CEI
CENTRAL EUROPEAN INITIATIVE

Support for Strengthening Energy Regulatory Authorities in the Western Balkans

Table of contents

Introduction

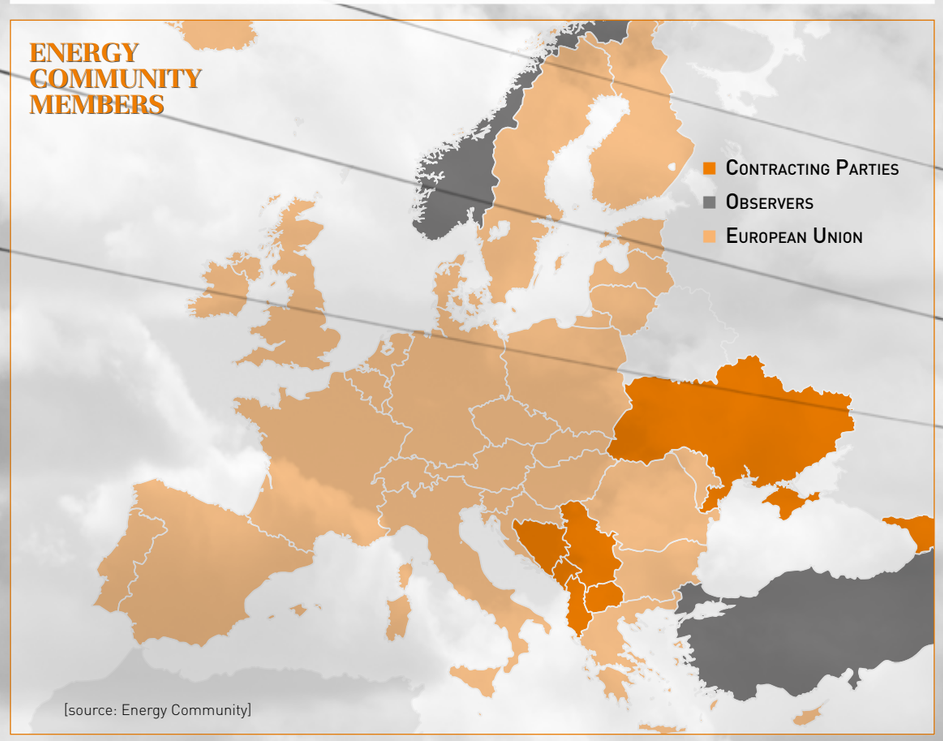
The energy sector is experiencing a deep transition due to multiple interweaved factors such as the **universal access** to energy resources, the **decarbonization** process, the increase of the **security of supply** and the promotion **of competitive energy markets**. The energy transition has different geographical and administrative scales and involve local communities as well as sub-national, national and regional territories/entities.

A secure, competitive and sustainable supply of energy for all European citizens is the main goal of the EU energy policy, and the first pillar of the **Energy Union**. A transnational cooperative approach is the basis of this policy perspective and only a full integration of regulations, resources and markets will ensure fulfilling such challenging goals. The complexity of the long-term energy targets has led the EU to enlarge the scope of energy cooperation, moving outside its borders towards the neighbouring regions. Despite the existing differences in political and institutional frameworks, as well as social and economic contexts, the reasons for cooperating are much stronger.

To foster energy **cooperation among EU and its neighbouring countries**, the Treaty establishing the **Energy Community** was signed in October 2005 and entered in force since July 2006.

The mission of the Energy Community Treaty is to:

- ESTABLISH A **STABLE REGULATORY AND MARKET FRAMEWORK** CAPABLE OF ATTRACTING INVESTMENT IN POWER GENERATION AND NETWORKS;
- CREATE AN **INTEGRATED ENERGY MARKET** ALLOWING FOR CROSS-BORDER ENERGY TRADE AND INTEGRATION WITH THE EU MARKET;
- ENHANCE THE **SECURITY OF SUPPLY** TO ENSURE STABLE AND CONTINUOUS ENERGY SUPPLY THAT IS ESSENTIAL FOR ECONOMIC DEVELOPMENT AND SOCIAL STABILITY;
- IMPROVE THE **ENVIRONMENTAL SITUATION** IN RELATION WITH ENERGY SUPPLY IN THE REGION AND FOSTER THE USE OF RENEWABLE ENERGY AND ENERGY EFFICIENCY;
- DEVELOP **COMPETITION** AT REGIONAL LEVEL AND EXPLOIT ECONOMIES OF SCALE.



[source: Energy Community]

The Berlin Process, launched on August 2014, by the German Chancellor, Angela Merkel is an initiative aimed at stepping up regional cooperation in the Western Balkans namely Albania, Bosnia and Herzegovina, Kosovo*, Former Yugoslav Republic of Macedonia, Montenegro and Serbia. The participants agree that European energy policy is of increasing importance to the countries of the Western Balkans. Electricity trading across borders is a key element of EU energy policy. Regional cooperation within the framework of the Energy Community for South East Europe is an important component, particularly as regards energy security, energy efficiency targets and climate protection.

At the Annual WB6 Summit held in Vienna in 2015, the six Western Balkans countries decided to take concrete steps to improve energy connectivity in the region, by facilitating investments and prioritising market development.

In April 2016, WB6 countries committed themselves by adopting so-called soft measures for the integration of the electricity market in the Region by signing a Memorandum of Understanding (MoU) setting out general principles of cooperation as well as concrete actions to develop the regional electricity market.

Since the WB6 region is physically closely linked with neighbouring EU Member States, the initiative has placed great importance on including stakeholders from EU Member States that neighbour the WB6 countries. Stakeholder from all six neighbouring EU countries – Bulgaria, Croatia, Greece, Hungary, Italy and Romania have joined the activities.

The process was further strengthened by the conclusion of a Grant Contract between the European Commission and the Energy Community Secretariat for provision of technical assistance to support the development of a regional energy market in the Western Balkans. To achieve this, substantial efforts in terms of regulatory and institutional development are required to reach a smoothly functioning **spot market**, **cross-border balancing and capacity allocation mechanisms**. Several regulatory and legal obstacles must be tackled and new/revised legislation (primary and secondary) must be put in place in line with the Energy Community Treaty and the countries' obligations towards EU. Substantial **capacity building and institutional development** is also required.

* This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence.

In line with the general framework depicted above, the Italian Regulatory Authority for Energy, Networks and Environment (**ARERA**) –in coordination with the Italian Electricity Market Operator (**GME**) and the Italian TSO (**Terna**) - has implemented a project which focuses on transferring to the **National Regulatory Authorities** of **Albania (ERE)**, **Montenegro (RAE)** and **Serbia (AERS)** the **know-how on market coupling** initiatives among EU members. The project benefits from the financial support of the **Central European Initiative (CEI) fund** at the European Bank for Reconstruction and Development (**EBRD**) totally financed by the Italian Government. **I-COM** (Institute for Competitiveness) provided support for the aspect related to the project management.

The general objective of the project is **to promote the integration between the European and the Balkan regional electricity market** by strengthening the capacities of AERS, ERE and RAE to manage the process of **market coupling** between their national electricity markets and with the Italian electricity market in accordance with EU best practices embedded in **EU Regulation 2015/1222** establishing a guideline on capacity allocation and congestion management (known among experts as **CACM**).

The potential benefits of liquid spot markets for the WB6 countries are significant: many of the WB6 countries do not have the critical size to develop liquid markets in isolation. Liquid cross-border markets will lead to important costs savings for the Western Balkan Countries consumers through more competition and more effective use of existing generation and transmission infrastructure in the region, attracting at the same stage more investments.

The know-how transfer is articulated in 4 workshops, where experts from the Italian Regulatory Authority Terna and GME exchanged information and knowledge with representatives of each Balkans NRAs, TSOs and PXs.

PROJECT MEETINGS

KICK-OFF MEETING
Rome - Italy, 25/1/2018

1ST WORKSHOP
Rome - Italy, 26/1/2018
Market coupling fundamentals
Specific objective: to create a common background knowledge on institutional, regulatory and technical issues related to the market coupling proc

2ND WORKSHOP
Tirana - Albania, 21/4/2018
Pre-coupling activities: contractual and technical aspects
Specific objective: to improve the knowledge on the legal, contractual and technical framework related to the day-ahead market coupling mechanisms.

3SRD WORKSHOP
Belgrade - Serbia, 18-19/6/2018
Adoption of Capacity Allocation Congestion Management (CACM) and Forward Capacity Allocation (FCA) Regulations in the Energy Community
Specific objective: analyzing the impact of AIMS (Albania, Italy, Montenegro and Serbia Working Group) project on the adoption of CACM and FCA Regulations in the legal framework of the Energy Community

4TH WORKSHOP
Budva – Montenegro, 11/10/2018
Governance and implementation processes of market coupling. The role of role of supranational entities
Specific objective: analyzing the role of the European Regulatory Forum (ERF), ACER and ECRB in the approval process of terms and conditions or methodologies.

FINAL MEETING
Budva – Montenegro, 12/10/2018
Fostering energy cooperation between the Balkan Region and the European Union: state of art and perspectives.

KEP-ARERA PROJECT: OBJECTIVES AND ACHIEVEMENTS

MAIN GOAL

To contribute to strengthening the capacities of AERS, ERE and RAE to manage the process of electricity market integration among their national electricity markets and with the Italian electricity market in accordance with EU best practices.

ACHIEVEMENTS

The involved representatives of Balkans NRAs are now able:

- To better understand the main methodologies foreseen in EU Regulation and assess the impact on their national jurisdictions;
- To convey to their top management a clear view on the regulatory measures and formal acts needed to carry out the integration process.

Beneficiaries' Country sheets

Albania

Energy Regulatory Authority (ERE) was established pursuant to the Laws 7970 dated 20.07.1995 and 7963 dated 17.07.1995 as a public legal entity, independent from the energy industry interest and from government institutions. The Authority started working in October 1995.

It actually operates based on Law no. 43/2015, of 30.04.2015 "For power sector" and Law no. 102/2015 "For natural gas sector". These laws transpose the provisions of the third energy package into the Albanian Energy Market.

Actually there is no organized DAM (Day Ahead Market) in place in Albania, anyhow provisions set in the Power Sector Law as amended in February 2018 set targets for the establishment of the DAM and the PX (Power Exchange) with the participation of the TSO, service providers as well as International Financial Institutions. In this regard the Albanian and Kosovo Governments have already signed a MoU for the participation of KOSTT (the Kosovo Transmission System Operator) with equal shares with OST in the PX. Secondary legislation such as Market Model and Market Rules, needed for the operation of the DAM is already in place approved by the Albanian Government and the Regulator. Moreover OST has drafted the business plan and operational plan for the APX (Albanian Power Exchange) with the assistance of the service provider as well as documents needed for the establishment of the company like Shareholders agreement and Articles of Associations.

NRA competences on cross border trade and capacity allocation are foreseen and defined in the Albanian Power Sector Law (PSL) 43/2015 (amended version).

Pursuant to that law art. 23 ERE shall cooperate with other neighboring regulatory authorities in the region and with Energy Community Regulatory Board to:

A) create operational arrangements for the optimal management of the grid, promote joint exchanges and the allocation of cross-border capacities, and increase of interconnection capacity through new interconnections, to allow for increase of effective competition and improvement of security of supply, without discriminating licensees and traders in different Energy Community Parties;

B) coordinate the development and implementation of the grid code by the transmission system operator and other market stakeholders;

C) coordinate the development of the rules governing the management of limited capacities.

In cooperation with other relevant national authorities, ERE shall have the right to enter into cooperative arrangements with other regulatory authorities from region countries to foster regional regulatory cooperation.

Montenegro

The Energy Regulatory Agency (RAE) was established by the Energy law from 2003, and its major competences are the following: licensing energy undertakings for carrying out energy activities, issuing of guarantees of origin for energy generated from renewable sources or high-efficiency co-generation, defining the status of a privileged producer of electricity from renewable sources, setting regulatory allowed revenue, prices and tariffs of energy undertakings, approving ten year development plans and investment plans for the transmission and the distribution systems, making decisions on complaints, dispute settlements, determining acts within its competences and providing consents on acts of energy undertakings, monitoring the operation and work of energy undertakings in the performance of licensed activities. The regulatory framework which is in force provides incentives for regional investments, among others, approved as part of development/investment plans.

The first auction office in the South East Europe is established in Montenegro - Coordinated Auction Office in South East Europe Ltd Podgorica (hereinafter: SEE CAO). SEE CAO has 8 shareholders, being the transmission system operators from Montenegro, Croatia, Bosnia and Herzegovina, Albania, Kosovo, FYROM, Greece, and Turkey. SEE CAO performs allocation of long term and daily physical transmission rights on 6 Bidding Zone borders between 7 Participating TSOs by applying Harmonised Allocation Rules, in line with EU Regulation 2016/1719 (FCA Network Code) and complying with EU Regulations 543/2013 (EMFIP) and 1227/2011 (REMIT).

In 2017 RAE approved two sets of rules for allocation of cross-border capacities regionally harmonized that are applied by the SEE CAO to all joint borders of the states whose transmission system operators are the founders of the SEE CAO. RAE also approved the Rules on the application of transparent procedures for cross-border capacity allocation and congestion management applied by the CGES directly.

Changes of the Energy law have been proposed to introduce Power exchange (BELEN) as a new energy subject in Montenegro with a task of running organized electricity market.

Technical assistance provided by Energy Community Secretariat aided in identifying and evaluating possible models of strategic partnership for future Montenegrin PX. After successful request for interest process and identification of interested parties all necessary conditions for final request for offer are in the final stage that will allow future PX to start the negotiations with potential strategic partner.

The reference legislation that defines cross border capacity allocation and trade is the Law on Energy (Official Gazette of Montenegro No 5/16 and 51/17) and the Law on cross border electricity and gas exchange (Official Gazette of Montenegro No 42/16). The same acts secure transposition of EU Third energy package. RAE is in charge of approval of market rules and issuing certification to transmission system operator (TSO) including supervision of certified TSO. Following the positive opinion of Energy Community Secretariat, RAE issued certificate to CGES in April 2018. Meanwhile, additional pieces of secondary EU legislation have been developed deeper elaborating cross border allocation and trade as a set of market and trade network codes, such as CACM (Commission Regulation (EU) 2015/1222), FCA (Commission Regulation (EU) 2016/1719) and EB (Commission Regulation (EU) 2017/2195). These regulations are still to be transposed in Montenegrin legislation.

Serbia

The Energy Agency of the Republic of Serbia (AERS) was established pursuant to the Energy Law 2004 (OJ RS 84/2004) as an independent regulatory authority with competences in electricity, natural gas and, to certain extent, oil sectors. The Agency was registered at the Commercial Court in Belgrade on June 16, 2005 and started working on August 1, 2005.

Afterwards, the role of the Agency was strengthened, and its jurisdiction was expanded, in particular by the Energy Law 2014 (OJ RS 145/2014). This Law transposes the provisions of the Third Package of the European Union Internal Energy market legislation into the Serbian legal system.

SEEPEX - the licensed Market operator for an organized electricity market/power exchange was established in July 2015 as a joint stock company where EMS (Serbian TSO) owns 75% shares while EPEX SPOT owns 25%. After the completed membership process for the members participation on SEEPEX first transactions have been made on February 17th 2016.

SEEPEX implemented business model which follows the success pattern of the west-European power exchanges – the operations of SEEPEX relies on the trading system ETS, used by EPEX SPOT for operating its own markets in Central Western Europe. Clearing and settlement are performed by the Clearing house ECC, providing SEEPEX members with a wide scale of benefits from high-level standards both in terms of trading and clearing services.

Exchange members (companies registered to trade on SEEPEX) submit their buy and sell orders using ETS platform (from 45 days before to 10:15 in day D-1). Order book closure is 10:15 and results are published on SEEPEX website by 10:30. Trading information is immediately sent to ECC for clearing purposes. Before 14:00 (D-1) ECC submits the schedules to EMS (as a firm schedule) and after 16:00 the settlement information to all clearing members. Clearing members are sending the settlement information to the Exchange members (via their corresponding settlement agents) and payment is done during delivery day D. TSO is responsible for physical delivery (00:00 – 24:00 on day D). In order to be registered on SEEPEX, Exchange member should regulate balance responsibility with EMS and sign appropriate contract with ECC and SEEPEX.

Beside its daily operations SEEPEX recognized Intraday product and Day-ahead market coupling projects as a crucial for further development of organized spot market. Currently SEEPEX is open for cooperation with all relevant stakeholders from the neighboring countries in order to introduce market coupling model which will lead to growth of European electricity market.

The Rules for Cross-Border Transmission Capacity Allocation have been adopted by the transmission system operator and approved by the Agency (Article 164, paragraph 2 and 3 of the Energy Law). With the approval of the Agency, the transmission system operator can also regulate the procedure and manner of allocation of rights to use cross-border transmission capacity and access to cross-border transmission capacity via a contract with transmission system operators of other countries, and/or with electricity market operators (Article 164, paragraph 4 of the Law).

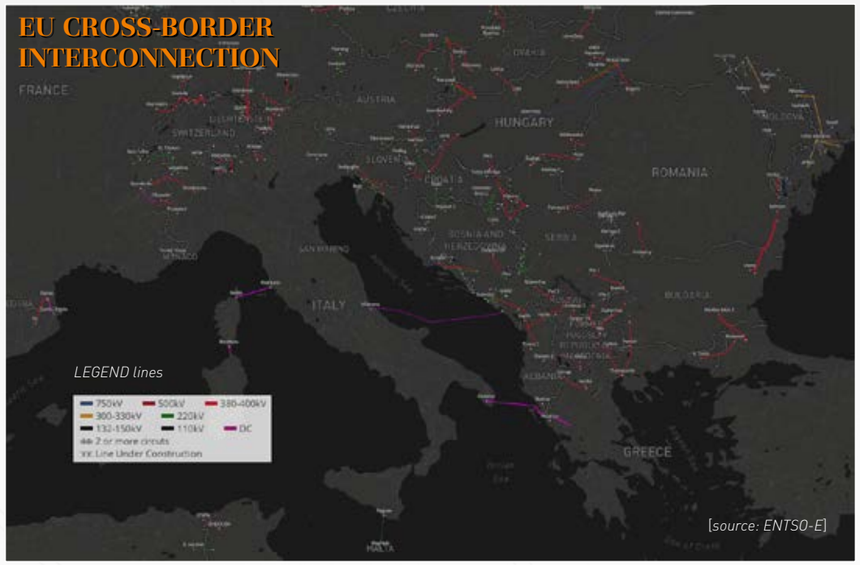
The Agency also has competences in terms of revenues arising from the cross-border capacity allocation. Namely, in line with Article 165, paragraph 7 and 8 of the Law, all the revenues arising from the cross-border capacity allocation can be used for the following purposes: 1) guarantee of availability of allocated capacity and 2) maintenance of increase in cross-border capacity via investment in network and especially via construction of interconnection lines. If these revenues cannot be used in these purposes, with the approval of the Agency, they can be used as the revenue which the Agency takes into account when adopting methodology for setting electricity transmission use-of-system charge up to the maximum level set by the Agency.

Market coupling in a nutshell

Essentially, market coupling is an agreement between transmission system operators (TSOs) and nominated electricity market operators (NEMOs) of two or more countries to optimize the allocation process of cross-border capacities. It requires sharing the data on bids and offers and interconnector capacities and a common algorithm to minimize the price difference between two or more areas, considering grid constraints.

Thus, market coupling maximizes the social welfare, avoids any artificial splitting of the markets, and sends the most relevant price signal for investment in cross-border transmission capacities.

Market coupling is a complex process both from a technical point of view, requiring the exchange and elaboration of data on prices and capacities within tight timelines and standards, and from a regulatory point of view with harmonized primary and secondary legislation to be set-up.



[source: ENTSO-E]

MAIN ACTIVITIES IN A COUPLED MARKET

NEMOs TASKS

PRE-COUPLING	COUPLING	POST-COUPLING
• Orders collection • Orders anonymization • Orders aggregation	• Price calculation • Orders matching • Capacity allocation	• Results validation • Order allocation • Price publication • Clearing and settlement • Congestion income calculation

TSOs TASKS

PRE-COUPLING	COUPLING	POST-COUPLING
• Receiving of long-term nominations • Capacity Calculation • Cross zonal capacity publication		• Results validation • Scheduled exchange calculation

WHERE ELECTRICITY CAN BE TRADED	• On the trading platform of a power exchange : market participants submit their offers and bids; when the market is cleared, a single market price is determined on the basis of the marginal bid. • In over-the-counter markets, bilaterally between two parties.
WHEN ELECTRICITY CAN BE TRADED	• In the **forward and future** markets: from years before up to the day before delivery. Forwards and futures are contracts to deliver a certain amount of electricity at a certain time in the future for a price agreed upon today. Futures are standardized contracts that can be further traded on power exchanges. Forwards are mainly traded bilaterally over-the-counter and are not standardized. • In the **day-ahead (DA)** market: at the time of closure of the DA market each market zone needs to be in balance meaning that scheduled generation needs to equal forecasted demand plus net export to other market zones. • In the **intra-day (ID)**: electricity is traded on the day of delivery and allows market participants to correct for deviations from their day-ahead nominations.
HOW ELECTRICITY CAN BE TRADED ACROSS MARKET ZONES	To transfer electricity from a market zone to another market zone, market players need to have access to the transmission capacity connecting those zones. Possible mechanisms for the allocation of capacity are: • **EXPLICIT ALLOCATION**: each network operator determines in advance the available transmission capacity; the capacity is allocated by means of an auction where the purchase offers are ordered according to the decreasing price and gradually accepted until saturation of the entire available capacity. The feature of this mechanism is that the transmission capacity is allocated separately from the energy to be transported, whose sale takes place later with bilateral contracts or through participation in the power exchange. After being purchased, capacity needs to be nominated in order to be used. • **IMPLICIT ALLOCATION**: both processes of capacity allocation and nomination are integrated with the energy market trading mechanism. With market coupling, various national power exchanges are coordinated through a common coupling algorithm, which implements matching rules of coupled markets and is supplied with all necessary market information. The algorithm then determines zonal prices, matched bids and offers and the bidding zone net position.
HOW TRANSMISSION CAPACITY IS ALLOCATED IN EU	In order to realize the EU electricity market several directives and regulations have been adopted by the EU Member states to set the legal framework for the EU electricity wholesale market. The completion of the EU electricity market implies the full implementation of the target model for DA and ID capacity allocation established by Regulation (EU) 2015/1222 of 24 July 2015: "Capacity should be allocated in the day-ahead and intraday market time-frames using implicit allocation methods, in particular methods which allocate electricity and capacity together. In the case of single day-ahead coupling, this method should be implicit auction and in the case of single intraday coupling it should be continuous implicit allocation [...]"
BENEFITS FROM EFFICIENT CAPACITY ALLOCATION	• Implicit auctions provide correct price signals in the presence of congestion. They ensure that, when the transport capacity of an interconnection is not fully exploited, energy prices in neighbouring markets are identical, whereas in case of capacity saturation (congestion) prices will differ, with energy flowing from the market area at a lower price to the one with a higher price. • Access to the market is simplified, as market player need to submit offers only on the power exchange. • Risks for operators is reduced, since it is no longer needed to purchase transport capacity before knowing its true value. • The netting of the flows in opposite direction is made possible.
WHAT IS THE ROLE PLAYED BY NRAS	• Ensuring the efficiency of the overarching process and the equal treatment of all the involved parties. • Approving legally binding terms and conditions or methodologies (TCMs) proposed by NEMOs and TSOs. • Monitoring the implementation of TCMs and enforcing them. • Deciding how costs borne for establishing and operating market coupling can be recovered.

EVOLUTION OF DAY AHEAD WHOLESALE MARKET COUPLING IN EU

Between 2006 and 2018 the electricity markets of 22 countries were coupled.

In 2006 the launch of Trilateral Market Coupling (hereinafter TLC) between France, Belgium and The Netherland was set.

In 2007 the DA markets of Spain and Portugal were coupled in the Iberian Electricity Market, MIBEL.

In 2009 the DA markets of Czech Republic and Slovak Republic were coupled.

In 2010 the market coupling of Central West European (hereinafter CWE) region was set, integrating the DA markets of The Netherlands, Belgium and France with Germany. In the same year, the Interim Tight Volume Coupling (hereinafter ITVC) between the Central West European region and the Nordic –Baltic region was started and it comprised 2 steps:

1) IN 2010 COVERING BOTH INTERCONNECTORS BETWEEN GERMANY AND DENMARK AND BALTIC CABLE BETWEEN GERMANY AND SWEDEN

2) IN 2011 THE SUBMARINE CABLE "NORNEDCABLE" BETWEEN NORWAY AND THE NETHERLANDS WAS INTEGRATED INTO THE CWE-NORDIC ITVC.

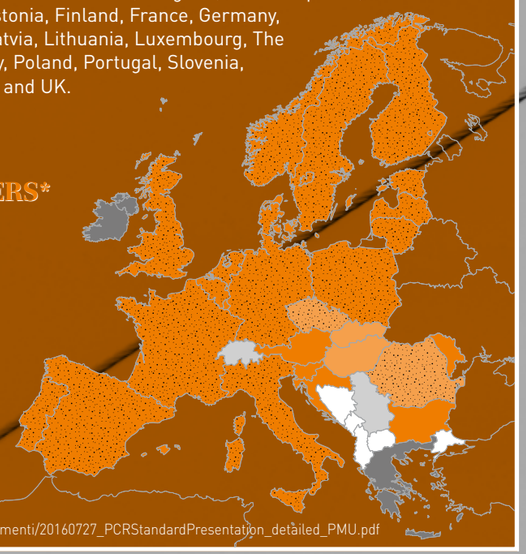
In 2011 the launch of the BritNed coupling linking the Great Britain market to the wider CWE region was set and Italy and Slovenia Market coupling was initiated.

In 2012 the 3M MC project was set with the objective to couple the electricity markets of the Central East European (hereinafter CEE) region of the following countries: Czech Republic, Slovak Republic and Hungary.

In 2014 a common synchronized platform was launched, namely the Price Coupling of Regions (hereinafter **PCR**), for DA markets of North West European (hereinafter **NWE**) and South West European (hereinafter SWE) regions integrating the regional coupling markets of each region. From 2015 the Italian-Austrian, Italian-French and Italian-Slovenian borders were coupled with the Multi-Regional Coupling (hereinafter MRC), linking the majority of EU power markets–from Finland to Portugal and Slovenia using PCR.

PCR is a market coupling project operated by several Power Exchanges (EPEX, GME, Nord Pool, OMIE, OTE and TGE) that is open to other EU PXs wishing to join. The project is focused on the delivery of a Market Coupling Operations Function (hereinafter MCO Function) as it is described in CACM Regulation 2015/1222. The governance structure of PCR is based on a Co-Ownership Agreement and a Co-Operation Agreement among PXs. The PCR solution uses one single algorithm (Euphemia) to calculate electricity prices across Europe. PCR is up to now used to couple the electricity markets of the following countries: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Italy, Latvia, Lithuania, Luxembourg, The Netherlands, Norway, Poland, Portugal, Slovenia, Romania, Spain, Sweden and UK.

PCR USERS AND MEMBERS*



- Markets using PCR: MCR
- Markets using PCR: 4MMC
- Markets PCR members
- Indipendent users of PCR
- Markets associate members of PCR

PCR
PRICE COUPLING OF REGIONS

* www.mercatoelettrico.org/It/MenuBiblioteca/Documenti/20160727_PCRStandardPresentation_detailed_PMU.pdf

All the photo are on www.unsplash.com
Cover by Denilo Vieira, p3 by Nick Nice,
p 4-5 by the American Public Power Association,
p 6-7 by Rodion Kutsaev, p 8-9 by Matthew Henry,
p 10-11 by Fre Sonneveld, p 12-13 by Neonbrand,
p 14 by Charlie Marusiak and p 15 by Antoine Boissonot.

ENERGY COMMUNITY MEMBERS