

# Target Model for Interregional Congestion Management

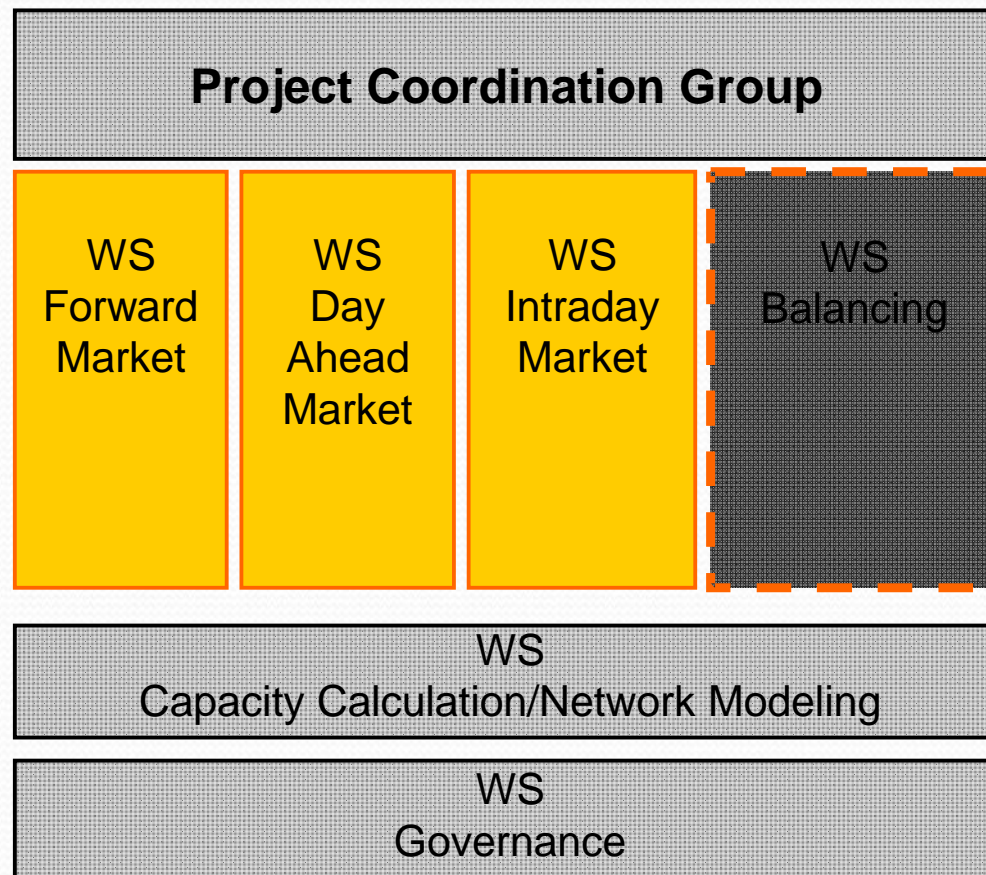
The Project Coordination Group



# Assignment from June Forum

- Ø The Forum encouraged PCG
  - Ø to finalise the generic target model and
  - Ø to prepare in cooperation with ERGEG ERI a roadmap including a concrete action plan on the regional and inter-regional implementation for the target model
- Ø PCG will keep the Forum informed at the occasion of its next meeting in December 2009 on the outcome of its work.

# Working Structure





# Target model for forwards market

Ø TSOs shall sell 100% of forecast available capacity forward in line with forward energy market horizons

Ø TSOs shall sell transmission as Financial Transmission Rights (FTRs) or as Physical Transmission Rights (PTRs) with Use-it-or-Sell It (UIOSI) provisions

Ø TSOs can sell rights between bidding areas or between a reference system area and a bidding area

Ø TSOs should sell PTRs options and FTRs either as options or obligations (e.g. CfDs)

100% PTR

100% FTR



# A secondary market a high priority

- Ø A secondary market for trading transmission capacity rights is a high priority
- Ø Secondary market allows capacity holdings to be (re)optimised in forward market timescales
- Ø Market should be able to freely aggregate/disaggregate capacity (down to individual hours and 1 MW units)
- Ø Trading should be possible until the nomination deadline (for PTRs) or D-1 gate closure (for FTRs)

# Arrangements for secondary markets

- Ø TSOs must operate a registry of rights holdings (at least for PTRs, third-party provision is possible for FTRs)
- Ø Credit and transfer approval by TSO at time of trade (such technology is already widely available and used for trading energy)
- Ø Independent platforms can be used to establish such a service, e.g. by using auction offices
- Ø Exchanges and clearing houses can also offer clearing service to facilitate credit risk management

# Financial firmness is essential

- Ø Financial firmness of capacity rights is essential for efficient secondary markets
- Ø Transmission capacity needs to be (financially) firm in order to hedge cross-border positions
- Ø Firmness facilitates efficient retrading on standard terms without burden of title tracking/reassignment
- Ø Compensation for capacity curtailment needs to be market-spread based, predictable and standardized
  - Ø A standardized European definition of force majeure is required
- Ø The costs of guaranteeing firmness should be met from TSOs allowed revenues (with appropriate incentives)



# Implementation Roadmap

- Ø Implementation across Europe as soon as possible and by 2015 at the latest either through:
  - Ø Implementation of UIOSI principle where PTRs are in place
  - Ø Implementation of FTRs issued by the TSOs
- Ø Key criteria for successful implementation
  - Ø Forward sale of all capacity
  - Ø Reliable and robust day ahead spot market prices
- Ø These two criteria may conflict
  - Ø If TSOs sell all capacity forward as PTRs, concerns of insufficient capacity to allow robust day ahead prices; but
  - Ø If TSOs don't sell sufficient forward capacity, scope for competition across Europe's borders is decreased



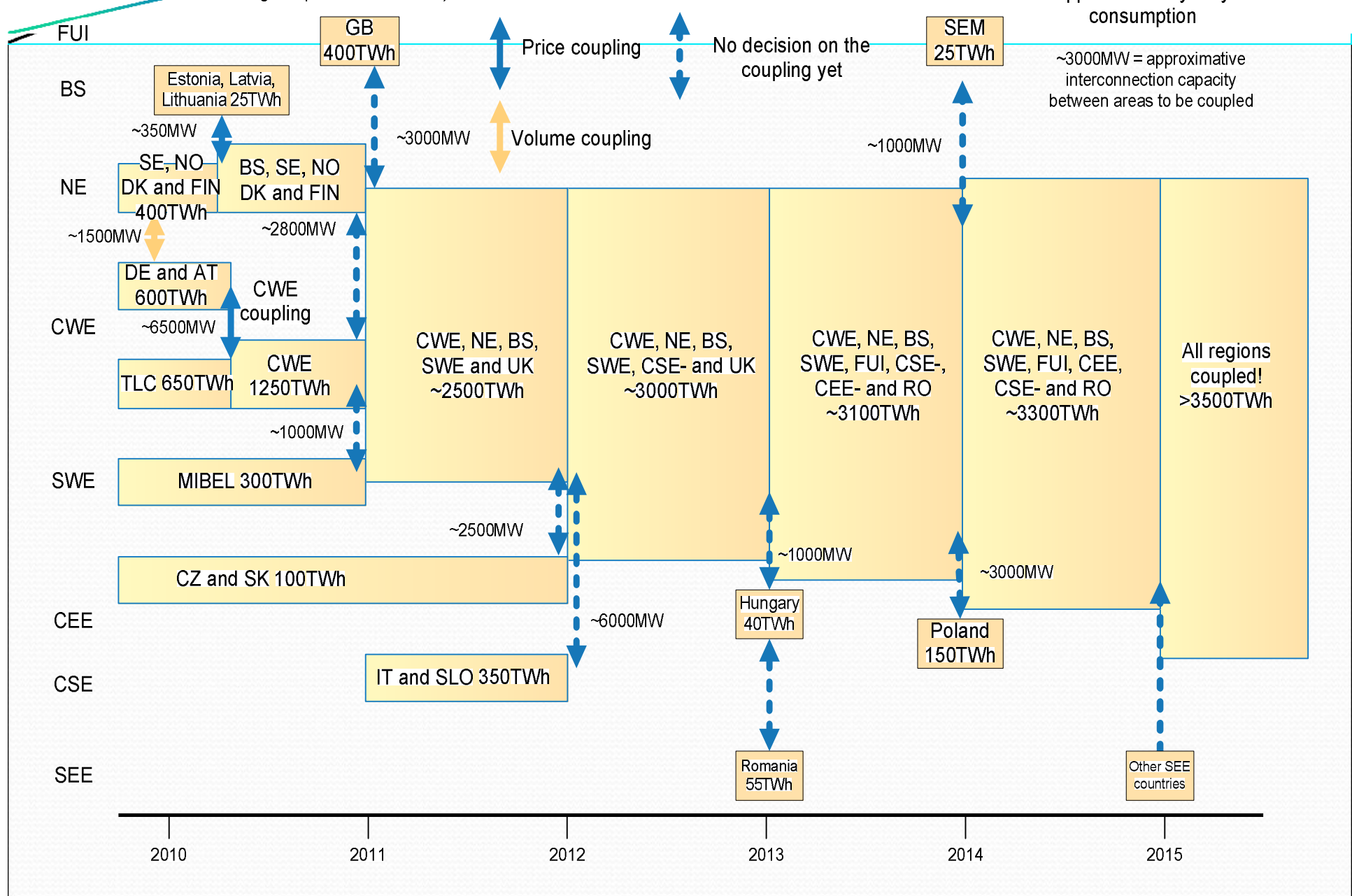


# Day-Ahead Market

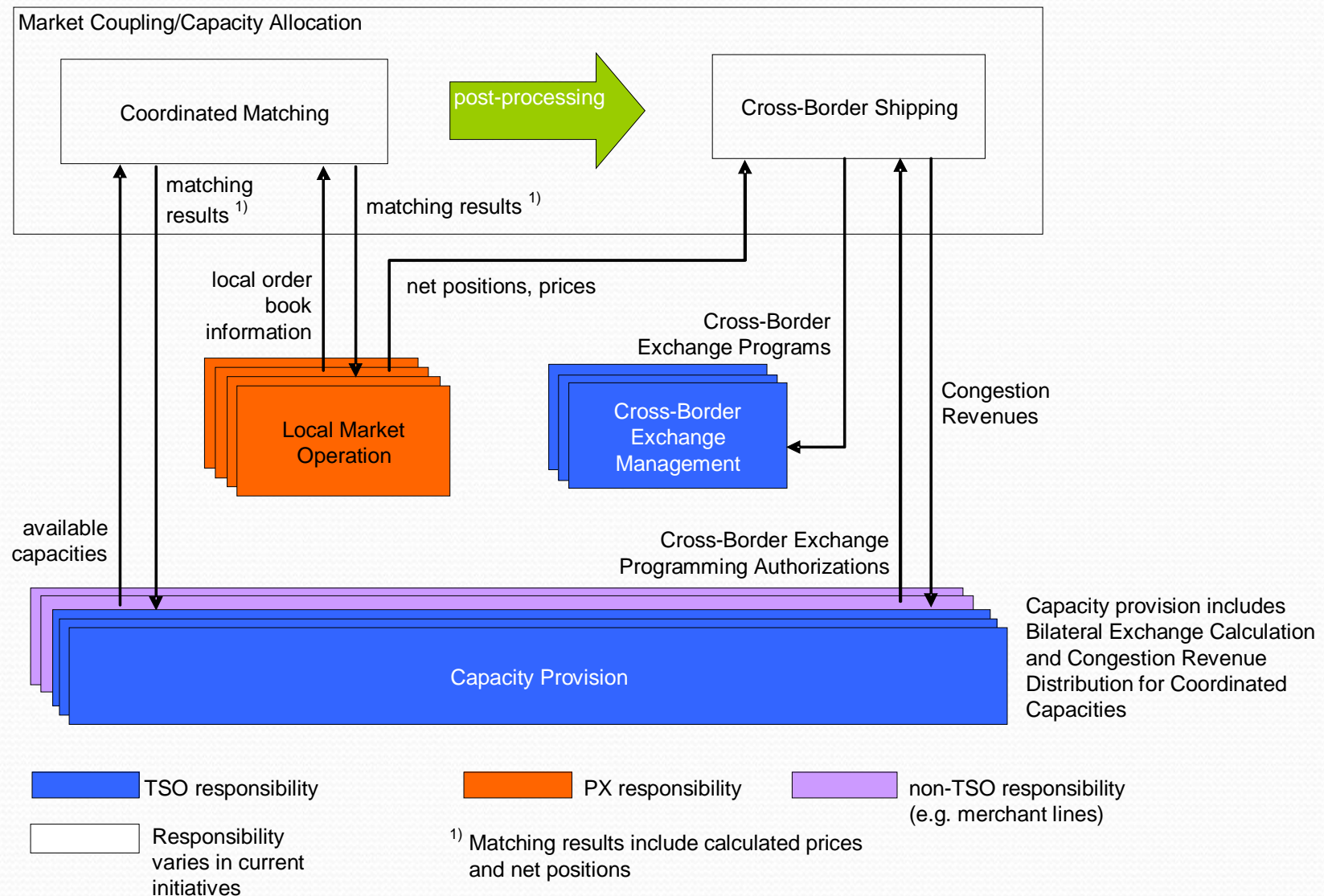
- Ø The target model for the day-ahead capacity allocation and congestion management by 2015 is single price coupling
- Ø The requirements for single price coupling include
  - Ø Use of a single pricing algorithm
  - Ø Harmonized gate closure times
  - Ø Sharing of all bid data between PEXs
  - Ø Compatible bids/products
- Ø The day-ahead market establishes a reference price for transmission rights with financial settlement and financial contracts

## Possible sequence of European market coupling

(Please note that the sequence and timing is only indicative and does not represent any agreed position of the PCG)



# Functions of Single Price Coupling





# Requirements for coordinated matching

- Ø Sustainability - enable the achievement of an European wide solution
  - Ø The scope and pace of geographical extension
  - Ø Openness (easiness of entering or leaving the arrangement), non-TSO capacity
  - Ø Compliance with market needs
- Ø Level of subsidiarity (does not impose unnecessary changes at local level)
- Ø Timely, good quality, fair and transparent decision making/dispute resolution
- Ø Transparency of coordinated matching

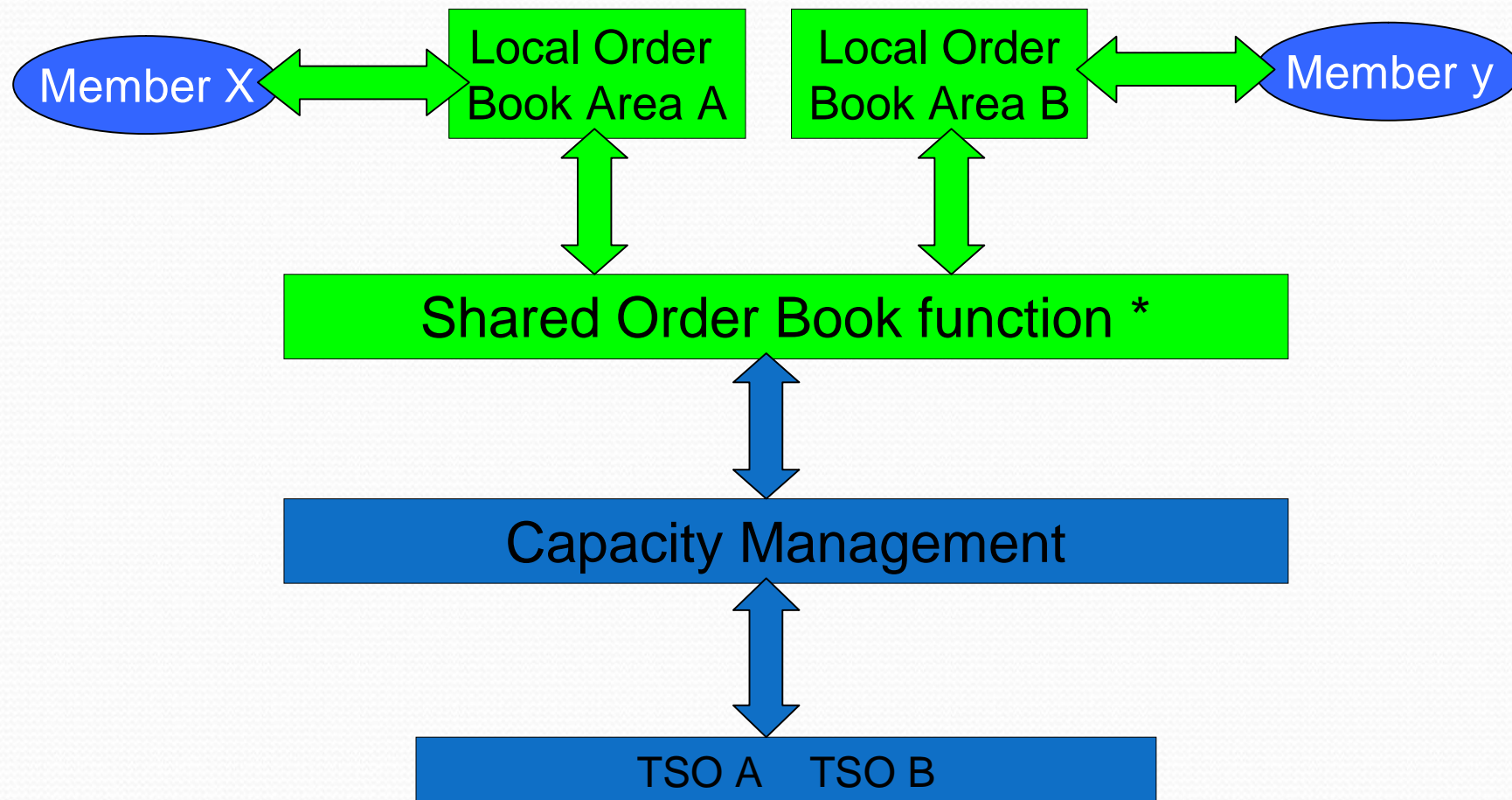
One of the main challenges in the further work is to find a governance solution for coordinated matching

# Intraday market

- Ø Target model for Inter-Regional Cross-Border capacity allocation in the intraday (ID) timeframe is implicit continuous allocation (continuous trading)
- Ø Where appropriate, specific National/Regional ID trading solutions may be developed
- Ø A specific National/Regional ID trading solution is not obligatory. Inter-Regional Target Model mechanism can be used as the National/Regional solution
- Ø Any specific National/Regional ID trading solution must be compatible with the Inter-Regional Target Model

# Target Model for Inter-Regional XB

## Intraday capacity allocation



\* Role of the shared Order Book function is to make Bids in Local order book A available in Local order book B, subject to the availability of cross-border capacity



# Features of the ID Target Model

- Ø Target Model must allow block bids
  - Ø Users will therefore be able to execute through the platform deals which would otherwise be concluded on a bilateral basis
- Ø When significant additional capacity becomes available this capacity should be allocated using a market based mechanism
  - Ø The definition of significant additional capacity will have to be developed
  - Ø There are several possible market based mechanisms to allocate significant additional capacity (e.g. auctions)

# Roadmap

	Description	2010	2011	2012	2013	2014	2015
Stage 1	Common principles + compatibility Requirements for ID trading	■					
Stage 2	Centralized capacity management and shared order book function	■	■				
Stage 3	ID National/Regional development°		■	■	■	■	
Stage 4	Stepwise implementation of TM			■	■	■	■
End	EU wide trade (target model)						■

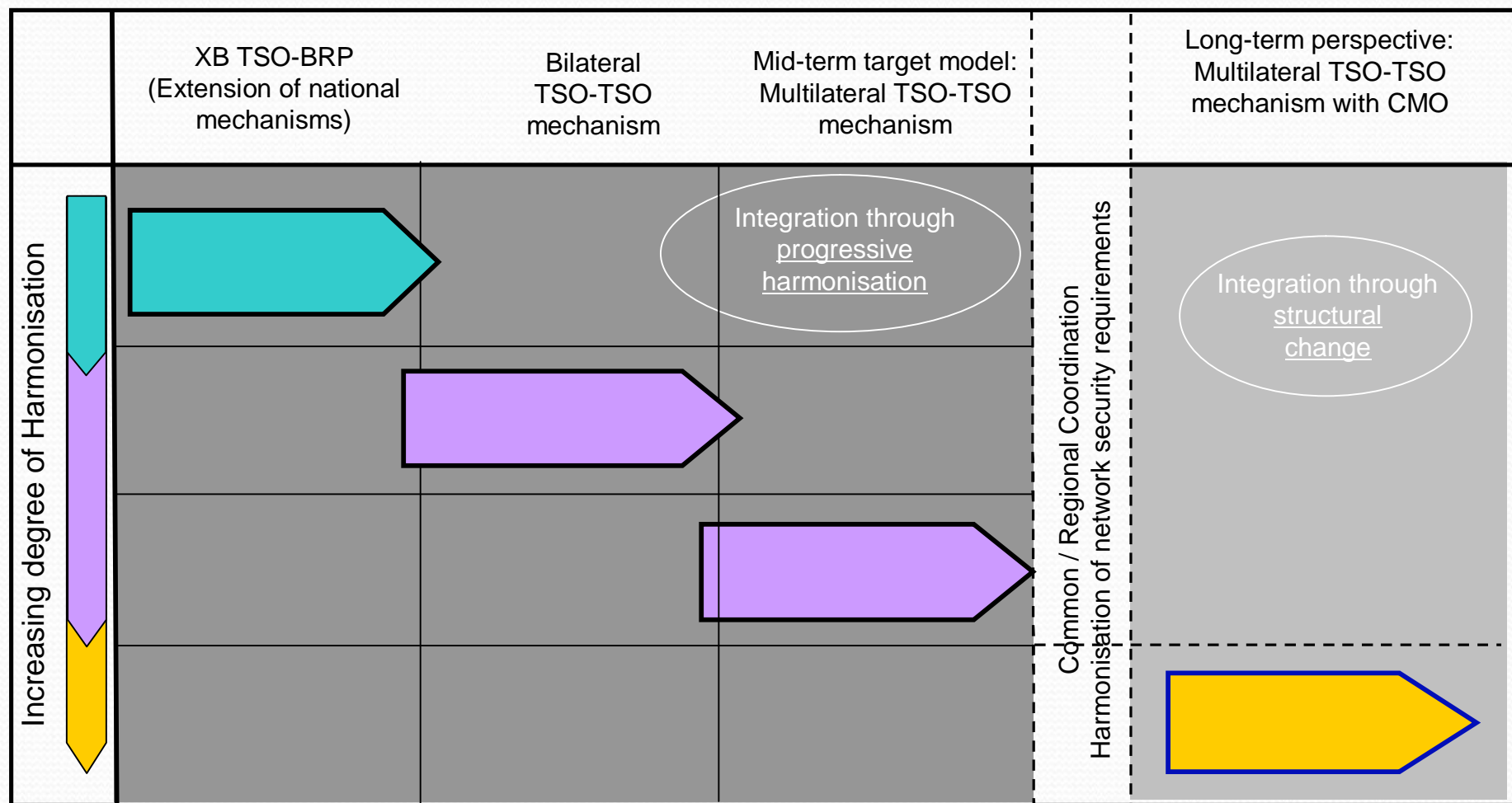
°new development or copy/paste

# Balancing market

- Ø Focus is manually activated reserves
- Ø Full harmonisation of balancing markets is not a prerequisite for cross-border balancing
- Ø Pragmatic approach is important
- Ø Major steps:
  - Ø Pilot projects
  - Ø Harmonisation of gate closures and technical characteristics (+ roles and responsibilities of all major parties)
  - Ø Introduction of cross-border intraday gives support
  - Ø Case by case (in a feasible "area") development of multiple TSO cooperation (ending in coordinated system operation)



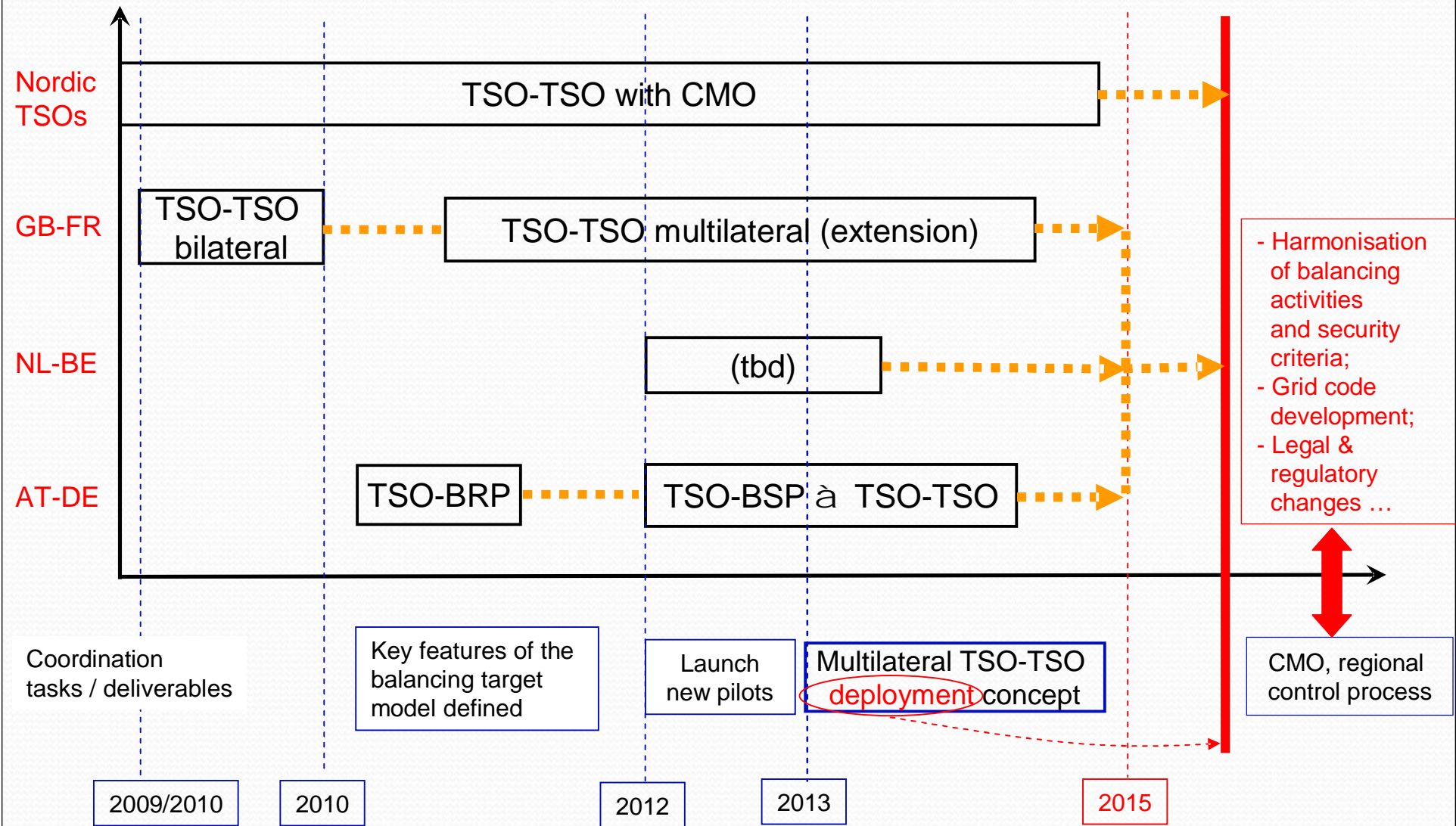
# Proposed Roadmap for the Cross-Border Integration of Electricity Balancing Markets



Legend:    *XB = cross-border*  
               *BRP = Balance Responsible Party*  
               *CMO = Common Merit Order*

# Implementation Details

- Most pilots already exist
- Starting point is different
- Pilots could hook up to others
- May result in areas that will combine
- Timing is indicative



# Capacity Calculation

## Ø Objectives:

- Ø Having harmonised coordinated capacity calculation methodologies amongst European TSOs.
- Ø Having harmonised standards regarding necessary information and information exchange amongst TSOs, generators and traders.
- Ø Providing for each time horizon the maximum possible capacities to the market by respecting TSOs security standards.

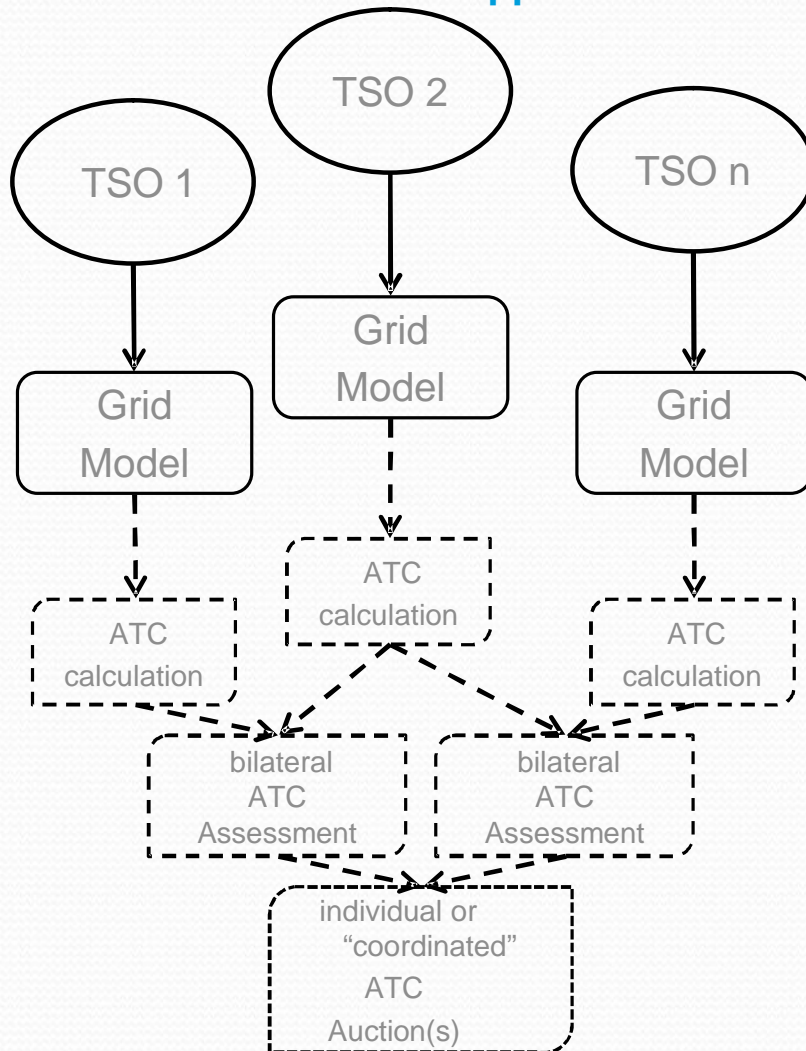
## Ø Target Model:

- Ø Target Model is aimed at elaborating a common grid model moving towards day-ahead and intraday flow based capacity determination, subject to proven benefits

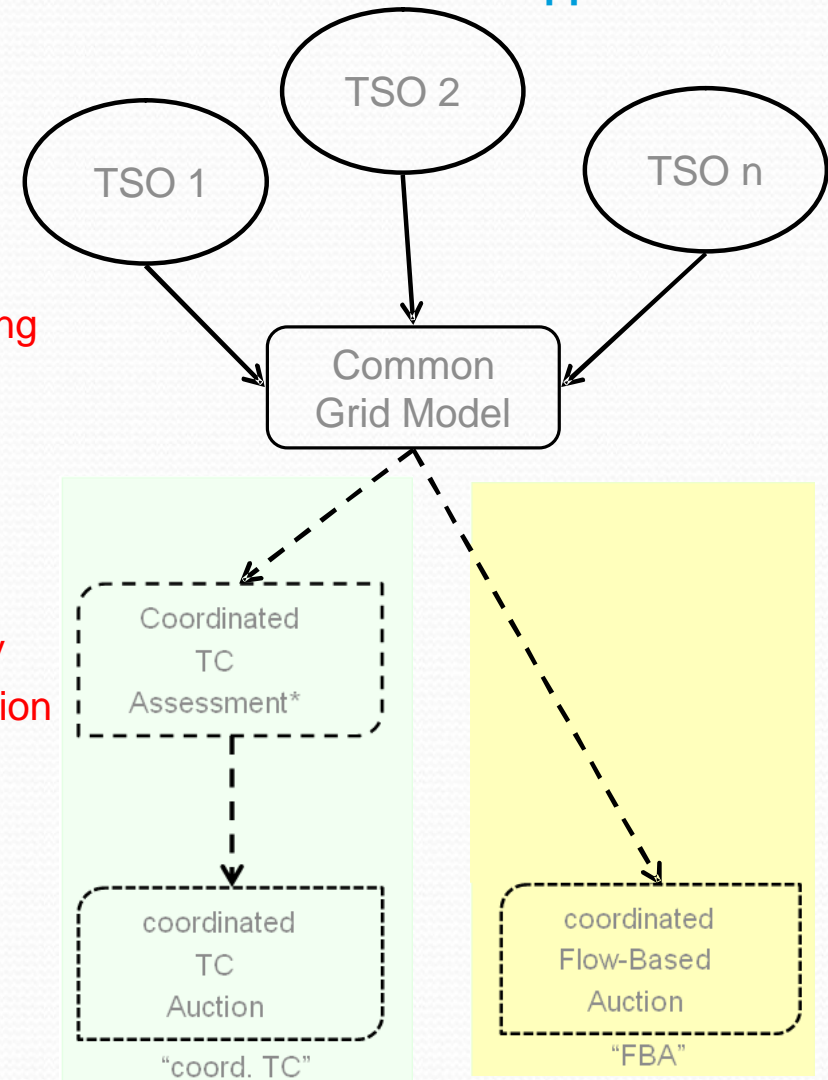


# Main difference between bilateral NTC approach and FBA/coordinated TC approach

Bilateral NTC approach



FBA/ coordinated TC approach



Grid Modeling

Capacity Determination

Auction

\* "Allocation" of capacities to certain borders by TSOs.



# Increased level of coordination

- Ø Target model leads to increased level of coordination and cooperation
- Ø Establishment of a European-wide common grid model (EU-CGM), consisting of the same level of information, implies
  - Ø Coordinated RM (reliability assessment) based on the EU-CGM
  - Ø Coordinated security analysis (capacity assessment) based on the EU-CGM
  - Ø Coordinated curative redispatch measures based on a EU-CGM to ensure firmness
  - Ø Transparent calculation methodologies and results to be made public



# Next steps for capacity calculation

- Design
  - Design of a Common Grid Model (CGM)
  - Coordinated capacity assessment and/or flow-based allocation
  - Regional application of coordinated capacity assessment and/or flow-based allocation
  - Interregional application of coordinated capacity assessment and/or flow-based allocation
- A project to be led by ENTSO-E is needed to undertake the design and the following implementation
  - Transparency needed for the capacity calculation process
  - To ensure transparency towards market stakeholders in the project and to guarantee that regulatory and market requirements are adequately considered under the condition of safeguarding security of supply
- It is proposed to set up a project structure in beginning of 2010 fully including stakeholders with the task of steering/monitoring the project,, CGM and coordinated capacity assessment rules to be tackled first



## Concluding remarks (1/2)

- Ø Positive experience: PCG has contributed to a wide understanding of the issues of capacity allocation and congestion management and provided widely agreed propositions amongst stakeholders on the solutions
- Ø 3<sup>rd</sup> package framework: ERGEG to continue preparation of input to framework guideline on capacity allocation and congestion management
  - Ø Feed into the process the PCG's propositions on the target model, as needed
  - Ø Will apply IA process (involvement of stakeholders, public consultation)
  - Ø Will use an ad hoc advisory group of ERGEG

## Concluding remarks (2/2)

- Ø Keep the good momentum: It is important to support the efforts to couple the markets and ensure that work continues at a regional/inter-regional level
- Ø Individual projects needed to continue design work: stemming from PCG and in line with EC priorities, e.g. in areas of
  - Ø Capacity Calculation/Common grid model
  - Ø DA capacity allocation and governance
  - Ø European continuous ID trading platform