



4M Market Coupling Project overview

29 April 2014

4M Market Coupling Project

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



- **Members:**
CZ-SK-HU-RO TSOs & PXs & NRAs
- **Observers:** Polish TSO & PX & NRA

Project goals

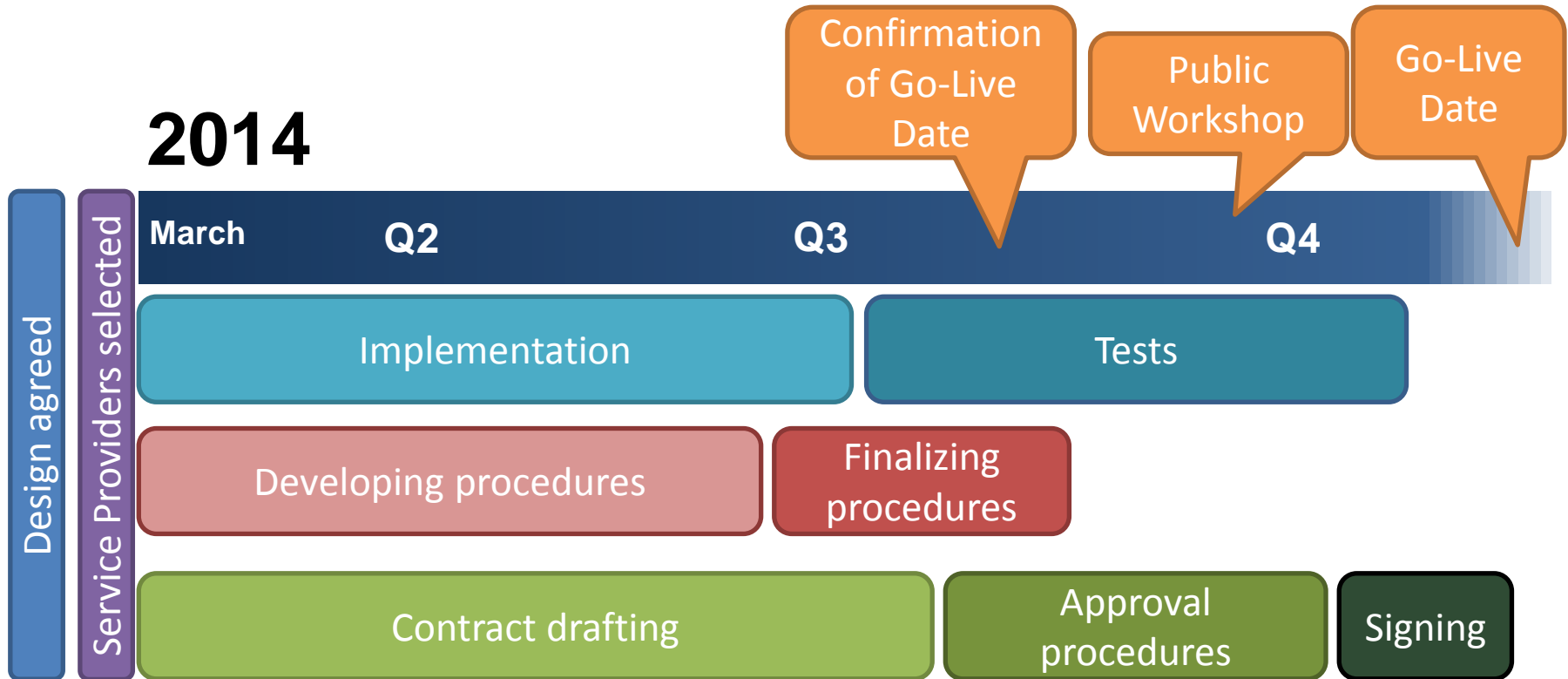
Main goals:

- Extension of CZ-SK-HU MC to Romania
- 4M countries wish to introduce benefits of market integration to market participants as soon as possible
- Get prepared for joining European Price Coupling – implement MC based on PCR solution

Context:

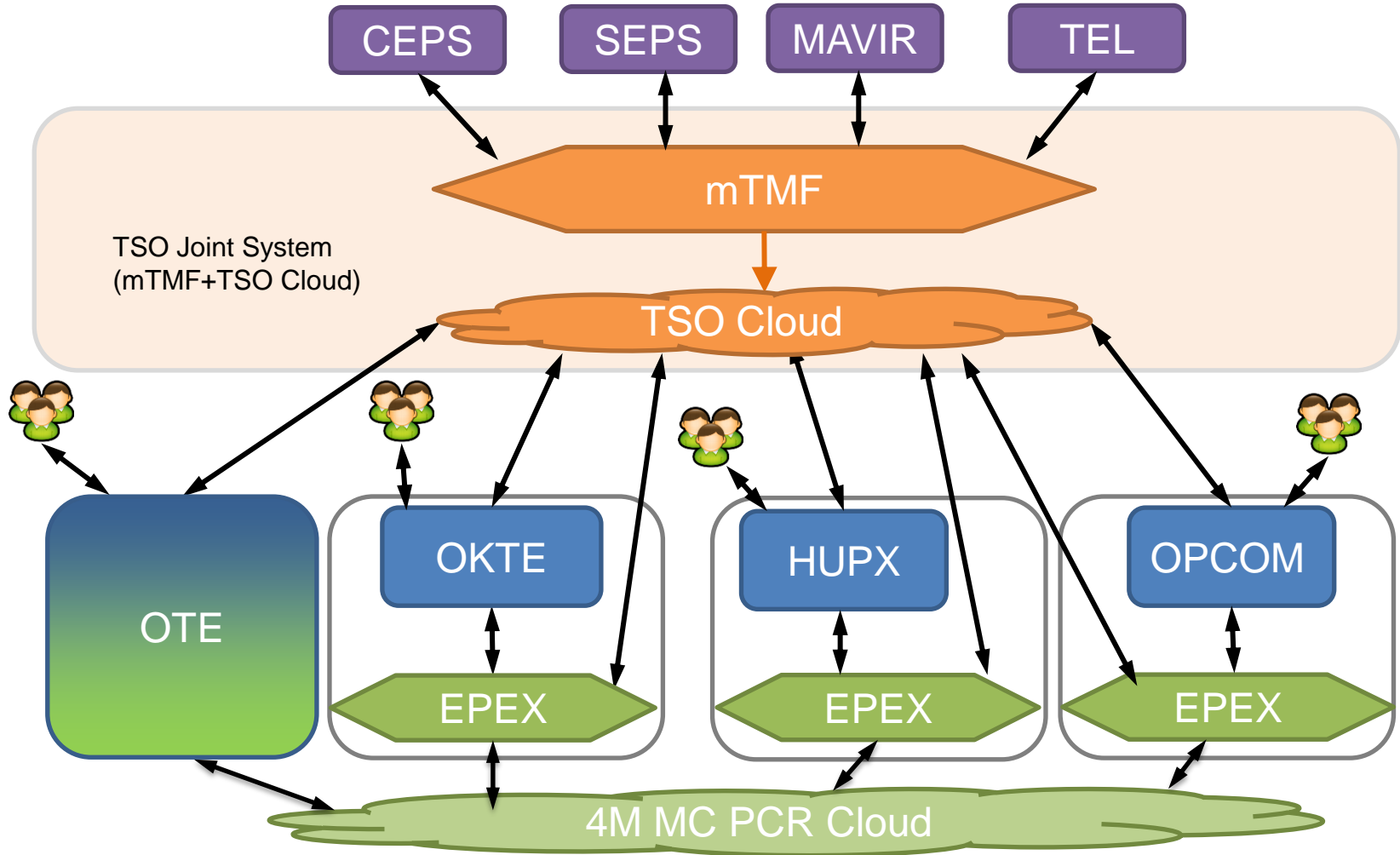
- Stepwise market integration is the only way forward due to a **blocked situation and slow progress in the CEE region**
 - Flow-based capacity calculation methodology
 - Overlapping regions and other integration activities
- CEE regional solution is not agreed yet
- The extension does not hinder the regional development as it is an intermediate step towards European Price Coupling

General milestones, project plan & Go-Live Date



- Planned go-live is 11 November 2014
- Date will be confirmed in August 2014
- Coordinated workshops for market participants in September

4M MC topology



PX technical solution

- PCR implementation fully in line with the target model
 - 1 Full PCR Member (OTE)
 - 3 Serviced PXs (OKTE, HUPX, OPCOM) by EPEX SpotIn operation OTE 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 procedures compatible with NWE/SWE (except timing)
 - PCR IT solution same as in NWE/SWE
 - under implementation in CSE
 - already running in NWE/SWE regions

Harmonisation of market characteristics

Parameter	Value*
Time zone	CET
Standard Publication of Capacities	9:15 (by TSOs) 9:30 (by PXs)
Deadline for modification of capacities	10:30
Gate Closure Time	11:00
Standard Publication of Results by PXs** (Publication Time: T_p)	11:30-40
Standard Publication of Results by TSOs	$T_p + 5$ 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)

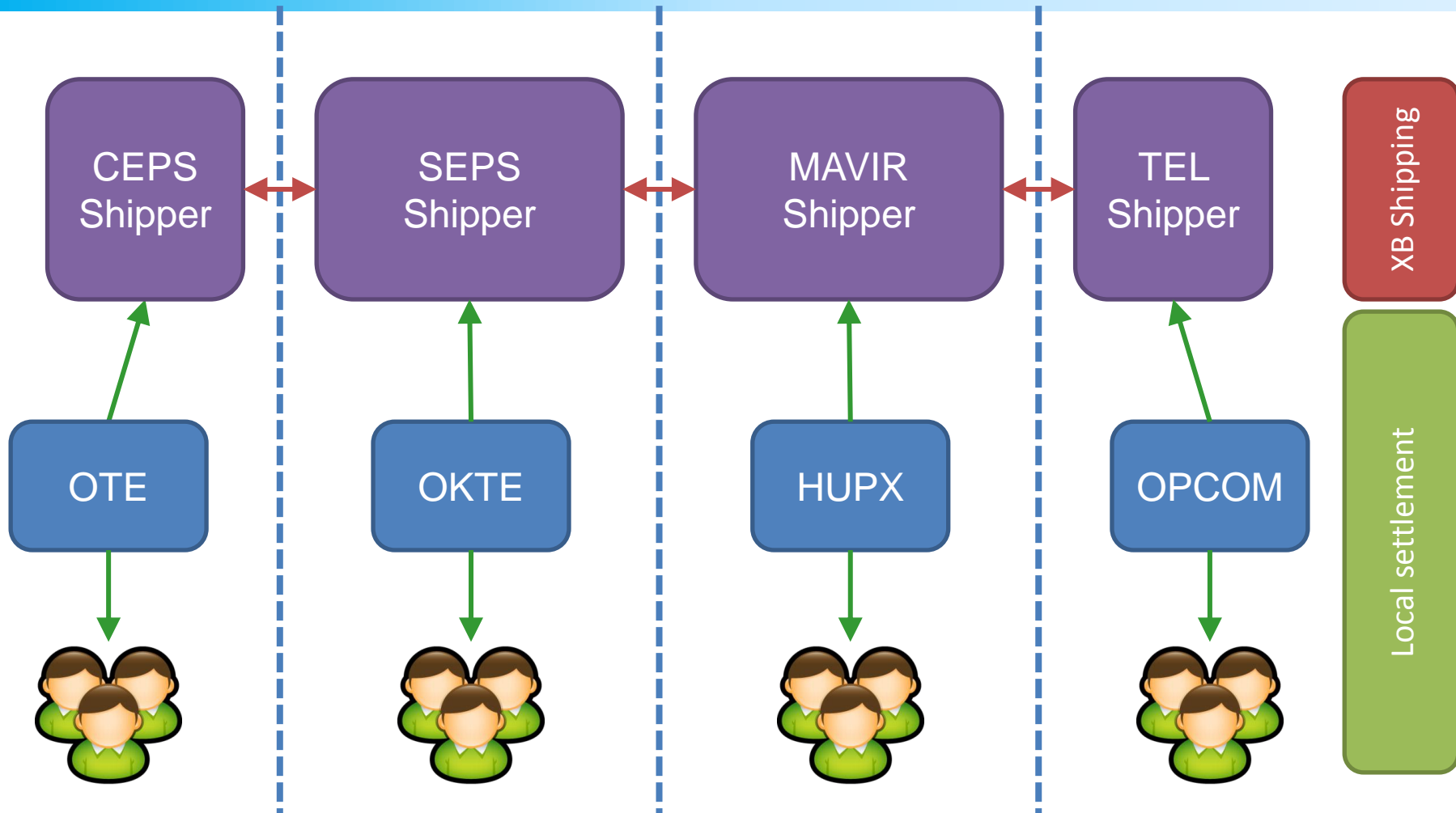
* The timings are subject to the procedural tests.

** Without Second Auction. In case of Second Auction or application of any backup/fallback procedure the publication time is postponed.

TSO technical solution

- Equal status of all connected TSOs
- The only TSO platform (no rotation, simple contract)
- Allows easy changing of PX roles (Coordinator/Non-Coordinator)
- Excellent experiences on performance and functionalities from CZ-SK-HU MC
- *mTMF* and *TSO Cloud* systems are easily extendable
 - Unlimited number of TSOs and PXs
 - extension of the system with almost no costs

4M MC settlement and shipping



Fallback solution

- The 4M MC Project strives to adopt same principles as in NWE MC in order to allow smooth transition when coupling with NWE region.
- Explicit shadow auction are used for all the three borders as a fallback solution for capacity allocation: CEPS organizes it for CZ-SK border, and MAVIR for SK-HU and HU-RO borders.
- Partial decoupling will be not implemented in 4M MC.
- Process timings will be published sufficiently in advance before go-live in order that market participants may adapt.

4M MC heads to the IEM

- Prepares PXs and TSOs for the target model
- Current coordinated capacity calculation method remains (ATC)
- Provides market participants benefits of implicit allocation already before Flow-Based MC is implemented
- Promotes cross-regional integration by involving Romania and is open for other markets as well
- PX Systems in 4M MC support further integration with NWE region
- Go-live is expected on 11th November 2014

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