



4M Market Coupling overview

April 2017

Introduction

What is 4M MC?

- Day-ahead ATC based price coupling covering Czech-Slovak-Hungarian-Romanian market areas

What are the main goals?

- Introducing the benefits of market integration to market participants using the stepwise market integration
- Be prepared for joining the Single Day-Ahead Coupling by implementing solution according to regulation CACM.

4M MC stepwise integration

2012




- 3M MC project integrating Czech-Slovak-Hungary market areas

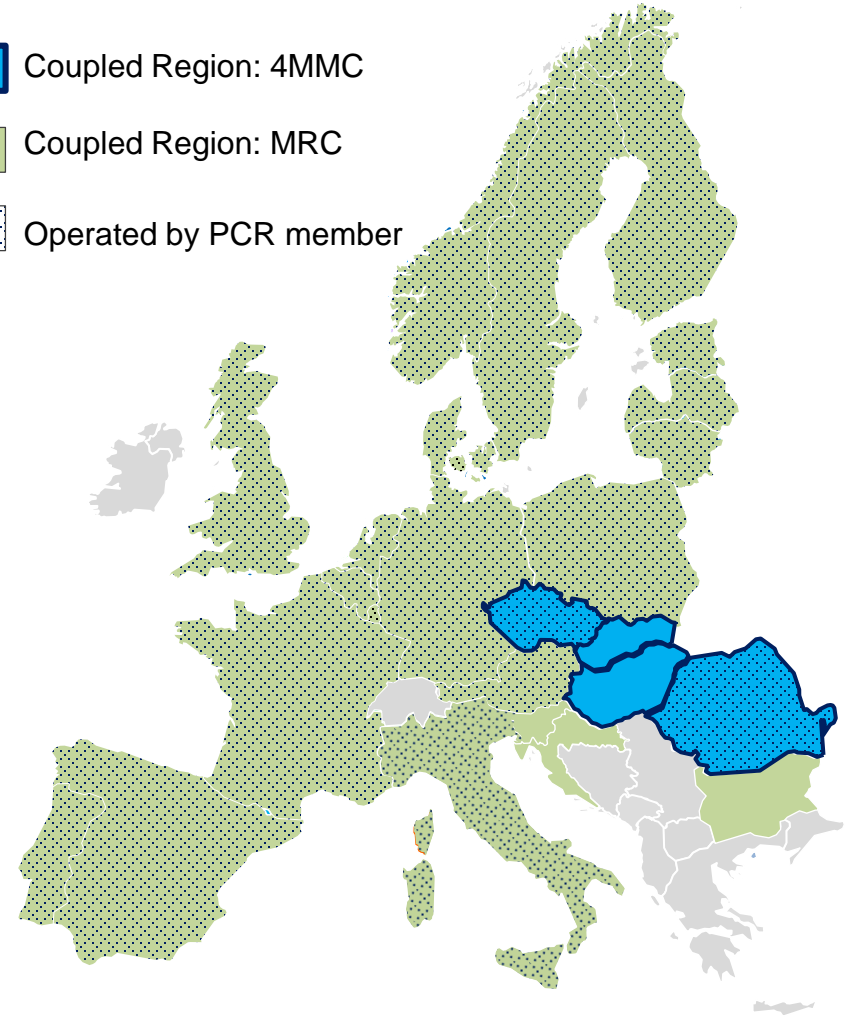
2014

- Launch of the 4M MC Project – ATC-based market coupling using the PCR solution

Future

- Further steps towards the Single Day-Ahead Coupling implementing solution as defined by regulation CACM

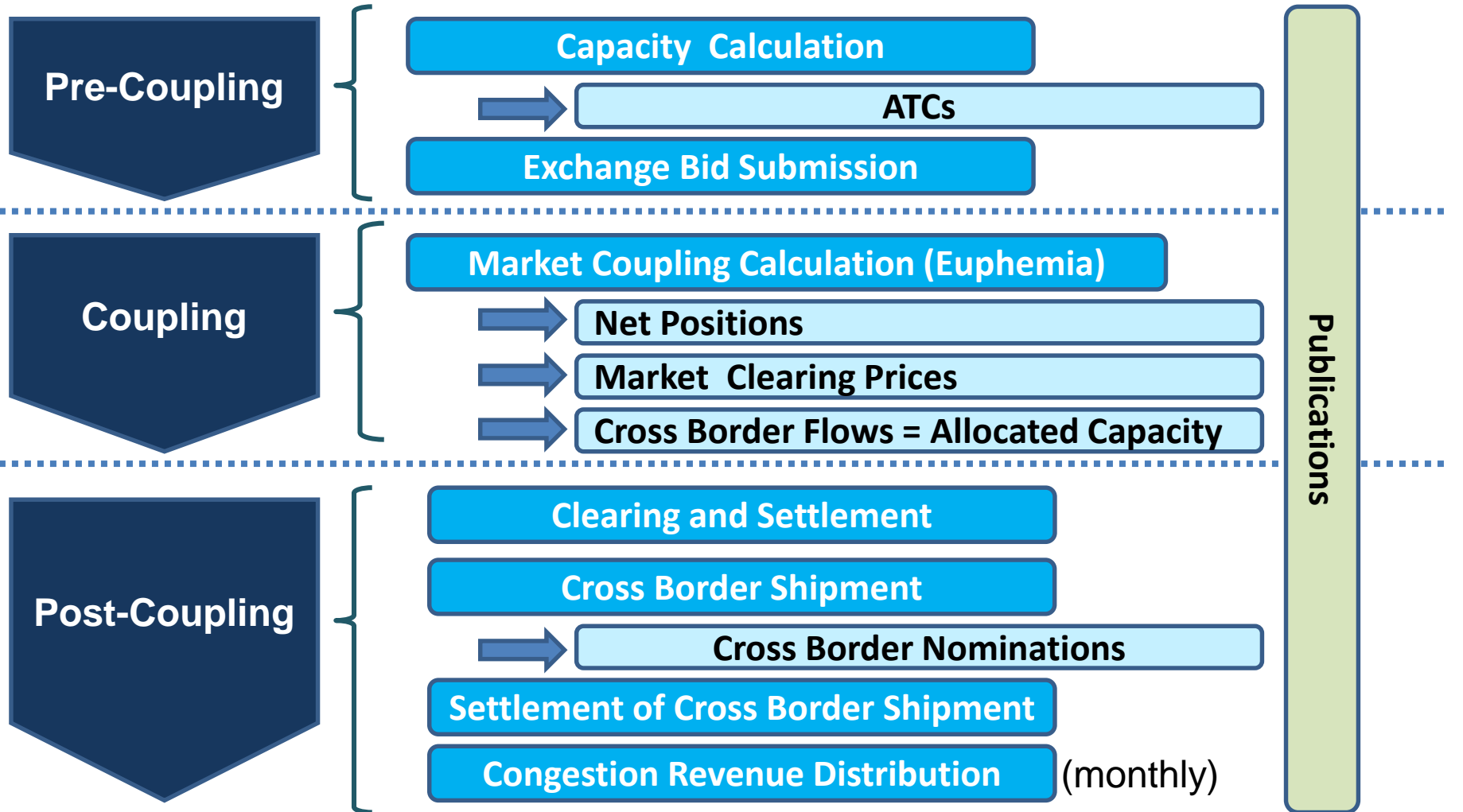
-  Coupled Region: 4MMC
-  Coupled Region: MRC
-  Operated by PCR member



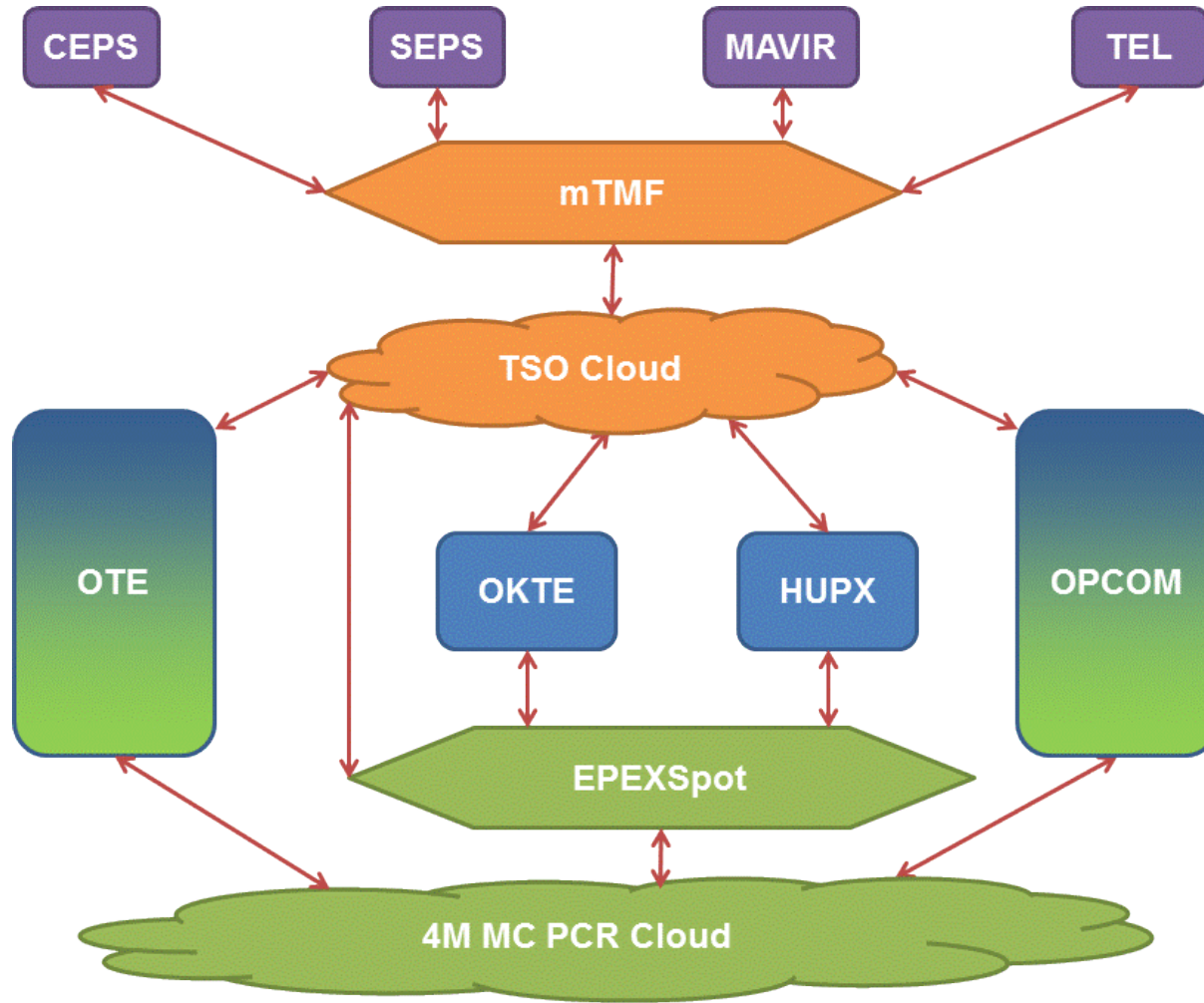
Market characteristics

Parameter	Value
Time zone	CET
Standard Publication of Capacities	9:15 (by TSOs) 9:30 (by NEMOs)
Deadline for modification of capacities	10:30
Gate Closure Time	11:00
Standard Publication of Results by PXs	11:40
Standard Publication of Results by TSOs	Tp + 5 minutes
Nomination Deadline	14:30
Cross-border Flow decimals	One digit (0.1 MW)
Price decimals	Two digits (0.01€/MWh)
Min/Max prices	€/MWh -500/+3000
Second Auction Trigger	€/MWh -150/+500
Volume Tick size	One digit (0.1 MW)
Price Tick size	Two digits (0.01 €/MWh)

Market Coupling Session



4M MC Technical Solution



NEMO's technical solution

- PCR based solution fully in line with the European target model
 - 2 Full PCR Members (OTE, OPCOM)
 - 2 Serviced NEMOs (OKTE, HUPX) by EPEX SpotIn operation OTE, OPCOM and EPEX Spot act as Coordinator in rotation.
- PCR solution is an important step forward for further integration:
 - implemented interfaces can be reused with further extensions
 - coupling procedure principles compatible with MRC
 - IT solution substantially same as in MRC

TSO's technical solution

- Equal status of all connected TSOs
- The only TSO platform (no rotation, simple contract)
- Allows easy changing of NEMO roles (Coordinator/Non-Coordinator) via TSO Cloud interface system being a single point of contact on behalf of TSO systems towards NEMO side
- *mTMF* and *TSO Cloud* systems are easily extendable
 - Unlimited number of TSOs and NEMOs
 - extension of the system with almost no costs