

# PCR Project

## Main features

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# Introduction

- **WHAT is PCR?** Price Coupling of Regions (PCR) is a project of European Power Exchanges to harmonise the European electricity markets
- **HOW is this done?** By developing common assets, a single price coupling algorithm and PCR Matcher and Broker SW, to be used to calculate electricity prices across Europe

# Key Elements in European Integration

- Price Coupling of Regions (PCR) is a Market Coupling project focused on the delivery of a Market Coupling Operations Function (MCO Function) described by CACM Regulation 2015/1222
- An important part of all regional market coupling projects, linking them all together
- This is to accommodate the overall EU target of a harmonised European electricity market
- Based on three main principles:
  - One single algorithm
  - Robust operation
  - Individual accountability

# Key Elements in European Integration

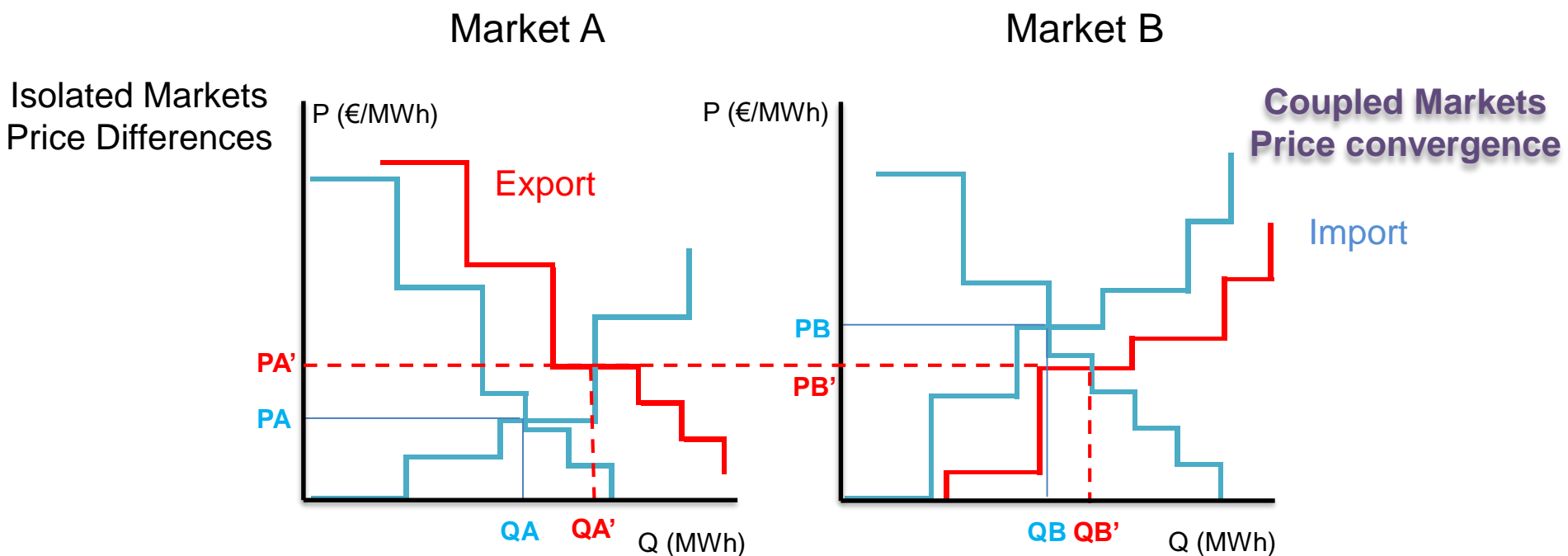
- PCR is a project currently being operated by eight Power Exchanges: EPEX SPOT, GME, HEnEx, Nord Pool, OMIE, OPCOM, OTE and TGE, open to other European Power Exchanges wishing to join. PCR is creating a governance structure based on a Co-Ownership Agreement and a Co-Operation Agreement among exchanges
- PCR is used to couple the following countries: Austria, Belgium, Czech Republic, Croatia, Denmark, Estonia, Finland, France, Germany, Hungary, Italy, Ireland, Latvia, Lithuania, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and UK
- Development of a single price coupling algorithm, Euphemia. It is used to calculate electricity prices across Europe. It also optimises the overall welfare and increases transparency of prices and flows

# Benefits of European Price Coupling

- The integrated European electricity market is beneficial due to increased liquidity, transparency, efficiency and social welfare
- Guarantees the overall welfare and optimal use of electricity network constraints
- Implicit trading removes unnecessary risks of trading cross-border capacity and electricity separately

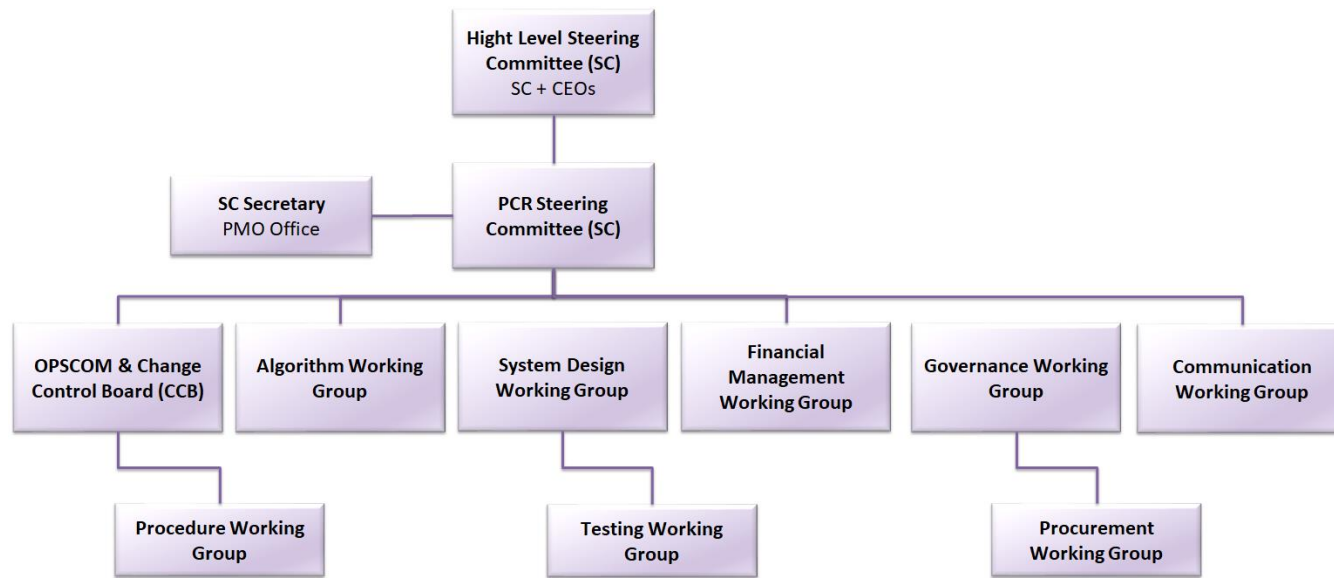
# PCR can have two functions:

- **For Power Exchanges: More competitive prices and overall increased welfare**



- **For TSOs: Efficient use of electricity network constraints**

# PCR Project Structure



## The Steering Committee

- The ultimate decision-making entity for the project with representatives of each PX
- Responsible for the efficient management of the Project
- Focused on achieving the objectives

## Workgroups

- They share out the tasks according to the needs.



# Towards Single European Market: History of Market Coupling

## 1993 - 2000

- Nordic Price Coupling: The Nordic markets are coupled

## 2006

- Trilateral Market Coupling, integrating the Netherlands, Belgium and France

## 2007

- MIBEL market started coupling Spain and Portugal

## 2009

- Czech Republic and Slovak Republic Market coupling started

# Towards Single European Market: History of Market Coupling

## 2010

- Central West European Market Coupling (CWE); integrating the Netherlands, Belgium and France with Germany
- Interim Tight Volume Coupling (ITVC) between the CWE region and the Nordic – Baltic region

## 2011

- NorNed cable is integrated into the CWE-Nordic ITVC
- Launch of BritNed coupling linking the GB market to the wider CWE region
- Italy and Slovenia Market coupling started

## 2012

- 3M MC project integrating the CEE region markets of Czech Republic, Slovak Republic and Hungary

# Towards Single European Market: History of Market Coupling

## 2014

- Launch of common synchronised operation of NWE and SWE regions Day-Ahead markets using PCR solution
- Full Coupling of NWE and SWE regions launched- stretching the coupled region from Portugal to Finland
- 4M MC project replaces the trilateral Coupling now integrating the markets of Czech Republic, Slovakia, Hungary and Romania

## 2015

- The Italian-Austrian, Italian-French and Italian-Slovenian borders have been coupled with the Multi-Regional Coupling (MRC), linking the majority of EU power markets—from Finland to Portugal and Slovenia
- Launch of the CWE Flow-Based market coupling in May

# Towards Single European Market: History of Market Coupling






## 2016

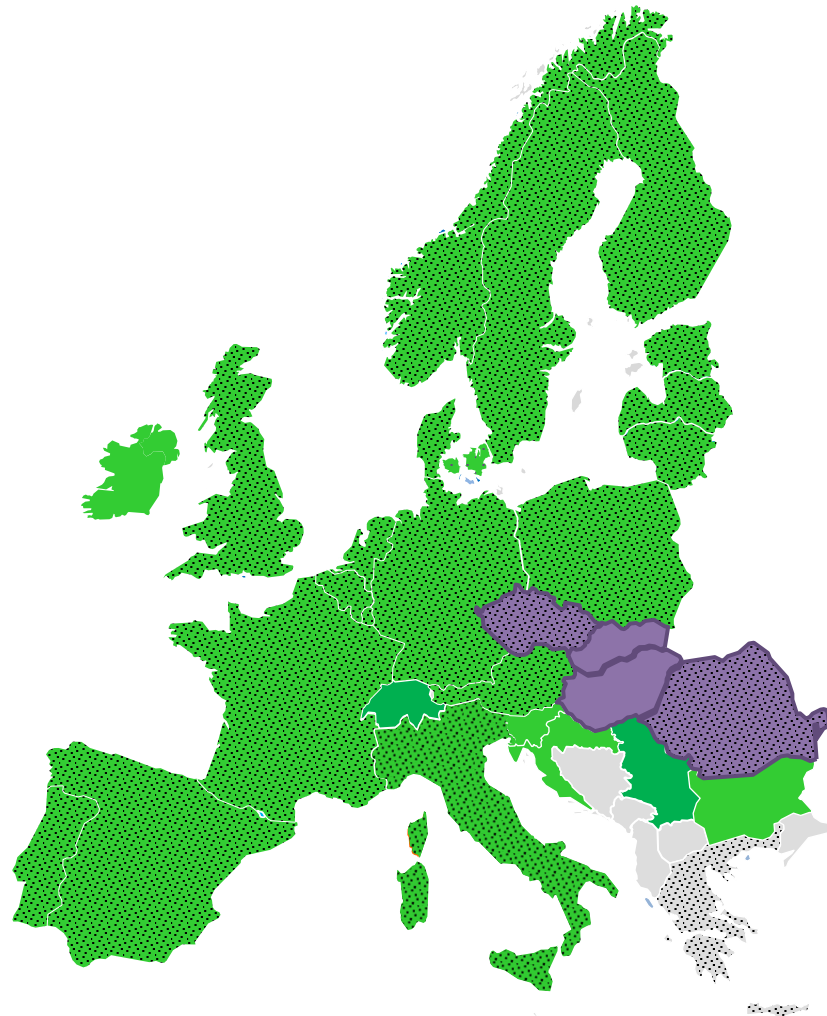
- Launch of market coupling of the Austrian – Slovenian border with the Multi-Regional Coupling (MRC)

## 2018

- Joining of the Slovenian – Croatia market coupling to the Multi-Regional Coupling (MRC)
- Successful Ireland – GB market coupling has included Ireland and Northern Ireland to the countries coupled through the Multi-Regional Coupling

# PCR users and members

-  Markets using PCR: MRC
-  Markets using PCR: 4MMC
-  Markets PCR members
-  Independent users of PCR
-  Markets associate members of PCR



# Thank You



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