

European Power Exchanges

Greek status

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LAGIE

Agenda

European Power Exchanges
Role & Competences

Greek status
Role of LAGIE

European Internal Market
Legislation & Status

Italian borders
Schedules & Targets

European Power Exchanges

ROLE & COMPETENCES

- They are,
 - Usually subsidiaries of the TSOs
 - Independent companies, unbundled from the market participants
- They offer,
 - Anonymous electronic trading ensuring efficiency, transparency and security
 - Market data and indexes
 - Innovation and new opportunities to the market
- They run,
 - Spot electricity markets - Continue intraday markets
 - Forward markets and Derivatives - Clearing and settlement

European Power Exchanges

ROLE TOWARDS AN INTEGRATED EUROPEAN MARKET

- ❖ Price is the ultimate referee. It fairly represents the real power balance-sheet at a certain time in a defined area
- ❖ Providing reference prices in a transparent and neutral manner is the exchanges' task. This task serves the public interest, i.e. the final consumer
- ❖ Market integration can today progress quickly through multi-regional price coupling, building on existing infrastructures and regulatory frameworks
- ❖ Closer cooperation with ACER for Transparency and Integrity of the Market

European Power Exchanges and Clearing Houses

Apx (Netherlands)

- Since 1999
- Owned by TENNET BV 70%, ELIA 30% TSOs
- Operates spot market & Clearing and settlement for gas and power in Netherlands, Belgium and UK

EEX (Leipzig - Germany)

- Since 2002
- Merge of 2 German PXs (Leipzig and Frankfurt)
- Operates spot, intraday and derivative markets for power, gas and emission

European Power Exchanges and Clearing Houses

Epexspot (Paris - France)

- Since 2008
- Merge of Powernext and Eex
- Operates spot power market in France, Germany, Austria and Switzerland

Powernext (Paris-France)

- Operates spot, futures and gas market

GME (Italy)

- Since 2004
- Operates spot and intraday power and gas market

European Power Exchanges and Clearing Houses

Exaa (Austria)

- Owned by Apcs (clearing) 35%, Wiener bourse 25%, OeKB (bank) 8%
- Operates spot power market in Austria

Nordpool spot (Scandinavia)

- Since 1990
- Owned by Nordic and Baltic TSOs
- Operates spot and intraday power markets in Norway, Sweden, Finland, Denmark, Estonia and Lithuania

ECC (Leipzig, Germany)

- Since 2006
- Subsidiary of EEX
- Central European clearing house for exchange and OTC transactions in power, natural gas, emission allowances and coal

HELLENIC ELECTRICITY MARKET

Short History

1999: 1st Energy act pursuant to Directive 96/92/EC for liberalization of the Hellenic Electricity Market

2000: Establishment of **Hellenic Transmission System Operator (HTSO)**.

The initial market consisting on centralized dispatching, based on offers and bids.

Ex post clearing based on System Marginal Price

2005: Development of new Market design

Adoption of **mandatory pool** model

Establishment of **generation capacity assurance mechanism**

HTSO undertook the responsibilities of a **Market Operator**

2011: New energy act pursuant to 3rd European Energy Package

LAGIE as Market Operator

HTSO spin-off into **ADMIE** as Transmission System

HELLENIC ELECTRICITY MARKET LAGIE – CORPORATE OBJECTIVE

- ❖ Operation of the Wholesale Electricity Market
 - ❖ Participant's Registry
 - ❖ Day Ahead Scheduling (DAS)
 - ❖ Clearing & Settlement
 - ❖ Nomination to the TSO (ADMIE)
 - ❖ Reporting and analysis of the market
- ❖ Management of Renewable Energy Sources (RES) - Feed-in tariffs
- ❖ Operation of Guarantees of Origin & Energy Efficiency Evaluation

HELLENIC ELECTRICITY MARKET

MANDATORY POOL (1)

Day Ahead Scheduling or Day Ahead Spot Market

It is a
24 h Unit Commitment and Social Welfare
Maximization
with
co-optimization of Ancillaries Services and
Reserves
respecting
Unit and System constraints

HELLENIC ELECTRICITY MARKET

MANDATORY POOL (2)

- ❖ Producers submits
 - ❖ Techno Economic and Non Availability Declarations
 - ❖ Energy Offers for the available capacity
 - ❖ Offers for Primary and Secondary Reserves
- ❖ Suppliers submit
 - ❖ Non priced Load Declarations for the expected demand
 - ❖ Priced Load Declarations (Pumping Units)
- ❖ LAGIE submits (non priced quantities)
 - ❖ RES production forecast
 - ❖ Production of Units in commissioning
 - ❖ Production of Hydros necessary for irrigation and water supply
- ❖ Traders submit
 - ❖ Energy Offers (imports) and Load Declarations (exports)
- ❖ Constraints
 - ❖ Transmission system constraints (NTC/Interzonal)
 - ❖ Technical constraints of generating units (ramps, min/max production limits, ancillary data, min up/down times, start-up times, etc.)
 - ❖ Reserve requirements

HELLENIC ELECTRICITY MARKET

EX-ANTE (D-1)

Energy & Reserves Offers
Techno-economic Declarations
Non Availability Declarations

Producers

Importers

Hydros & RES

PAYMENTS

DAS Settlement @
-System Marginal Price
-Primary & Secondary
Reserves Price

CHARGES

Suppliers

Exporters

Pumping

Load Declarations

LAGIE

Transmission System Constraints
Reserves Requirements

LAGIE

REAL TIME (D)

Real Time Dispatch

Dispatch
Instructions &
Instructed
Deviations

ADMIE

EX-POST (D+4)

Imbalance payments
and charges
Additional payments for
instructed deviations

**Imbalances
Settlement**

Calculation of Imbalances
between scheduled and
measured quantities

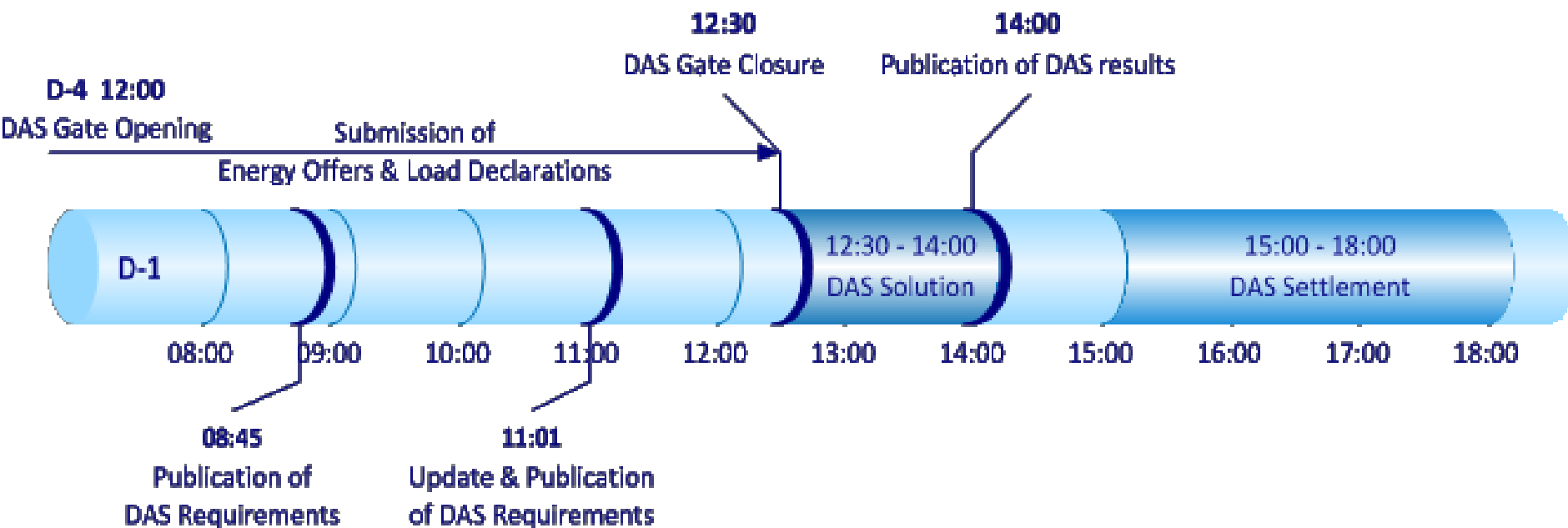
Measured
Data

Imbalance payments
and charges

ADMIE

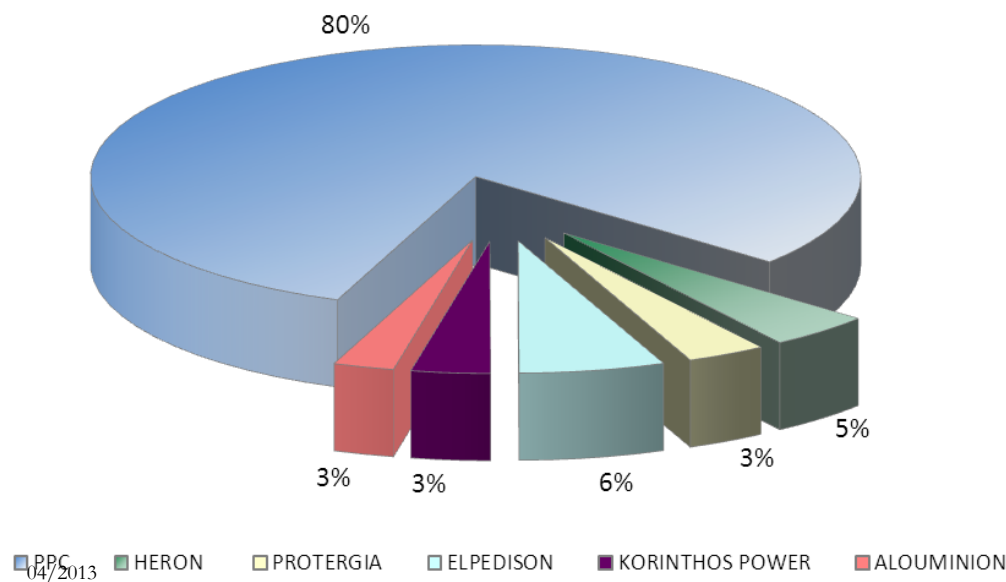
HELLENIC ELECTRICITY MARKET

DAY AHEAD SCHEDULING



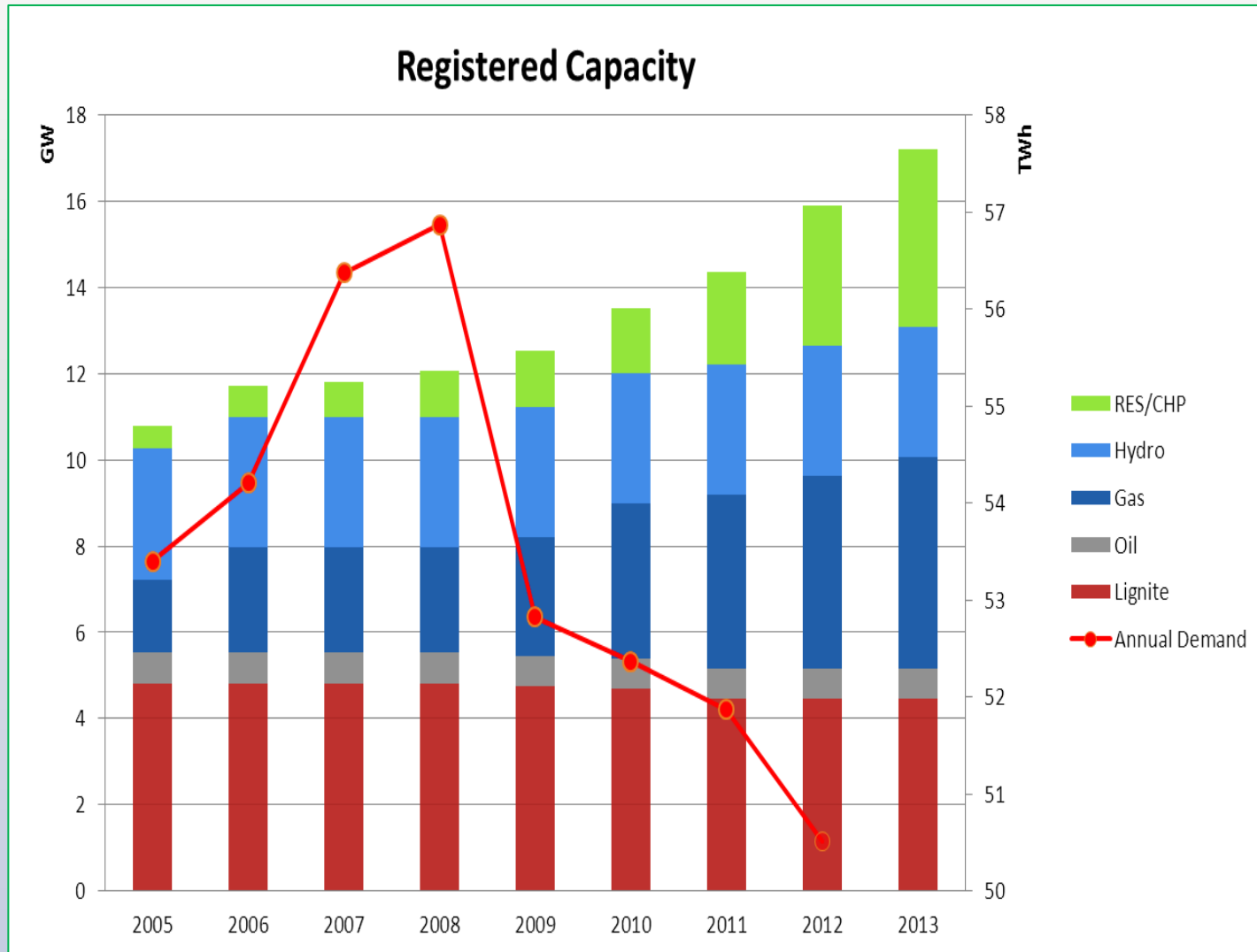
HELLENIC ELECTRICITY MARKET PARTICIPANTS

Producers-Market Share



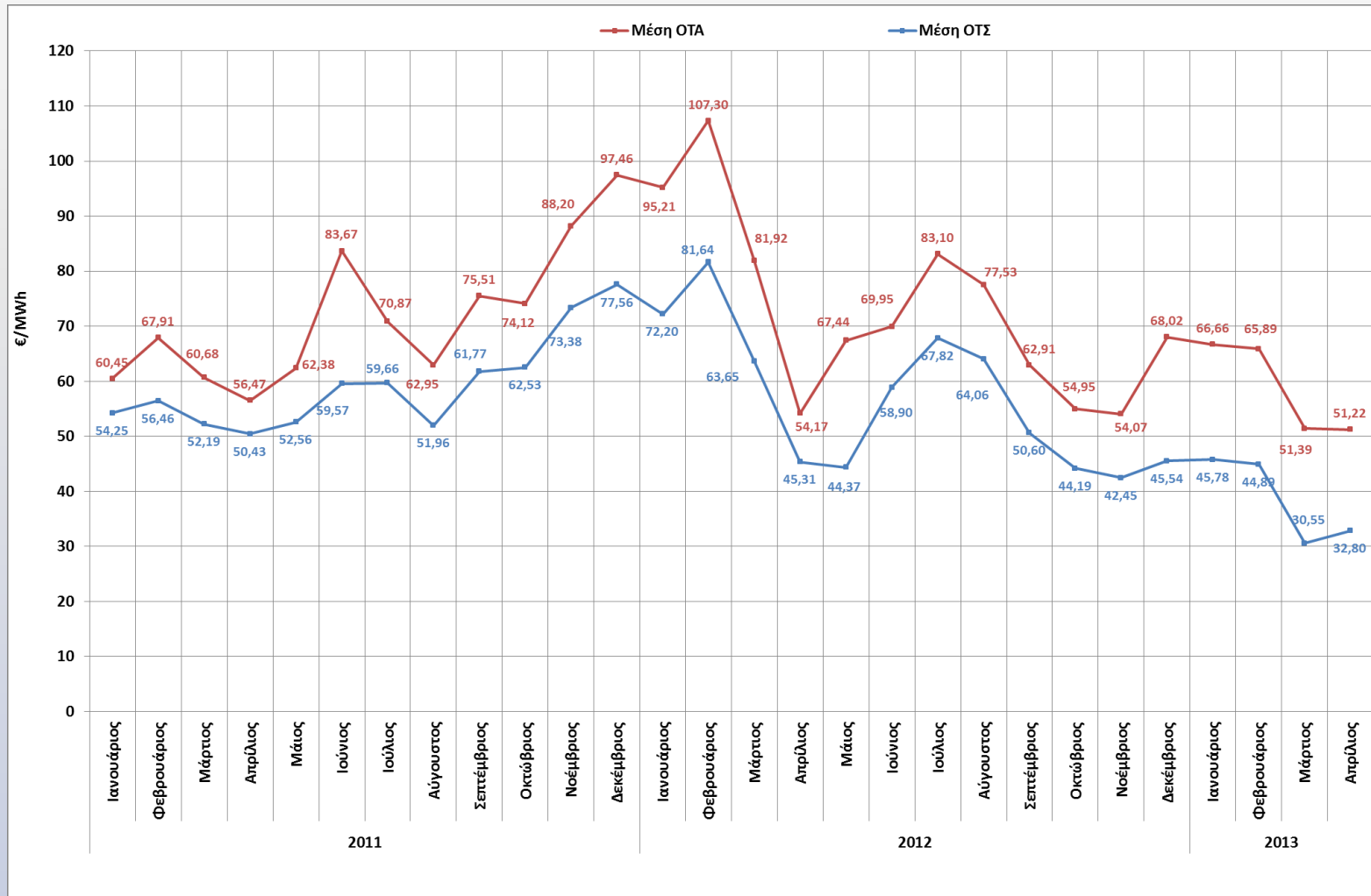
8 Producers
17 Suppliers
31 Traders

HELLENIC ELECTRICITY MARKET CAPACITY



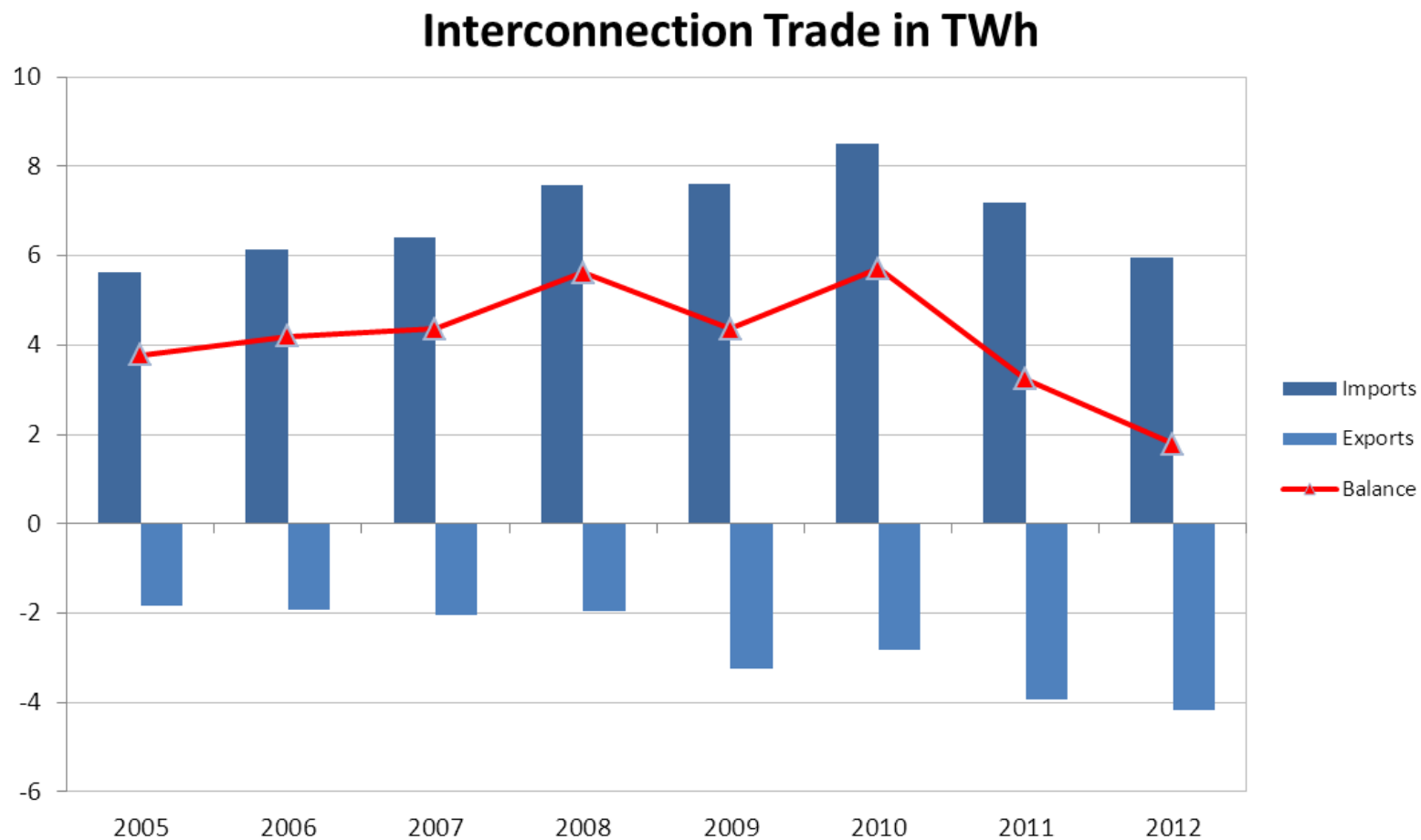
HELLENIC ELECTRICITY MARKET

SYSTEM MARGINAL PRICE



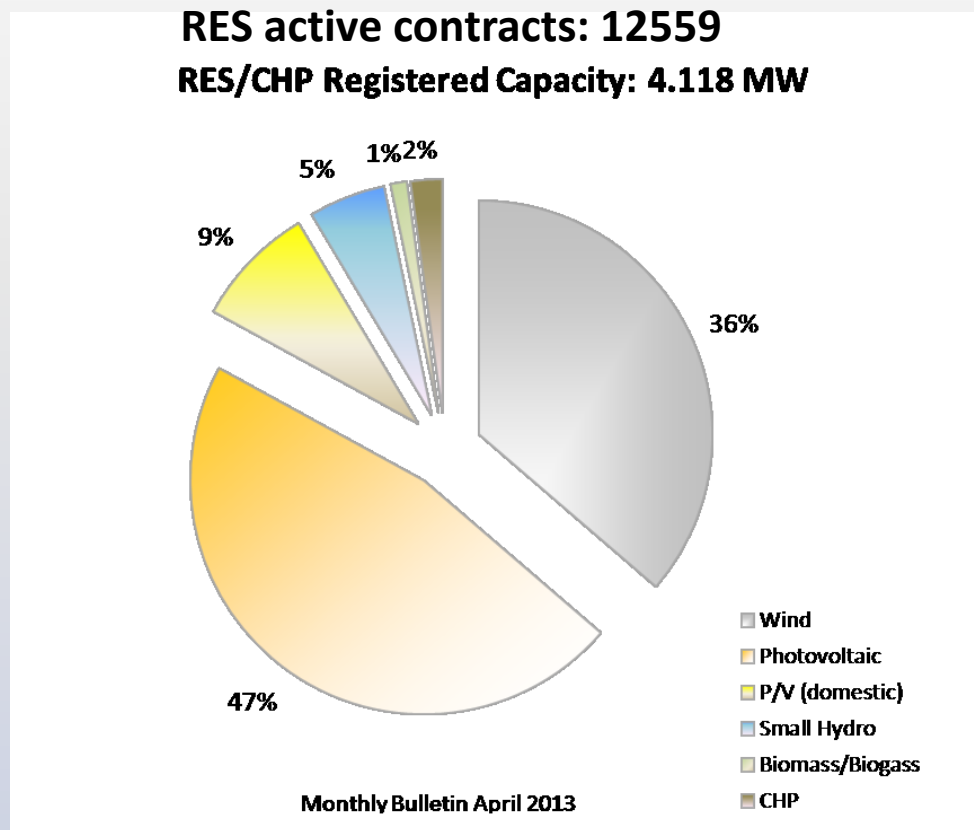
HELLENIC ELECTRICITY MARKET

INTERCONNECTION TRADE



HELLENIC ELECTRICITY MARKET

RENEWABLE SOURCES



European integrated market

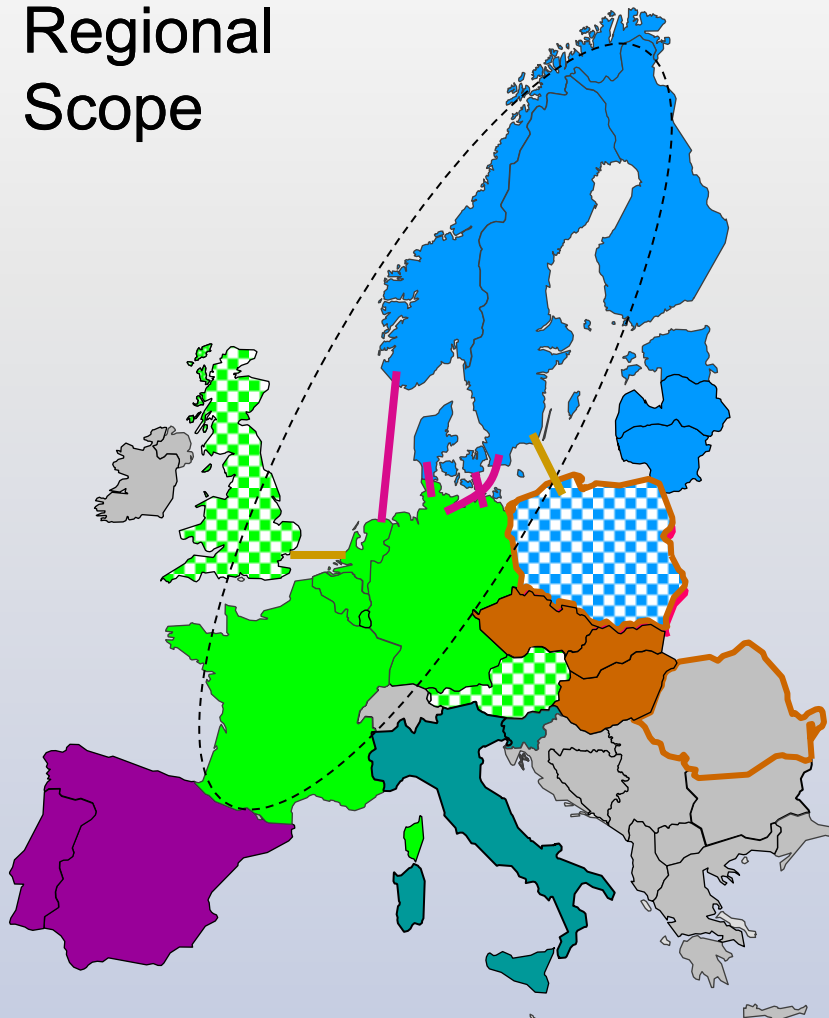
Legislation towards the target model




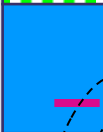




- ❖ CACM/ Governance in Adoption phase towards the Comitology procedure
 - ❖ Capacity calculation: Flow based (NTC possible)
 - ❖ Day ahead market (price) coupling
 - ❖ Continuous cross border intraday trading
 - ❖ Governance
- ❖ Timeline goal for a formal opinion of Committee in Q4/2013 or Q1/2014

Day-ahead Market Coupling

Initiatives in operation

Regional Scope

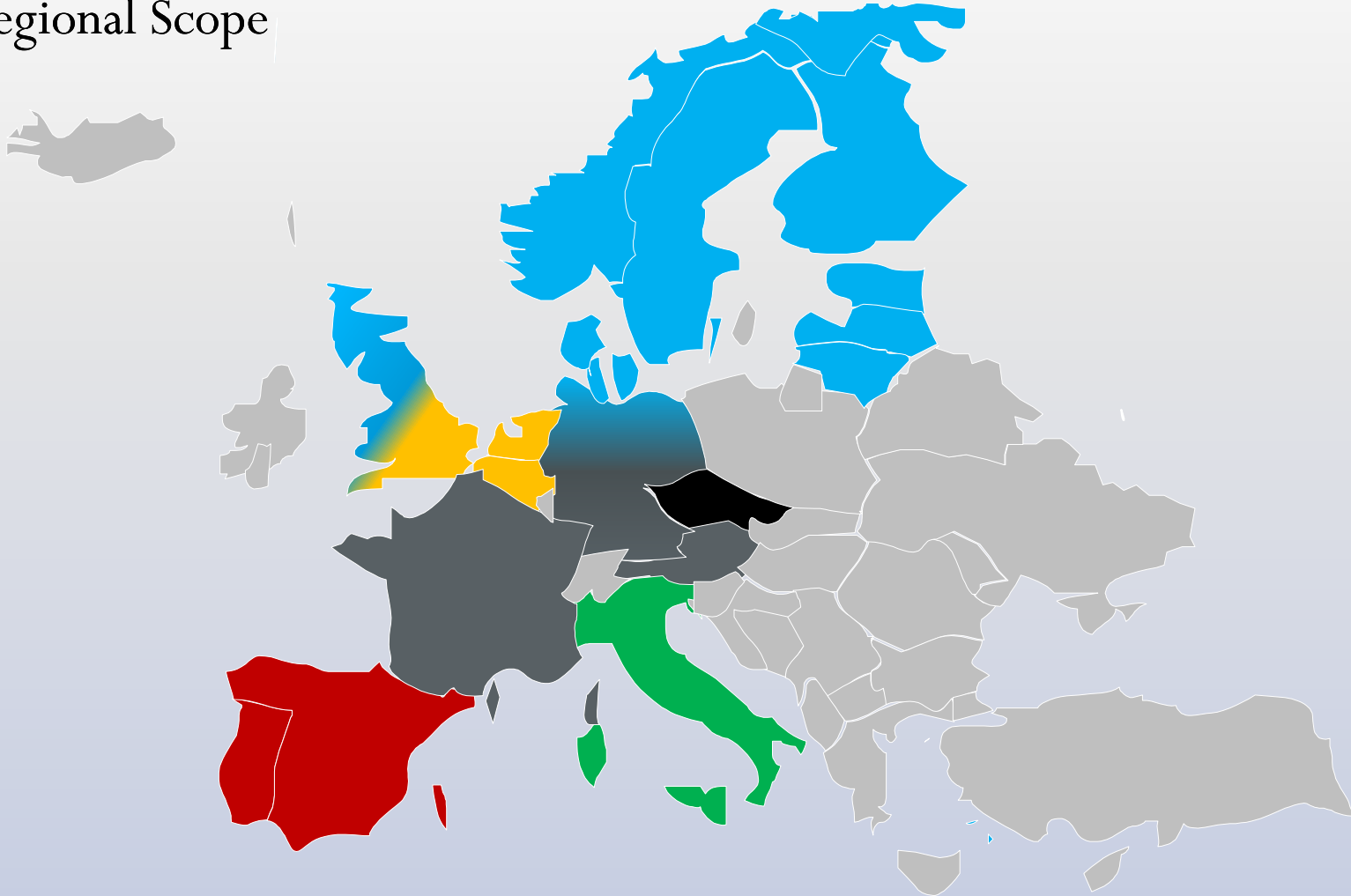


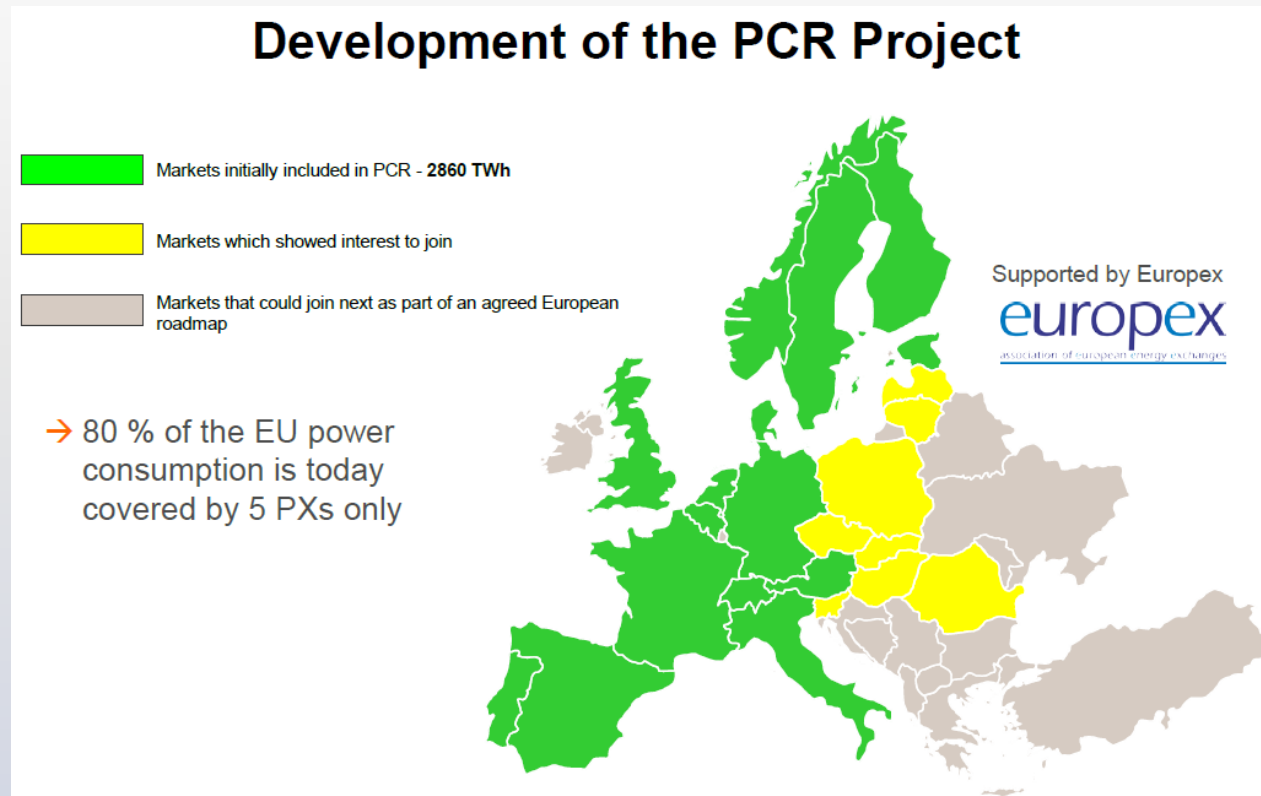
REGIONAL IMPLICIT AUCTIONS		
	CWE	Price coupling
	Austria	Price coupled to GE/CWE (no congestion)
	BritNed	GB price coupled to NL/CWE
	Nordic + Estonia+ Poland	Price coupling, also Poland via Swepol
	ITVC	Volume coupling CWE – Nordic - Baltic
	Italy - Slovenia	Price coupling
	Mibel	Price coupling
	CZ-SK-HU	Price coupling

Common Intraday markets

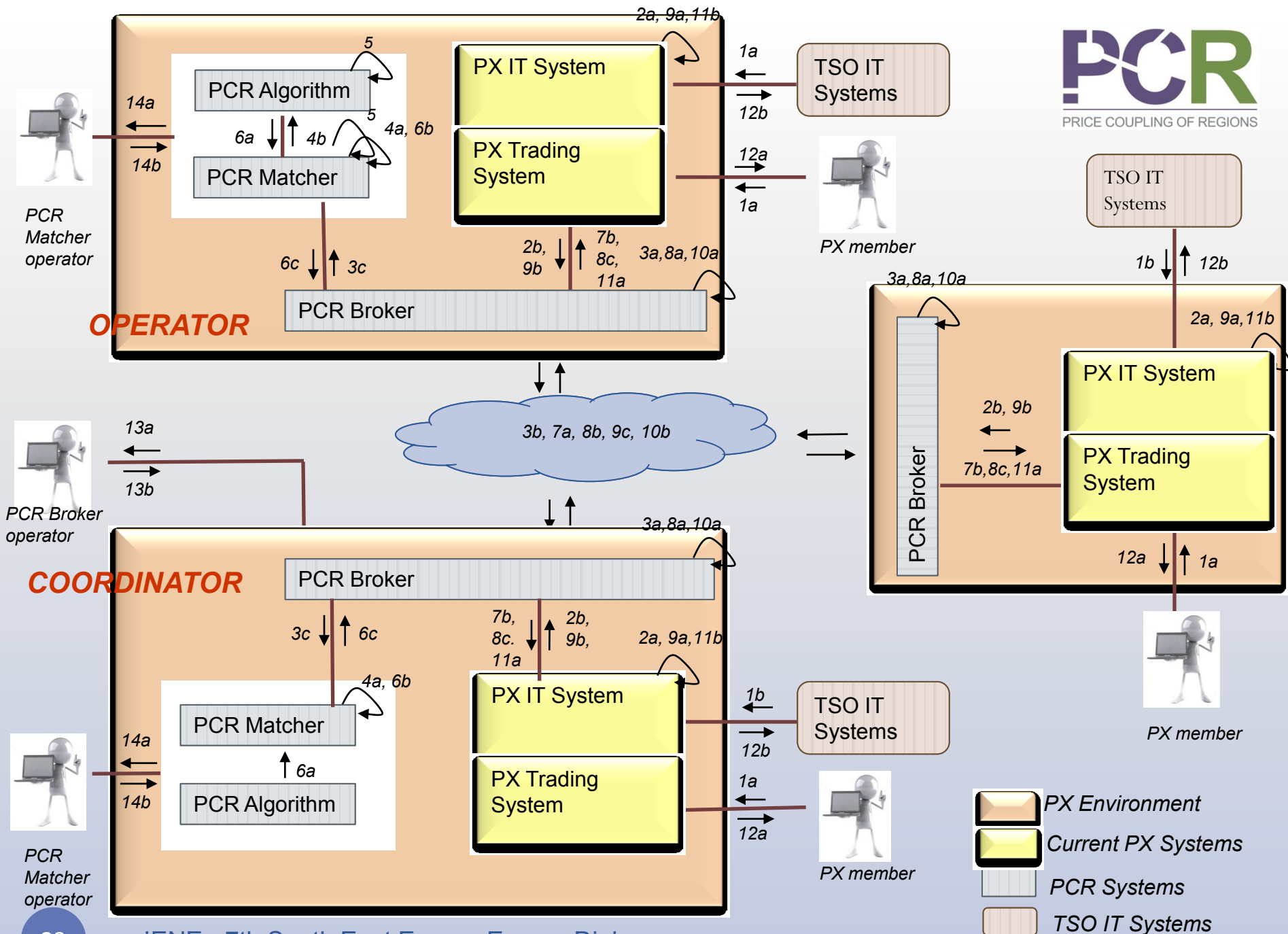
Initiatives in operation

Regional Scope

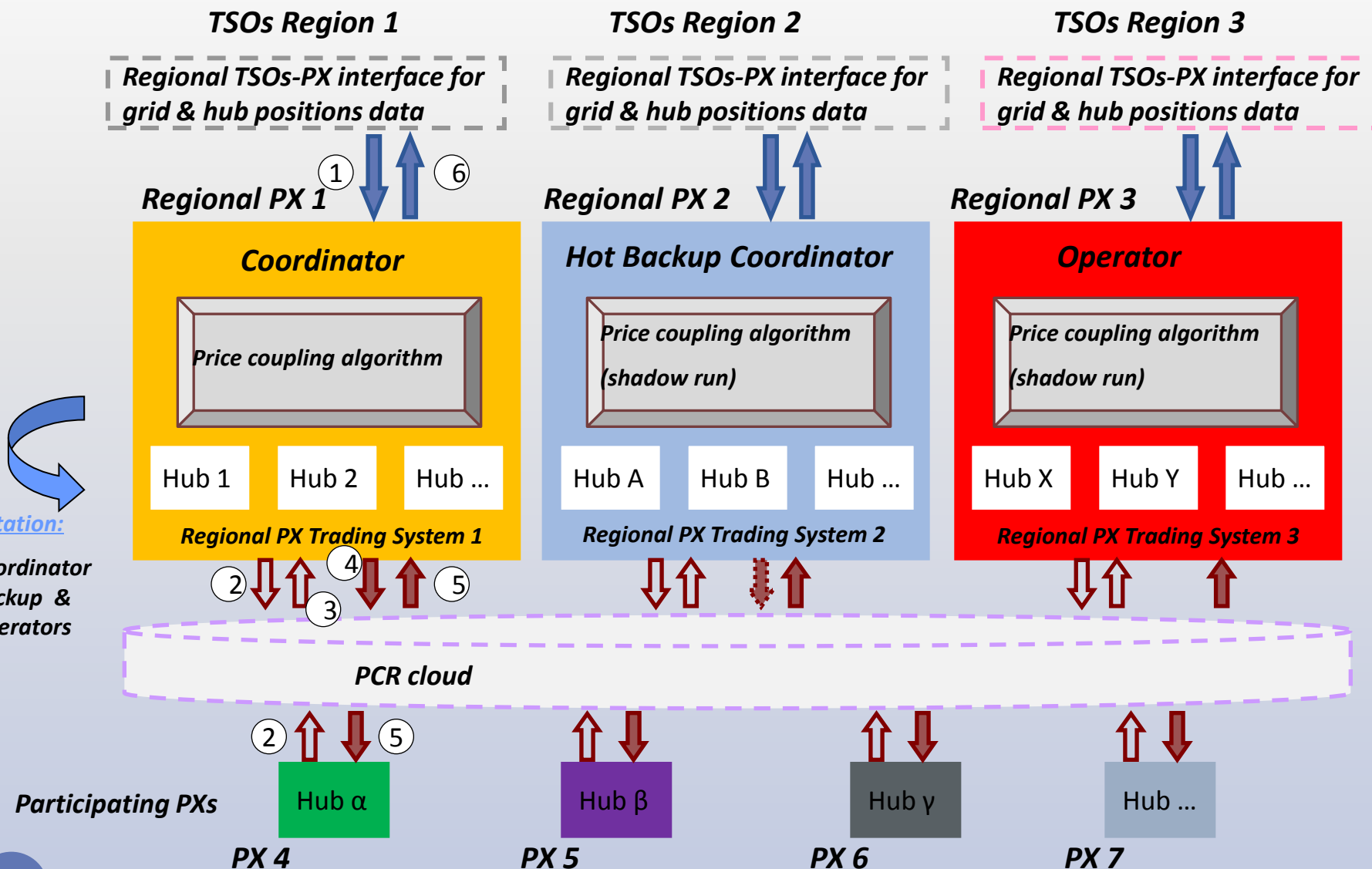




- PCR project is focused on the delivery of a common European price coupling solution (algorithms, systems, procedures and inter-PX co-operation arrangements)
- Main principles: One single algorithm
Decentralized governance
Decentralized operation

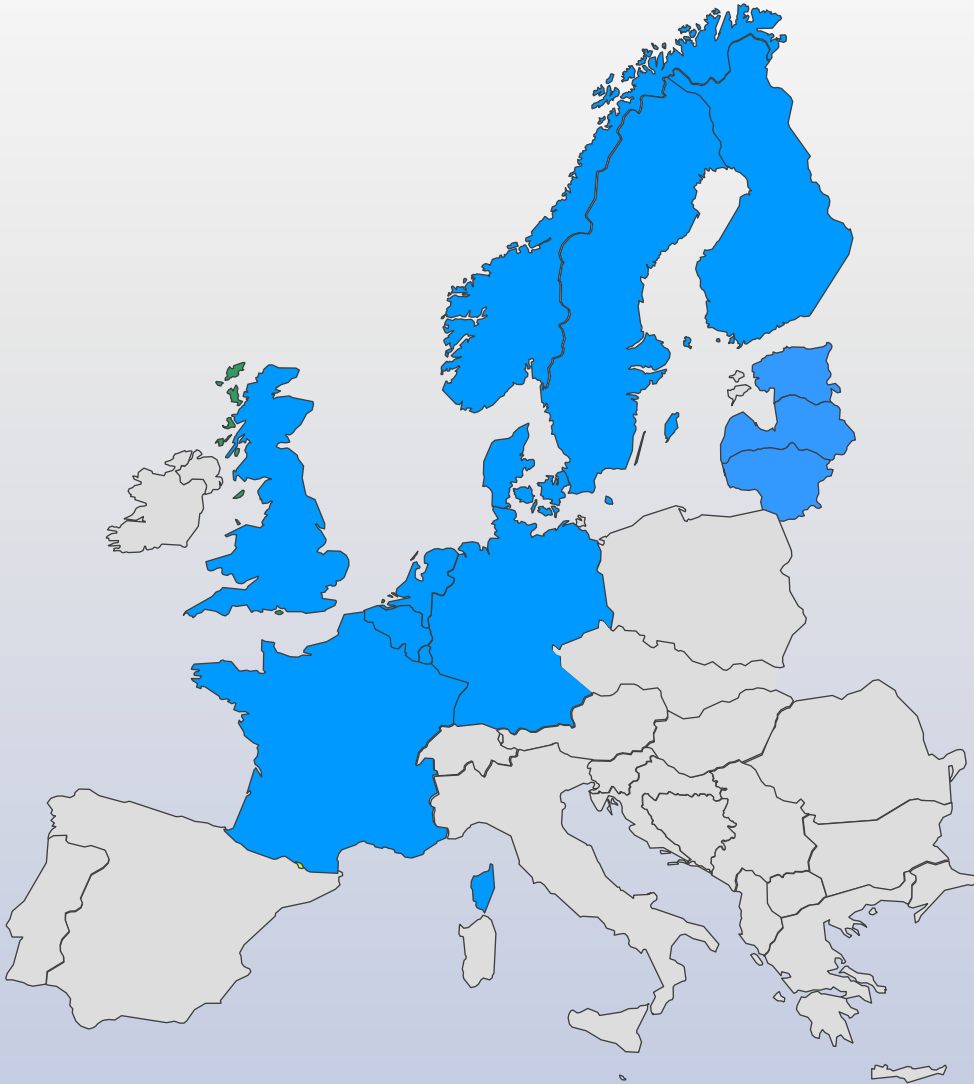


Conceptual representation of the technical solution



NWE-Project

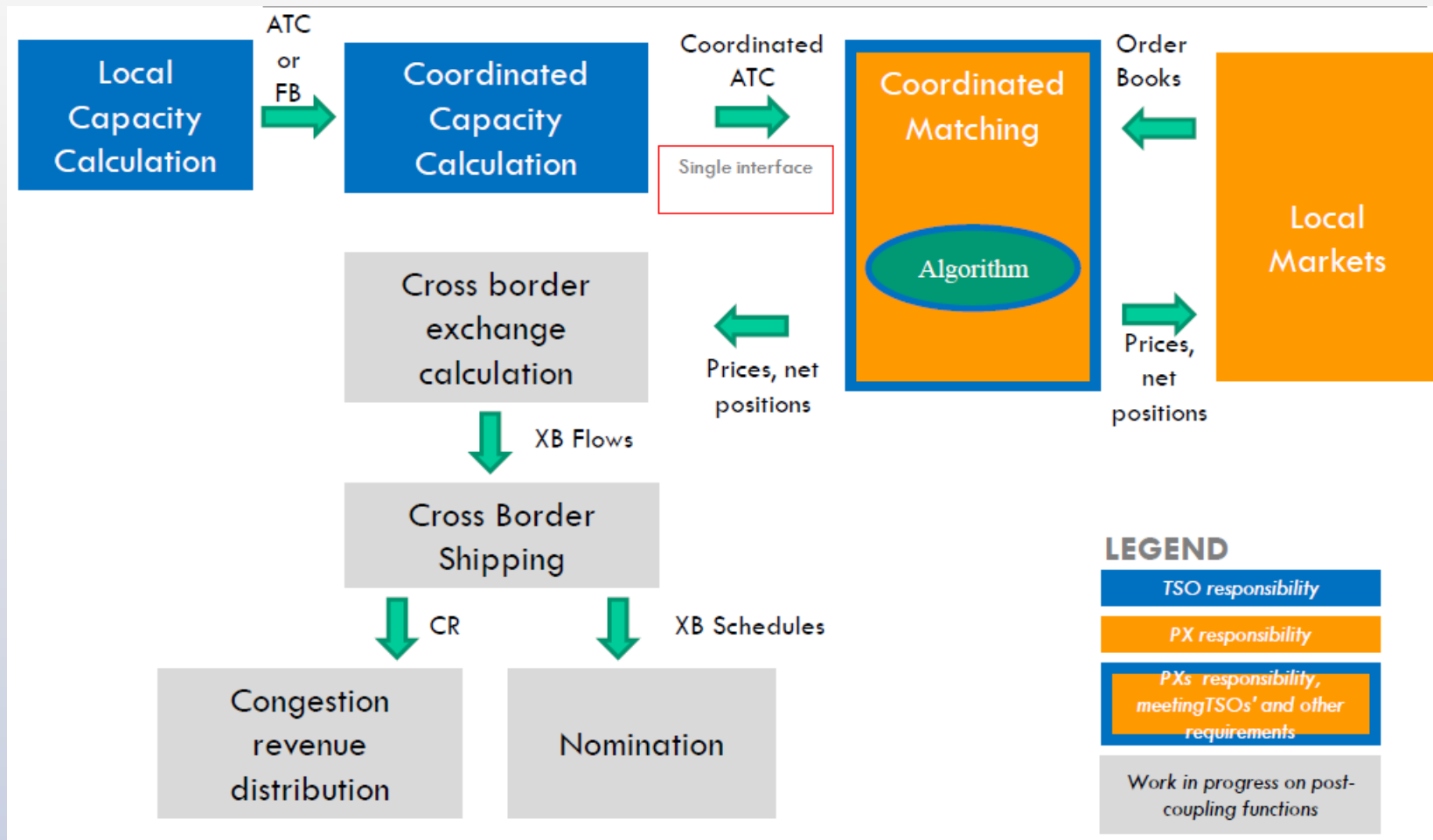
THE MOST IMPORTANT FACTOR FOR FUTURE DEVELOPMENTS



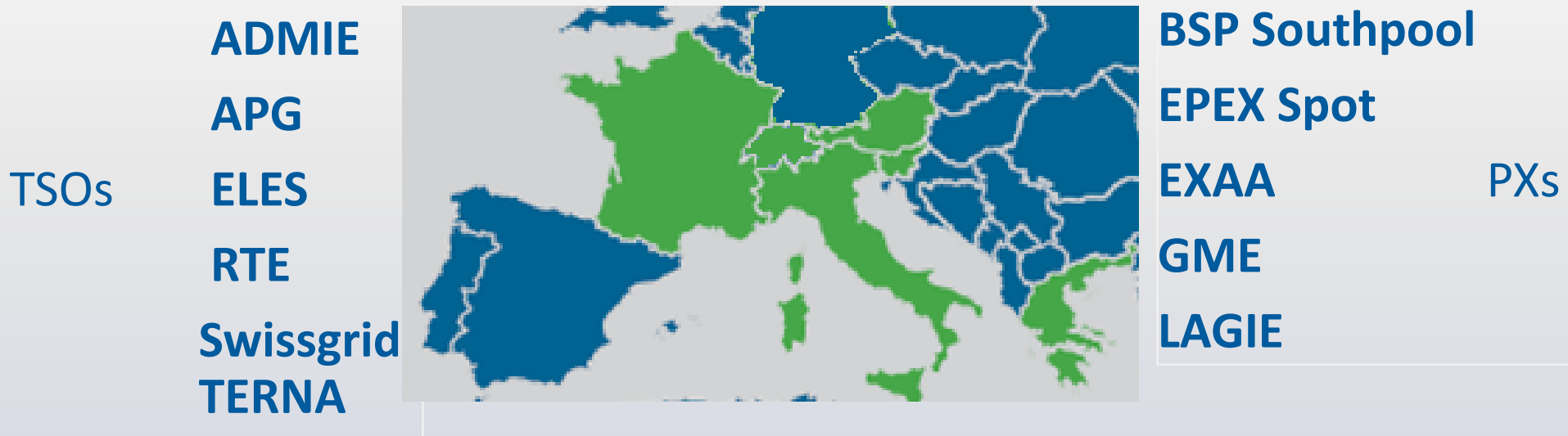
- ❖ NWE-Project shall deliver a single Price Coupling for CWE, Scandinavia, the Baltic Region and Great Britain till the end of 2013
- ❖ Market coupling will be based on the PCR solution

NWE-Project

FUNCTIONAL OVERVIEW



Italian Borders Cooperation for the Market Coupling



A Cooperation Agreement has already be signed between
the parties for the Design Phase

Go Live target end of 2014