and overall a more successful (consistent, cost-efficient, quick) implementation of the 3rd package.

The Promise of the Gas Target Model





Background for a Gas Target Model (5)

- The MECO-S model to be presented today is a proposal for a gas target model.
- It strives at presenting a consistent picture of a future European gas market architecture.
- It is transparent with respect to the objectives to be achieved.
- It is supposed to serve as a starting point for intensive discussion.
- It can and shall be adapted to any insight from discussion in order to become a widely accepted gas target model that helps the efficient implementation of the 3rd package in the interest of all stakeholders.

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- Background for a Gas Target Model
- The MECO-S Model – Overview
- The MECO-S Model Explained

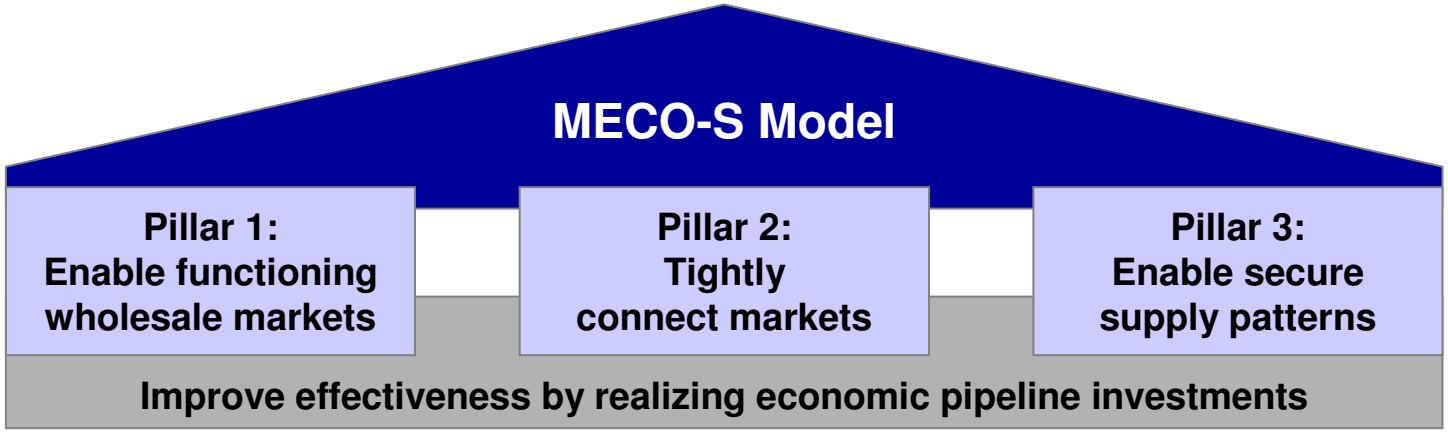
The MECO-S Model

- The MECO-S Model is a proposal for the European Gas Target Model.
- MECO-S is an acronym for:

Market Enabling, Connecting and Securing

- The Model focuses primarily on issues that can be addressed in framework guidelines and the ENTSOG network codes.
- The Model builds on concepts developed in the current drafts of the framework guidelines on CAM and Balancing and the CMP annex.
- The status of the model is preliminary.

Overview of the MECO-S Model for European Gas Market Integration



Pillar 1: Structuring network access to the European gas grid in a way that enables functioning wholesale markets so that every European final customer is easily accessible from such a market.

Pillar 2: Tightly connecting the functioning wholesale markets through improving conditions for cross-market supply and trading and potentially implementing market coupling for day ahead markets, all of this leading to improved short- and mid-term price alignment between the markets as far as the (at any time) given infrastructure allows.

Pillar 3: Enabling the establishment of secure supply patterns to the functioning wholesale markets.

Foundation: Improving the effectiveness of pillars 1 to 3 by making sure that economic investments in pipelines are realized.

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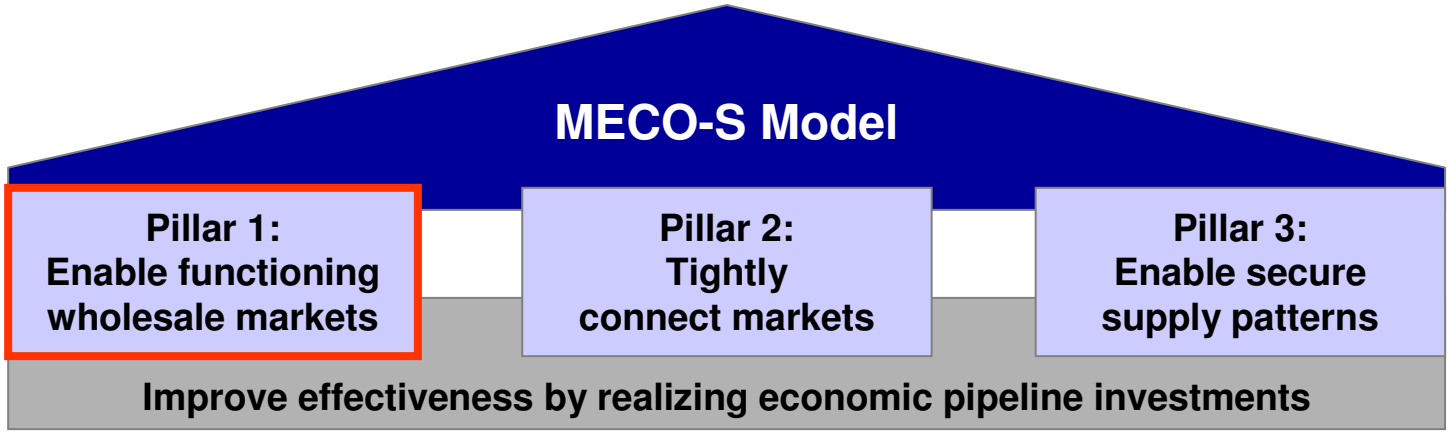
MECO-S Model: Pillar 1



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)

Pillar 1: Problem(s) to be Solved

- Currently out of 25 member states with gas, there are only about 3+ gas markets in Europe that could justifiably be called “functioning”.
- Now, functioning markets (spot and forward) are essential for a number of important things:
  - **for discovery of the fair, competitive market price at any given point in time**
  - **for the regular buying and selling of gas in the course of asset (“portfolio”) optimization (e.g. supply contracts, storage, power production)**
  - **for risk measurement and risk management**
  - **for providing retailers with an easily accessible source for (piecemeal) procurement of gas at true market prices**
  - **for a certain redundancy in order to deal with unexpected rises in (and drops of) demand in an efficient way**
- Since most procurement, risk management, optimization and trading activities are carried out in the forward markets, it is foremost imperative that these markets are made functioning.
- A mere enabling of functioning spot markets would clearly fall short of realizing the benefits of functioning markets listed above and thereby fail in delivering major promises of energy liberalization.

Pillar 1: Solution – Overview

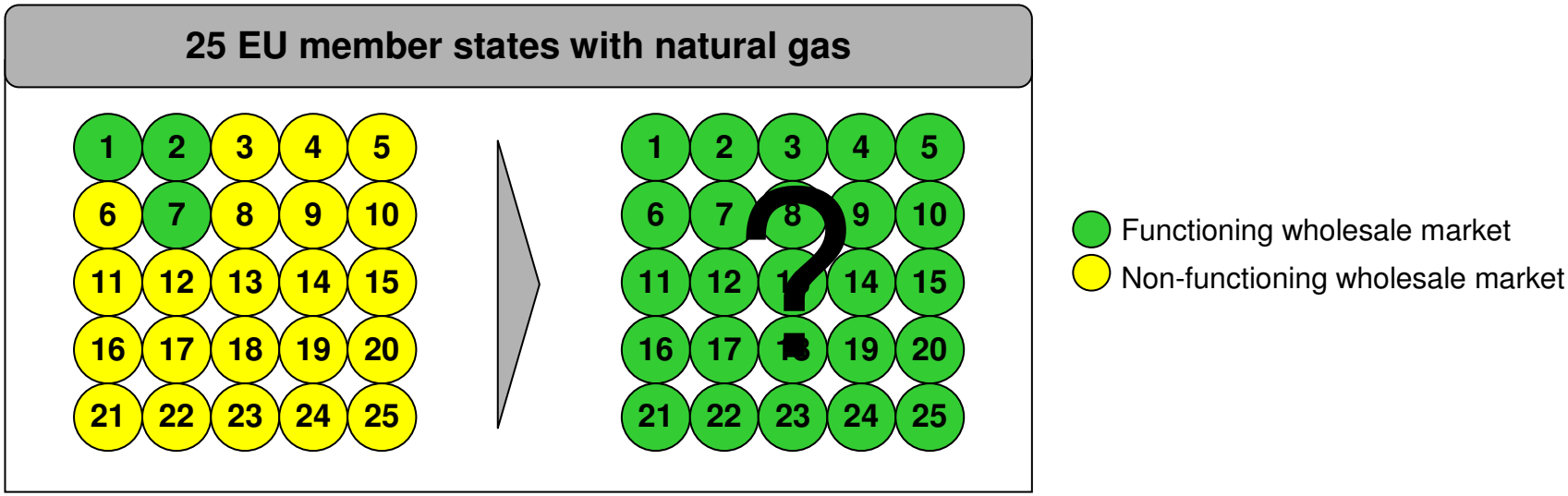
- The question is, how can those member states that do not already profit from a functioning gas wholesale market be brought in a such a position?
- This can be fostered by clearing the impediments to the emergence of functioning wholesale markets.
- The most important impediments to the emergence of a functioning wholesale market are:
  - **a) Lack of market size (i.e. measured by consumption)**
  - **b) Improper market architecture**
  - **c) Lack of access to the market**
- The MECO-S model addresses these issues by suggesting to:
  - **a) Implement markets as integrated zones using one of the following market architectures:**
    - Market areas, or
    - Trading regions
  - **b) Make sure that every zone caters to a consumption of at least 20bcm**
    - Member states with larger gas consumption can realize this within their own borders
    - Member states with smaller gas consumption should cooperate with other member states in this respect
  - **c) Make sure that the zone has access to at least three different sources of gas**
    - E.g. domestic production, EU import points, LNG terminals or connection to other functioning markets that fulfil the criterion
    - NB: The requirement that (sufficient) access to these capacities must be possible is handled in pillar 2 and the common foundation (i.e. investment).

Pillar 1: Solution – Questions Regarding Size of Markets (1)

- Three questions regarding the "size argument" (i.e. that functioning markets should be fostered by making sure that markets have a certain minimum size) are frequently asked:
  - a) **Could functioning wholesale markets – given enough time – also emerge in member states with a smaller gas consumption?**
  - b) **Isn't a tight connection of a non-functioning market to a functioning market – e.g. supported by market coupling – the smart alternative to avoid the necessity of cross-border markets for member states with smaller gas consumption?**
  - c) **As a variation on b): Couldn't the same effects be achieved even by only tightly connecting a group of non-functioning markets?**

Pillar 1: Solution – Questions Regarding Size of Markets (2)

- Three questions regarding the "size argument" (cont.):
  - a) **Could functioning wholesale markets – given enough time – also emerge in member states with a smaller gas consumption?**
    - It involves substantial effort for wholesalers to "make a market" at a certain delivery point
    - Therefore it appears likely that wholesalers will always go for the markets with large gas consumption to create a traded market that can qualify as a functioning wholesale market.
    - Markets with smaller gas consumption would be handled by traders by an alternative business model, that involves substantial illiquidity and risk premiums for the – auctioned – cross-market capacities from the closest functioning wholesale market.



Pillar 1: Solution – Questions Regarding Size of Markets (3)

- Three questions regarding the "size argument" (cont.):

  b) Isn't a tight connection of a non-functioning market to a functioning market – e.g. supported by market coupling – the smart alternative to avoid the necessity of cross-border markets for member states with smaller gas consumption?

  - Technical note: This would require that every member state has at least interconnection to one member state with a (foreseeable) functioning market – this is not the case everywhere.
  - Legal note: Article 1 of REGULATION (EC) No 715/2009 says:

    "*This Regulation aims at: […]*

    (c) facilitating the emergence of a well-functioning and transparent wholesale market […]"

    – The question in that regard is, if the objective of Regulation 715 could be fulfilled by realizing functioning wholesale markets only in some member states?
  - Substantive argument 1: *Spot market coupling is not enough*.
    – As stated before, the most important market for the gas business is the forward market.
    – Yet, for various reasons, market coupling appears to be an option for spot markets only, and not also for the forward markets
      » NB: One of these reasons is the OTC-nature of most forward deals whereas forward market coupling requires all deals to be done through exchanges.
    – Therefore a mere coupling of the spot markets would not create a "quasi"-functioning wholesale market in the smaller market. Gas buyers in the smaller market would still have to buy in the larger market and transport the gas to the smaller market (crossing an auctioned capacity).

  → Continued on next chart

Pillar 1: Solution – Questions Regarding Size of Markets (4)

- Three questions regarding the "size argument" (cont.):

b) Isn't a tight connection of a non-functioning market to a functioning market – e.g. supported by market coupling – the smarter alternative to avoid the necessity of cross-border markets for member states with smaller gas consumption? – Continued from previous chart

- Substantive argument 2: *Coupling illiquid markets involves risks*
  - Implementing market coupling between two (or more) spot markets where at least one of them is illiquid involves the risk of the illiquid markets being gamed, which would lead to distorted, inefficient results.
- Substantive argument 3: *Buying in the neighbouring market via capacities to be booked (bid for) is by far not the same as having a functioning home wholesale market*:
  - In order to manage price risk, retailers are increasingly buying smaller quantities of gas in shorter intervals by synchronising their procurement activities with their sales performance (this can lead to hundreds of procurement contracts of a single retailer for a single delivery year).
  - Such incremental procurement can easily be accomplished, if the home market is a functioning wholesale market because no incremental capacity booking of (or bidding for) capacity is required in connection with the procurement of gas.
  - If the gas would have to be bought in a neighbouring market via a capacity that has to be booked, the retailer is put in an unfavourable position, because:
    - » Capacity is not always instantly available (→ "booking (or auctioning) window") – leading to capacity risk for the retailer
    - » Access to capacity involves a price risk (→ auctions) – which makes quoting firm offers to final customers a risky business
  - These are clear disadvantages, especially for small retailers and new entrants into the gas retail business.

Pillar 1: Solution – Questions Regarding Size of Markets (5)

- Three questions regarding the "size argument" (cont.):

  c) Couldn't the same effects be achieved even by tightly connecting a group of non-functioning markets only?

  - Since tightly connecting a non-functioning market to a functioning market does not represent a favourable solution (as analysed under question b) above), this is even more so in case of question c) where only non-functioning markets would be connected.
  - Further analysis of question c) is therefore not required.

  Conclusion on the "size argument":

  - Connecting markets better can help to improve the situation of non-functioning markets.
  - But a mere connection of markets can never replace the benefits of every market being a functioning wholesale market.
  - Since it does not appear acceptable that large parts of Europe's final customers are forever cut off from the benefits of their home market being a functioning market, cross-border cooperation in the creation of functioning wholesale markets appears to be a necessity – and opportunity – for member states with smaller gas consumption.
  - Finally, also market based balancing requires the availability of a functioning wholesale market per (i.e. every) market to be balanced.

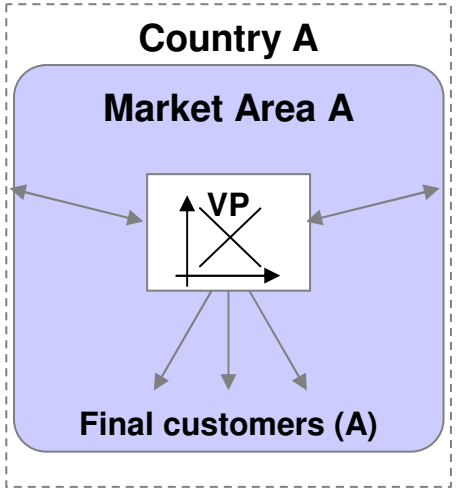
Pillar 1: Solution – Architectures to Enable Functioning Markets

- In order to create the structural conditions for the emergence of functioning markets, the following alternative architectures are foreseen in the MECO-S model.
- Both architectures realize integrated zones on the basis of entry/exit network access.
  - **Market Areas**
    - i.e. an integrated zone from market border points to the final customers, either structured as:
      - National market areas*
        (if functioning wholesale markets can be realized within national borders); or
      - Cross-border market areas
        (if cross-border cooperation is required to achieve functioning markets)
  - **Trading Regions**
    - i.e. an integrated zone only for the wholesale market (i.e. excluding final customers) with congestion-free interconnection to national end user zones.
      - NB: In principle trading regions can be used nationally or cross-border in cooperation with other member states. In the following charts, the trading region model is only shown in a cross-border application.

* Large member states may even host more than one national market area.

Pillar 1: Market Architecture 1
The Market Area Model

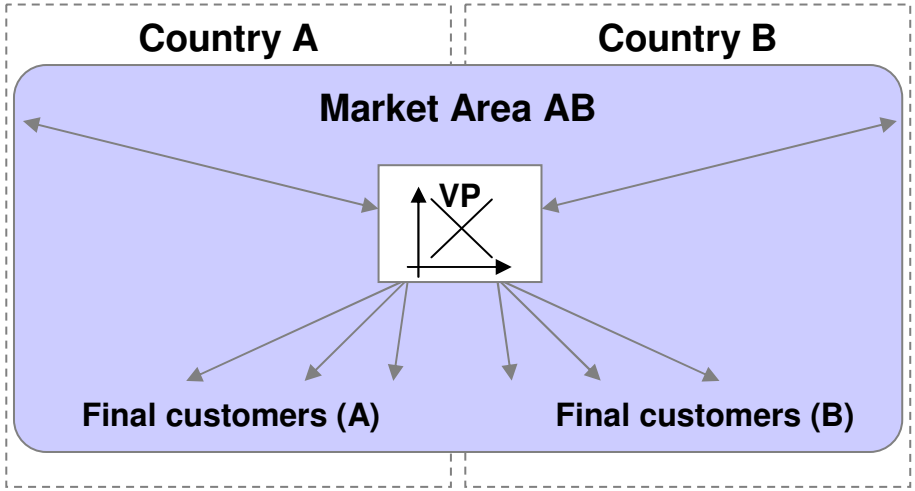
National market area



Features:

- Fully integrated wholesale market
- One virtual point for wholesale trading
- Entry-contracts entitle the shipper to inject gas into the market area; the injected gas is then deemed to be at the "virtual point"
- Exit-contracts entitle the shipper to ship gas from the virtual point to a final customer exit (or a market exit, in that case on the basis of nominations)
- One balancing zone from entry points to final customers (i.e. including all forecasting errors)
- Full integration of DSO networks (cost allocation, provision of balancing information)
- Single set of balancing rules
- Single set of final customer consumption measuring/estimation (incl. SLP) rules
- Single balancing entity

Cross-border market area



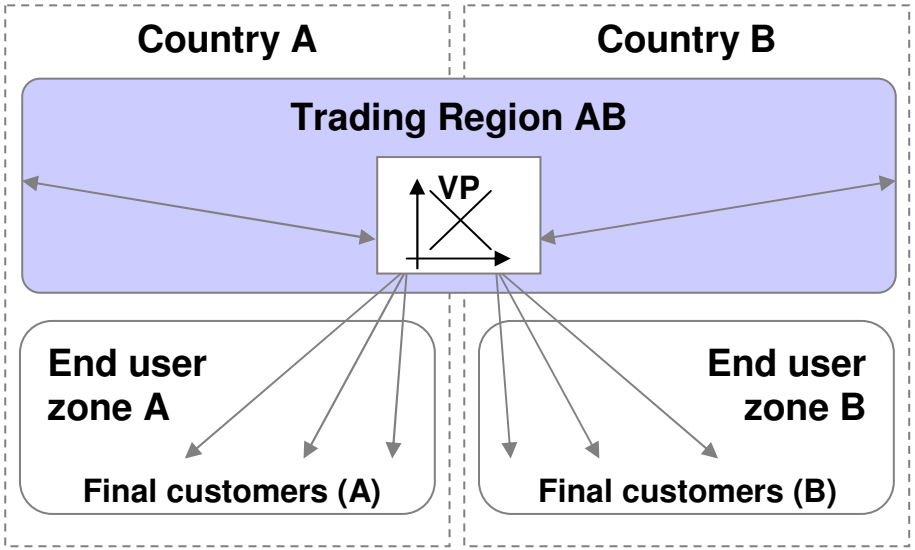
Symbols

Virtual point of the market area serving as the sole marketplace of the market area

Entry or exit contract

Exit contract

Pillar 1: Market Architecture 2
The Trading Region Model



Features:

- Fully integrated wholesale market
- One virtual point for wholesale trading (including for trading balancing energy)
- Entry-contracts entitle the shipper to inject gas into the trading region; the injected gas is then deemed to be at the "virtual point"
- Exit-contracts entitle the shipper to ship gas from the virtual point to an end-user zone (or another exit) on the basis of nominations
- Trading region is basically kept free of imbalances
- Final customers (i.e. the forecasting errors relating to them) 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)
- Storage may be (taking into account the technical situation) allocated to either the trading region or an end-user zone (or even both balancing systems – storage customers would decide by nomination)

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

VP 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.

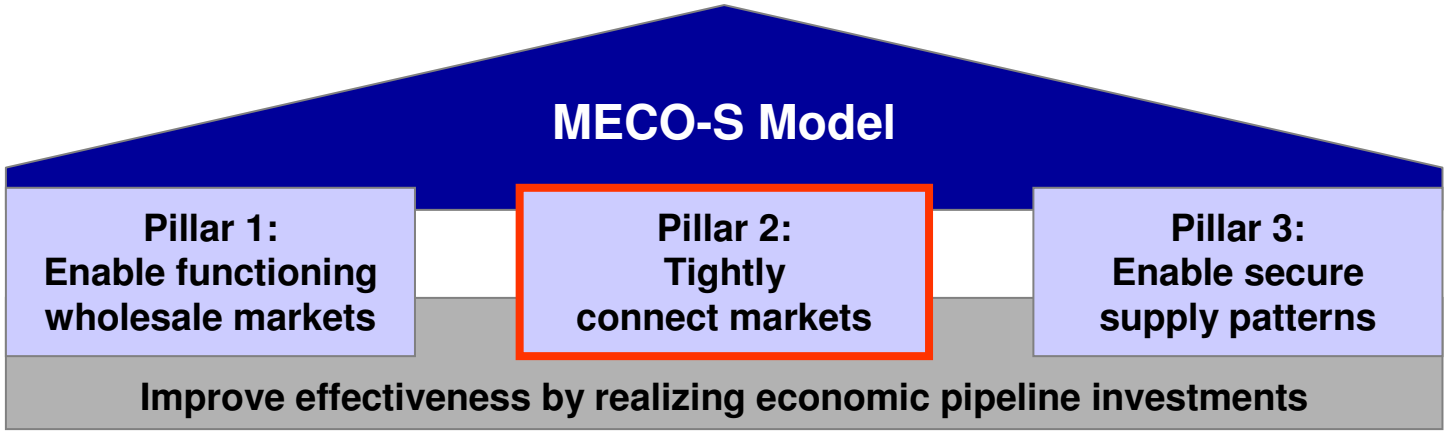
Member States' Options for Creating Functioning Markets

In order to create functioning wholesale markets, member states have the following options:

- Countries where the structural conditions allow (or have already allowed) the emergence of a functioning wholesale market:
  - **Establish a market area (i.e. integrated down to end users) (where this is not already the case)**
- Countries where the structural conditions currently do not allow the stand alone emergence of a functioning market:
  - **Create a cross-border market area with adjoining member states (or accede to an existing one)**
  - **Establish a trading region with adjoining member states**
  - **(Where possible) Change the structural conditions as much as is required to enable a national functioning market, especially by establishing sufficient access to additional sources of gas (e.g. by new interconnectors and/or LNG terminal).**

- Notes:
  - **The two architectures may be used simultaneously in Europe. While one group of member states goes for the trading region model, others may implement market areas. In both cases a functioning wholesale market is possible and the connection between these markets is not affected by the model chosen.**
  - **Nothing above prevents member states that already host functioning markets from establishing cross-border market areas or trading regions with neighbouring member states.**

MECO-S Model: Pillar 2



Pillar 2: Background (1)

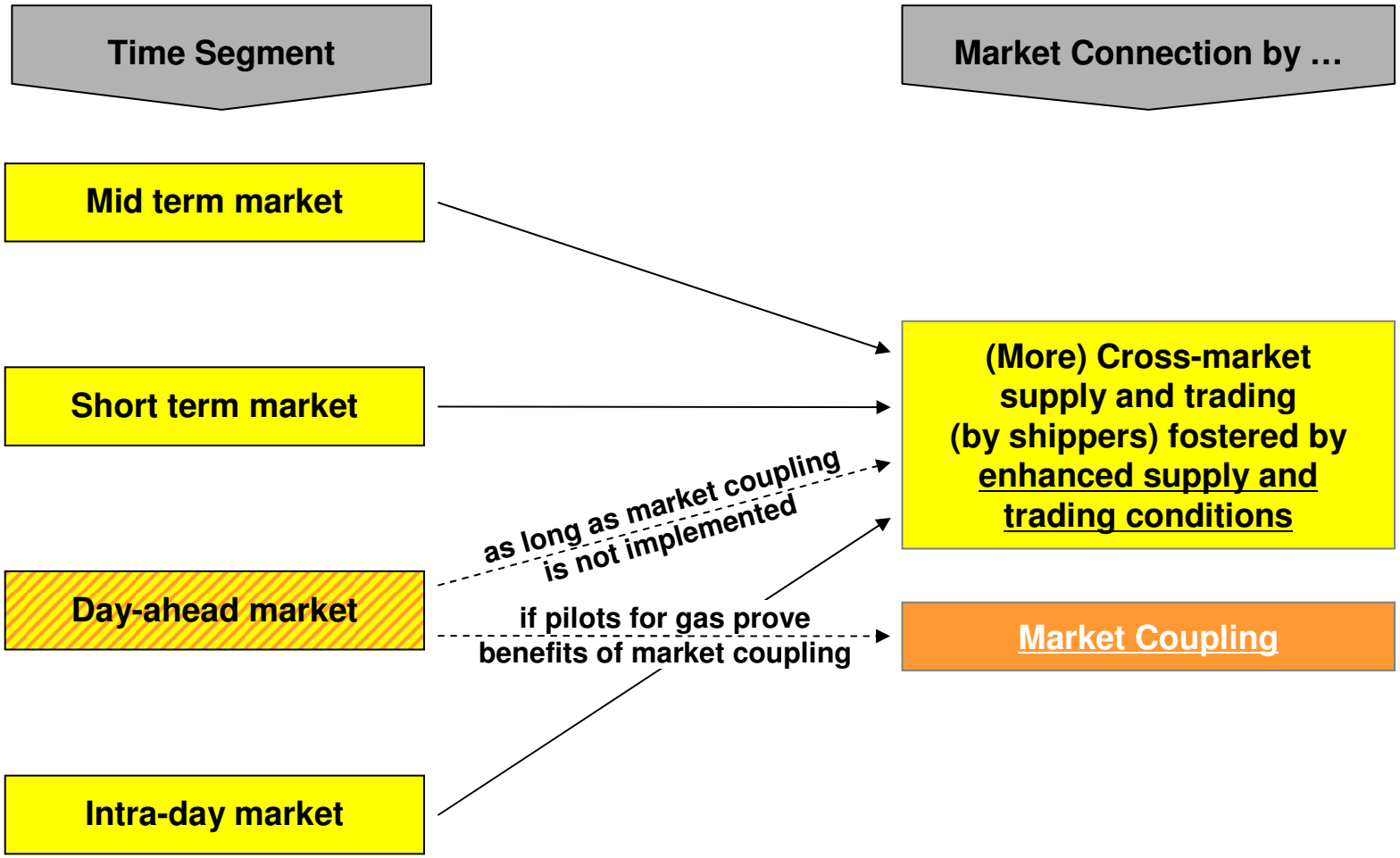
- The background of Pillar 2 is the following argument:
  - **a) At any given time the European gas transmission network has (and will have) a certain TPA* capacity**
  - **b) This capacity provides the potential to ship gas from sources to sinks or in other words – from lower price points to higher price points.**
  - **c) The existing capacity is then used efficiently, if shippings from lower price markets to higher price markets are realized until either:**
    - There is no more price differential between those markets
      (→ leading to market participants having no more interest in shipping additional amounts of gas)
    - The available capacity is fully used
      (→ this sets a technical limit to shippings from lower price to higher price markets)
- The visible effect of this optimal use of existing transmission capacity is that price differentials between adjoining traded markets are reduced.
- In other words: Prices for traded gas products converge and their movements over time will resemble each other better. This is termed “price alignment”.
- This (better) price alignment on the basis of the existing infrastructure produces efficiencies in the industry by allowing better asset optimization (supply contracts, storage, power production) leading to overall welfare gains on a European scale.
- Better asset optimization leads to increased efficiency of the energy industry; in competitive markets final customers will also benefit from this increased industry efficiency.
- To avoid any doubt: Better capacity utilization and the associated improved price alignment in traded markets does not interfere at all with pricing formulas in (long-term) supply contracts. This is and will remain the exclusive decision of market participants.

* TPA = third party access

Pillar 2: Background (2)

- Capacity utilization (leading to better price alignment in turn leading to better asset optimization) can be optimized by connecting markets better.
- This is done first and foremost by improving conditions for cross-market transport by suppliers and traders.
  - **The package of measures to accomplish this is termed: "enhanced supply and trading conditions" or "ESTC".**
  - **Several of the measures in this package are already comprised in the existing drafts of framework guidelines and CMP annex.**
- Another option to connect markets is market coupling.
- For practical reasons, the MECO-S model considers market coupling for the day-ahead market only.
  - **NB: This is among other reasons due to the OTC-nature of (very) large parts of the forward market in most member states.**
- Due to the current uncertainties about the correct design of market coupling for gas (based on continuously traded markets?) and the practical realization of its theoretical benefits, the MECO-S model suggests to start with pilot projects on market coupling in gas testing different designs.
- If the benefits of market coupling for gas can be proven in practice (and once the "best" design was determined), market coupling would be made a concrete building block of the MECO-S model.

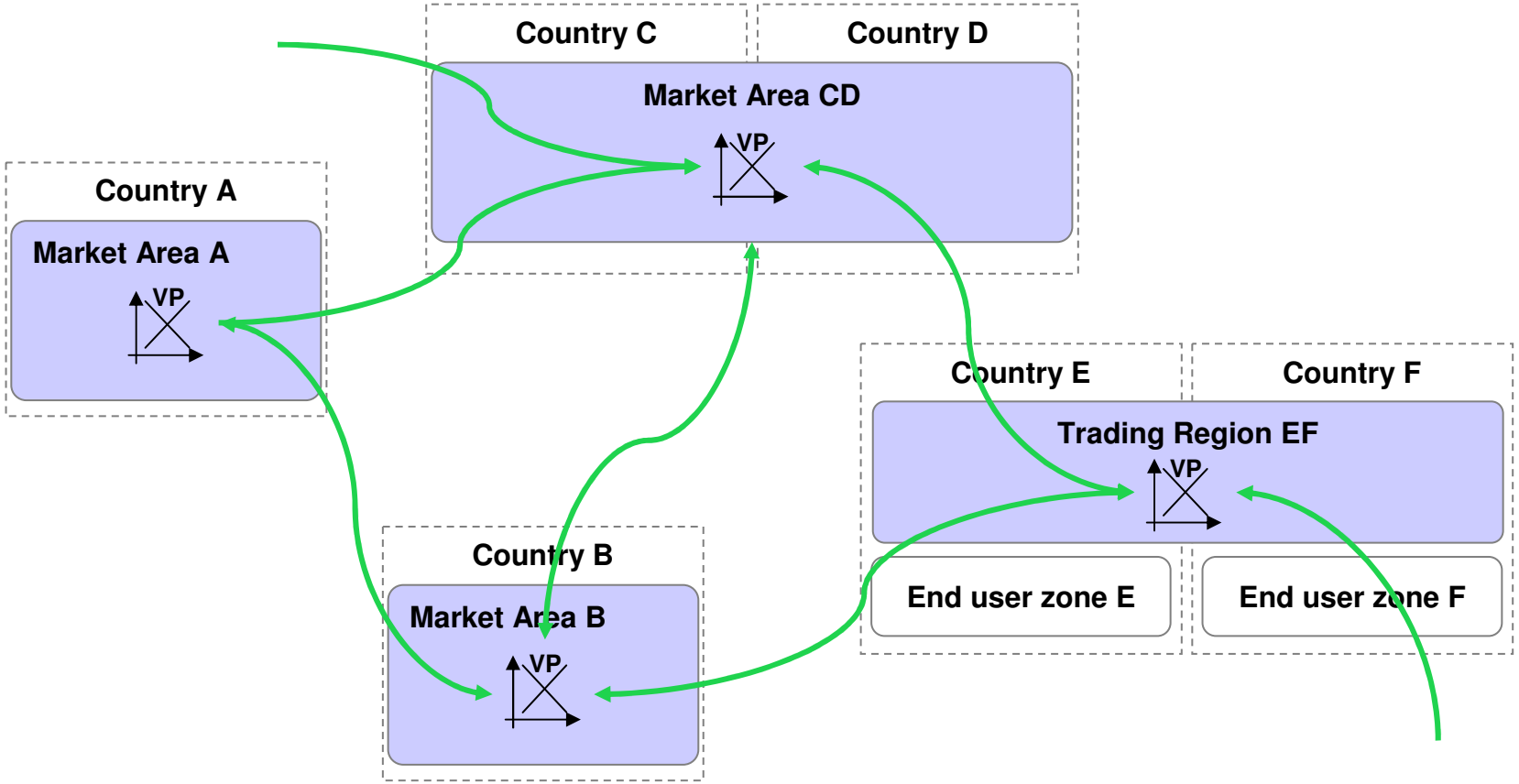
Methods for Connecting Markets in the MECO-S Model



Enhanced Supply and Trading Conditions

- Enhanced supply and trading conditions (ESTC) are a package of measures that would be implemented foremost in the ENTSOG network codes in the areas of
  - **CAM/CMP (e.g. VP2VP (HubtoHub) products, allocation by auctions, coordinated/conditioned auctions for long distance transport ("link chain capacity products"), FCFS for the intra-day market, harmonized contract start dates, standards for secondary capacity trading, …)**
  - **Nomination and balancing (e.g. harmonized gas day, harmonized nomination schedules, allocation by declaration for all nominated points, procurement of system energy (also) at exchanges, …)**
  - **Tariffing (e.g. harmonized dates for change of tariffs, …)**
  - **Gas quality (harmonized quality definitions in order to enable bidirectional physical flows at all border points)**
  - **etc.**
- The details of the ESTC package are still under development.

MECO-S Model: Architecture at Large

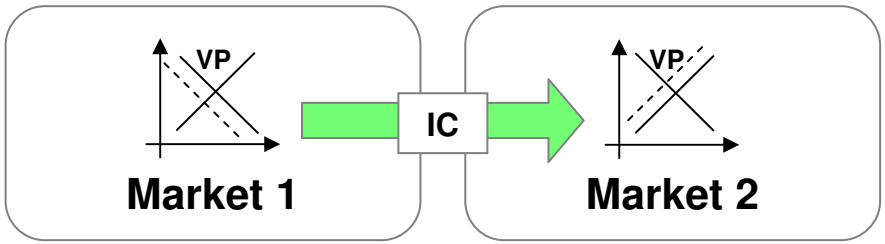


Legend and Symbols

"VP2VP" (also called "Hub to Hub") capacity product

VP Virtual point.

Day-Ahead Market Coupling



- Adjoining day ahead spot markets (organised as exchanges operating on the respective virtual points) are connected by an administrative process in the course of which gas is bought in the cheaper market and sold in the pricier market with the goal of price alignment and within the capacity limits of the interconnection capacity available to the market coupling process.
- Market Coupling may involve more then two member states at once (multilateral market coupling).
- Market Coupling may be organized on the basis of auctioned spot markets or continuously traded spot markets.
- NB: Market Coupling is not synonymous with the limitation of renomination rights. The first is a process of capacity allocation, the latter is a process aiming at increasing the availability of day-ahead capacity. If available day-ahead capacity is not allocated by way of market coupling, it is auctioned off (explicit auction).

Legend and Symbols

IC	Interconnection capacity between markets
	Virtual point of the market

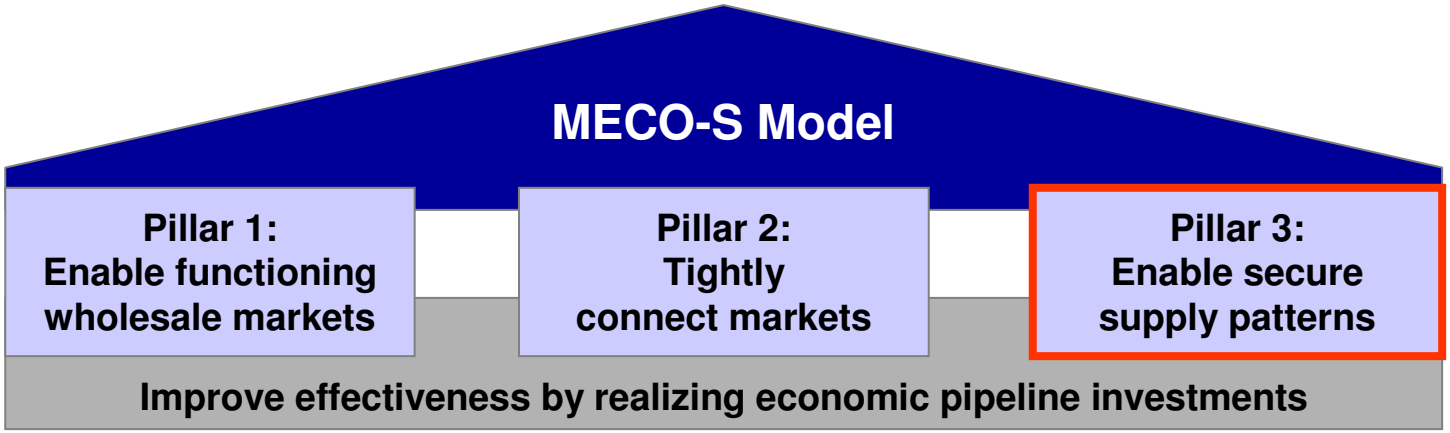
A Note on Corollaries for Network Operators (1)

- The connection methods foreseen in the model involve explicit auctions (and possibly implicit auctions by way of market coupling).
- Auction revenues depend on the demand for a certain capacity and the amount of capacity available.
- Therefore, auction revenues will in most situations deviate from the fixed (regulated) tariffs that would be charged, if there was no auction.
- This can lead to:
  - **Overrecovery (i.e. the auction revenue being higher than the fixed tariff); or**
  - **Underrecovery (i.e. the auction revenue being lower than the fixed tariff; this situation can only occur, if auction minimum prices ("reserve prices") are set lower than the fixed tariff)**
- For dealing with overrecovery, measures are well known.
  - **I.e. setting the overrecovery aside for the relief or removal of congestion or lowering tariffs on other appropriate parts of the same network (or another network within the same market; this would necessitate inter-TSO compensation).**

A Note on Corollaries for Network Operators (2)

- If the discussions about the implementation of the model should lead to situations that potentially can lead to underrecovery (i.e. by setting low reserve prices), measures have to be implemented so that network operators do not suffer from this market design decision.
- Measures for dealing with underrecovery include:
  - **Raising tariffs on appropriate parts of the same network (or another network within the same market, again necessitating inter-TSO compensation)**
  - **Allocating cost to adjoining network operators of the adjoining market, that benefit from the transport (i.e. inter-TSO compensation)**
    - The network operator receiving the cost allocation must be entitled to allocate these cost within his market (esp. to exits).
- These mechanisms can deal with any deviation of auction revenues from fixed tariffs that would be charged otherwise.

MECO-S Model: Pillar 3



Pillar 3: Enable Secure Supply Patterns (1)

- Pillar 3 encompasses measures to enable secure supply patterns by:
  a) **Enabling long-term capacity contracts**
  b) **Foreseeing processes for the allocation of long-distance capacity contracts ("link chain" products)**
  c) **Presenting a concept for realizing international security of supply (as far as pipelines are concerned).**

Pillar 3: Enable Secure Supply Patterns (2)

- Pillar 3 encompasses measures to enable secure supply patterns by:

  a) Enabling long-term capacity contracts

  - Long-term capacity contracts are a necessity to underpin long-term supply contracts.
  - Since the political discussion went pro long-term supply contracts, the target model must also foresee long-term capacity contracts.
  - Therefore, the MECO-S model includes the execution of new long-term capacity contracts by shippers interested in doing so.
  - The model foresees also, that shippers should have the opportunity to acquire these contracts in a “package” that includes capacity rights for the number of years required.
    - This would be opposed to shippers being allowed to book capacity for a long term into the future, but having to bid separately for every single year.

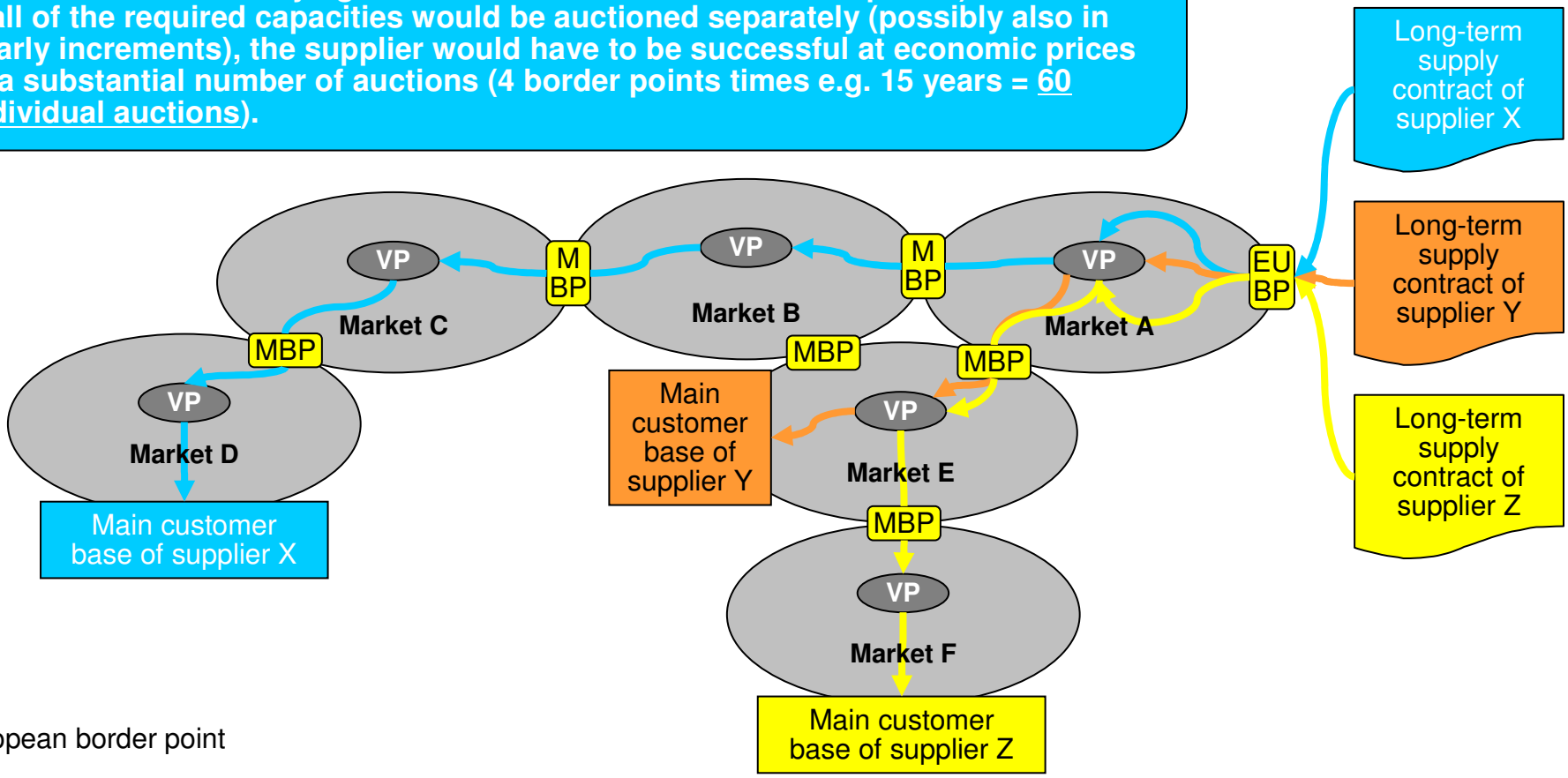
Pillar 3: Enable Secure Supply Patterns (3a)

- Pillar 3 encompasses measures to enable secure supply patterns by:
  - **b) Foreseeing processes for the allocation of long-distance capacity contracts ("link chain" products)**
    - Approximately 30% of gas consumed within the EU crosses more than one border.
    - Separate auctions of cross-border capacity can cause severe problems for potential suppliers of that gas (since they may not get capacity at all relevant points (at economic prices)) or for all years required to e.g. underpin a long-term supply contract.
    - Therefore shippers need to be put into a position to "securely" realize transport of gas across more than one border point.
      - This is of special importance in the context of medium- to long-term supply contracts.
      - Of course, the solution to this problem must not reintroduce captive transport through the back door.
    - A mere time-wise "coordination" of single point auctions (i.e. holding separate auctions at the same time) does not solve the problem (since the results of these auctions would not be linked).
    - To solve the problem, the MECO-S model foresees "link chain capacity products".

→ Continued on next but one chart

The Problem of (Long-Term) Long-Distance Transportation

- **How can e.g. supplier X securely (i.e. for the full duration of his long-term supply contract, e.g. 15 years) transport the gas to his main customer base in market D (of course without denying him access to intermediate virtual points).**
- **If all of the required capacities would be auctioned separately (possibly also in yearly increments), the supplier would have to be successful at economic prices in a substantial number of auctions (4 border points times e.g. 15 years = 60 individual auctions).**



Pillar 3: Enable secure supply patterns (3b)

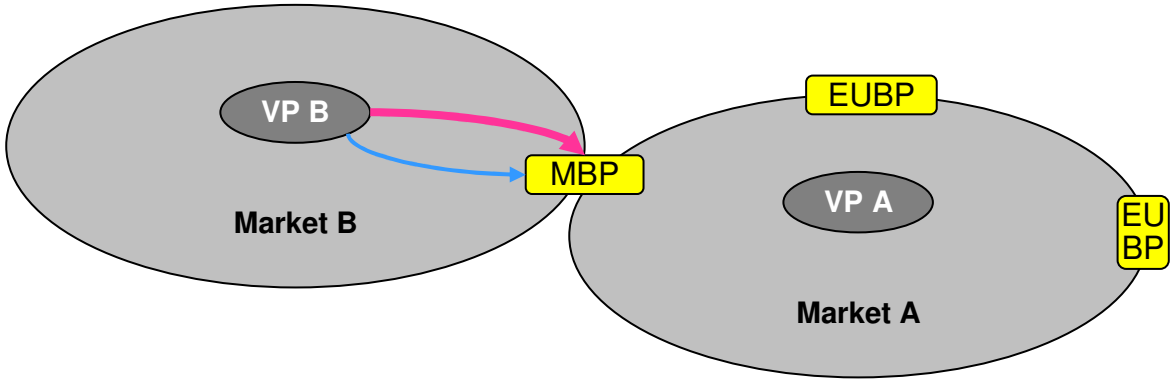
- Pillar 3 encompasses measures to enable secure supply patterns by:
  - **b) Foreseeing processes for the allocation of long-distance capacity contracts ("link chain" products) – Continued from last but one chart**
    - Features of link-chain capacity products:
      - Link-chain products are packages of bundled capacities at different market border points.
      - Link-chain products may be requested for any combination of market border points (as long as they are on a specific route) and also for more than one year.
      - Capacity under a link-chain request is either awarded at the same level of capacity at all requested points and for all requested years or not at all.
        (NB: Shippers may define deviations from that rule acceptable to them with their request.)
      - The capacities awarded under a link-chain capacity product may be used separately, i.e. gas may be dropped and "taken on board" on all virtual points en route.
    - The practical realization of link-chain products will pose serious challenges due to the complexity of combining the requirements of link chain products with auctions of cross-market capacities at individual market border points and of the challenge to incorporate the time dimension ($\rightarrow$ simultaneous selling/auctioning of capacity for different contract tenors).
    - NB: If functioning markets are realized as foreseen in the MECO-S model, the severity of the problem is reduced, because the number of cross-market points would be greatly reduced.

Pillar 3: Enable Secure Supply Patterns (4)

- Pillar 3 encompasses measures to enable secure supply patterns by:
  - c) **Presenting a concept for realizing international security of supply (as far as pipelines are concerned).**
    - The “SOS”-Regulation 994/2010 implements the n-1 standard for transport infrastructure*, but includes little concrete provisions about its implementation, if more then one member state is involved.
    - In this case the security needs of one member state (A) may create cost in one or more other member state(s) (e.g. B). These cost need to be covered by the beneficiary (A).
    - This situation may not only arise in case new investment is required in order to fulfil the n-1 standard but also when it comes to holding existing capacity available for the benefit of another member state.
    - If both TSOs are located within one market (market area or trading region), the issue should be handled by inter-TSO compensation (based on a custom contract).
    - If the TSOs are in different markets with bookable capacity in-between, the situation can be handled by the concept of the “fallback capacity contract”.

* With exceptions.

The Concept of the Fallback Capacity Contract for International Transport Security of Supply



- TSO A from market A books (based on a request by a competent national authority) long-term firm exit capacity from VP B to act as a fallback supply route in case not enough gas can be delivered through the EUBPs leading to market A.
- The contract would oblige TSO B to (create and/or) maintain the booked capacity from the hub in his market* whether it is booked by shippers or not.
- TSO A pays TSO B for the capacity booked under the fallback contract minus the capacity on the same route that is booked by shippers (on the basis of the regulated tariff of TSO B). I.e. TSO A would pay for the “redundant” part of that capacity.
- The extra cost TSO A takes on are considered in the cost allocation / tariff calculation in market A so that TSO A suffers no negative impact from booking the fallback capacity.

Fallback contract (booked by TSO A in Country A)

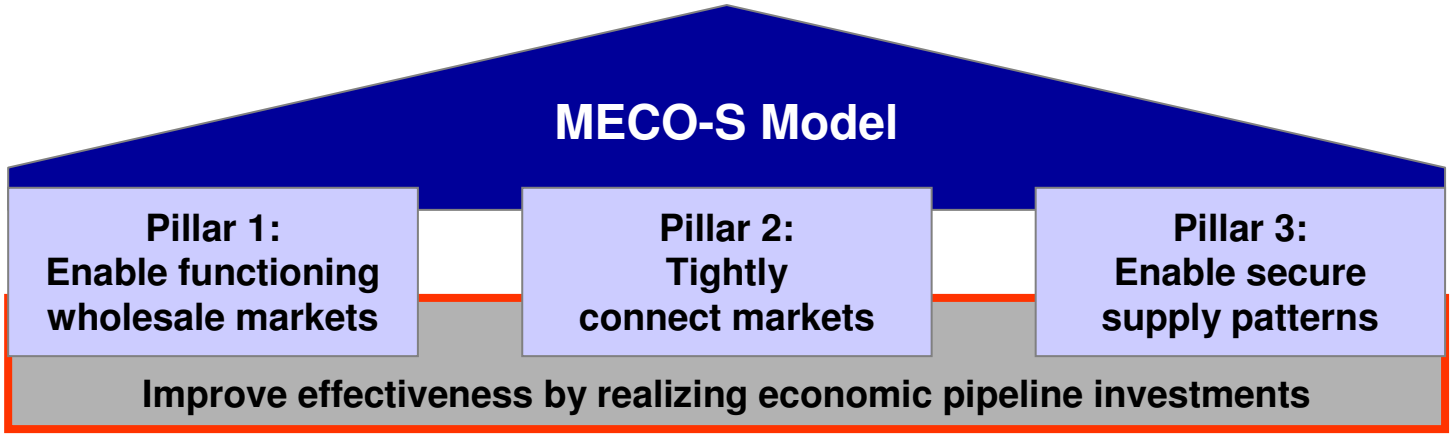
Transport contract booked by shipper

MBP Market border point

EU BP European border point

* or even from another hub, then this would include several TSOs

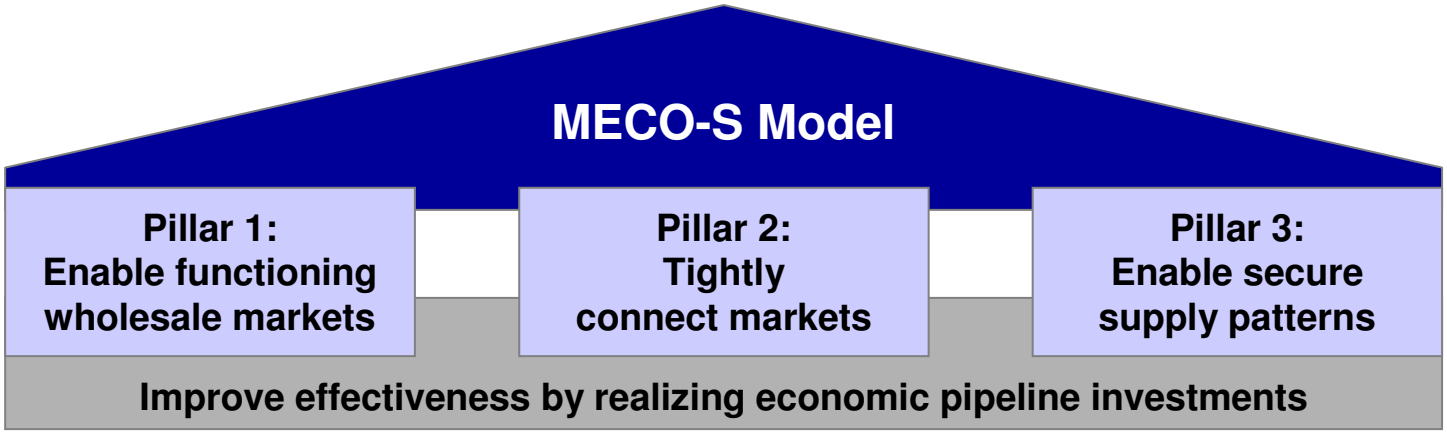
MECO-S Model: Common Foundation



Foundation: Improve Effectiveness by Realizing Economic Investments

- The MECO-S model includes hints for structuring two types of investment decisions:
  - **Investment to connect gas markets with each other ("interconnection")**
  - **Investment to overcome congestion within a gas market ("intraconnection")**
- Both types of investment decisions are relevant to the pillars of the MECO-S model, since they can contribute especially to:
  - **The creation of functioning markets**
  - **The connection of markets**
- The proposals will be centred around:
  - **Interconnection investments:**
    - Open seasons
    - Pre-set evaluation criteria for the acceptance of bids and for investment decisions
    - Potentially: Alternative/supplementary evaluation for certain kinds of investment based on expected welfare gains (→ based on the expected reduction of locational price spreads)
  - **Intraconnection investments:**
    - Evaluation of investment spending against saved "congestion cost" (→ redispatch cost caused by the use of system energy, flow commitments, etc.)

The MECO-S Model



MECO-S Model: Benefits

Once the MECO-S Model is implemented:

- **All European final customers will be served from a functioning wholesale market.**
  - These functioning wholesales markets will act as enablers and fertilizers for retail competition because they provide easy access to competitively priced gas and are the basis for proper risk management.
- **Capacity between those functioning markets will be used as good as possible leading to improved price alignment between the markets.**
  - This will maximize efficiency and thereby public welfare in / from supply & trading on a European scale by making sure that all gas assets (procurement contracts, storage, …) are used in the most economic manner.
- **Secure supply patterns (long-term and also long-distance) can (still) be realized in the entry-/exit world.**
- **International security of supply (transport) is put on stable feet by securing its finance.**
- **Economic investments in pipeline infrastructure will be realized (better).**