



## Italian Borders Market Coupling Consultation Paper

November-December 2014

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## Introduction

This document is aimed at giving a general presentation of the Italian Borders Market Coupling project and at listing specific questions for a Market Participants' consultation.

The document gives an overview of:

1. the main principles and functioning of the market coupling;
2. the timings and possible coupling scenarios;
3. the possible fallback solutions;
4. the price and bids caps on the Italian Borders electricity market;
5. the rollback organization.

Market parties are asked to answer some specific questions related to these topics, listed in Chapter 6. The consultation is held by IBWT Parties under the oversight of their relative National Regulator Authorities.

The consultation will be open from the **24/11/2014** to **05/12/2014**.

The answers to the consultation shall be addressed to the following email contact:

[italianborders.mc.consultation@eurogroupconsulting.fr](mailto:italianborders.mc.consultation@eurogroupconsulting.fr)

The start of the Go-live window is currently foreseen mid-February 2015. The borders part of the Go-Live will be communicated end of November 2014. The precise date for the GO-Live will be communicated in January 2015. The Go-Live is subject to the regulators' approval.

*Disclaimer: this Consultation Paper and the annexed documents have been developed as project documents and they are communicated to Market Participants for information purpose only. They do not bind any of the parties mentioned and they shall not be considered to have any contractual value.*

## 1. Day Ahead Market Coupling Main Principles

The Day-Ahead Market Coupling process consists of three main steps: the pre-coupling activities, the coupling with the run of the matching algorithm and finally the post-coupling activities.

In the following, for information purposes, a high level description of these steps is provided.

The price coupling algorithm that will be used for the Day-Ahead Market Coupling of the Italian Borders is the one developed in the framework of the NWE project and Price Coupling of Regions (PCR) initiative (Euphemia algorithm)<sup>1</sup>, which is in line with the target model outlined by ACER.

This algorithm is currently adopted for the MRC<sup>2</sup> coupled area.

For more details, reference can be made to the documents related to the ACER target model for the day-ahead timeframe (European Price Coupling) and to the cross-regional roadmap on Market Coupling<sup>3</sup> as well.

**In the pre-coupling phase:** Transmission System Operators (TSOs) calculate and match the Cross Zonal Capacities, i.e. the capability of the interconnected electricity transmission system to accommodate energy transfer between Bidding Areas, at the day-ahead timeframe. For the Italian Borders region, the Cross Zonal Capacities are computed according to a NTC/ATC-based approach and are expressed in MW for each hour of the day<sup>4</sup>. Computed Cross Zonal Capacities are then sent to the involved Power Exchanges (PXs) in order to be used as constraints in the run of the matching algorithm.

**In the coupling phase:** in each bidding zone, bids and offers from Market Participants are collected by the involved PXs and shared in a common order book. Bids and offers are then matched using the most up-to-date common matching algorithm called Euphemia developed in the framework of the PCR, taking into account that bids and offers from different Bidding Areas raise energy flows between the Bidding Areas and can therefore be matched only within the limits of the submitted Cross Zonal Capacities<sup>5</sup>. The resulting prices are then set, for each hour of the day and each Bidding Zone, by the marginal bids. If the Cross Zonal Capacities are not fully used (no congestion), the prices between two adjacent areas converge, otherwise they will differ. Finally the coupling results (prices and flows between areas) are cross-validated by PXs and TSOs and communicated to the Market Participants.

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<sup>1</sup> <http://www.epexspot.com/en/market-coupling/pcr>

<sup>2</sup> MRC : Multi Regional Coupling covering for the moment CWE, FR-UK, Nordic and SWE regions

<sup>3</sup> [http://www.acer.europa.eu/Electricity/Regional\\_initiatives/Cross\\_Regional\\_Roadmaps/Pages/1.-Market-Coupling.aspx](http://www.acer.europa.eu/Electricity/Regional_initiatives/Cross_Regional_Roadmaps/Pages/1.-Market-Coupling.aspx)

<sup>4</sup> TSOs of the Italian borders are currently working on D-2 capacity calculation project. Nevertheless there is no direct interdependence among this project and the go-live of the market coupling.

<sup>5</sup> This process is also called “implicit allocation”.

**In the post-coupling phase:** the Market Participants' orders are settled and the energy flows between the Bidding Areas are executed and shipped. In case of different prices between the areas, a congestion rent is generated, equal to the price difference times the energy flow between the areas. Finally, in line with the principles of congestion management included in the Regulation (EC) N° 714/2009, the congestion rent is collected by the Central Counter Parties (CCPs), forwarded to the Congestion Income Distributor (CID), and finally distributed to the TSOs.

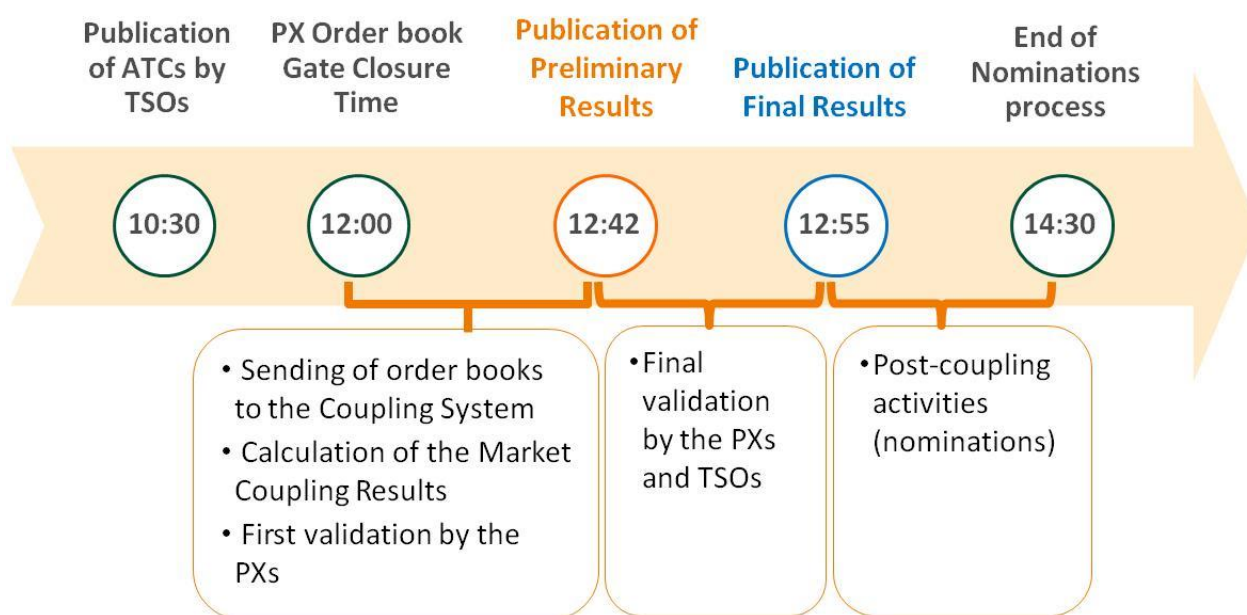
## 2. Timings and price coupling scenarios

Main timings and deadlines in the market coupling of the Italian Borders are compliant with the current timings of the MRC market coupling.

When these timings are different to those currently adopted at National level a specific approval process may be envisaged in order to align them to this new standard.

The Gate Closure Time (GCT) in Italy and Slovenia will evolve to 12:00 no earlier than one month before the go-live of Italian Borders Market Coupling.

Figure 1: IBWT price coupling main timings<sup>6</sup>



The IBWT procedures and timings have been drafted in order to be consistent with the CACM guideline.

They will be updated when the guideline will be in force in order to be adapted to the version released.

<sup>6</sup> Consequently Intraday timings both in respect of markets activity and capacity allocation have to be adapted and will be subject to National Regulator Authorities' approval.

The following figure shows the detailed timings and deadlines for the price coupling process in Normal situation (i.e. “Normal Day” scenario).

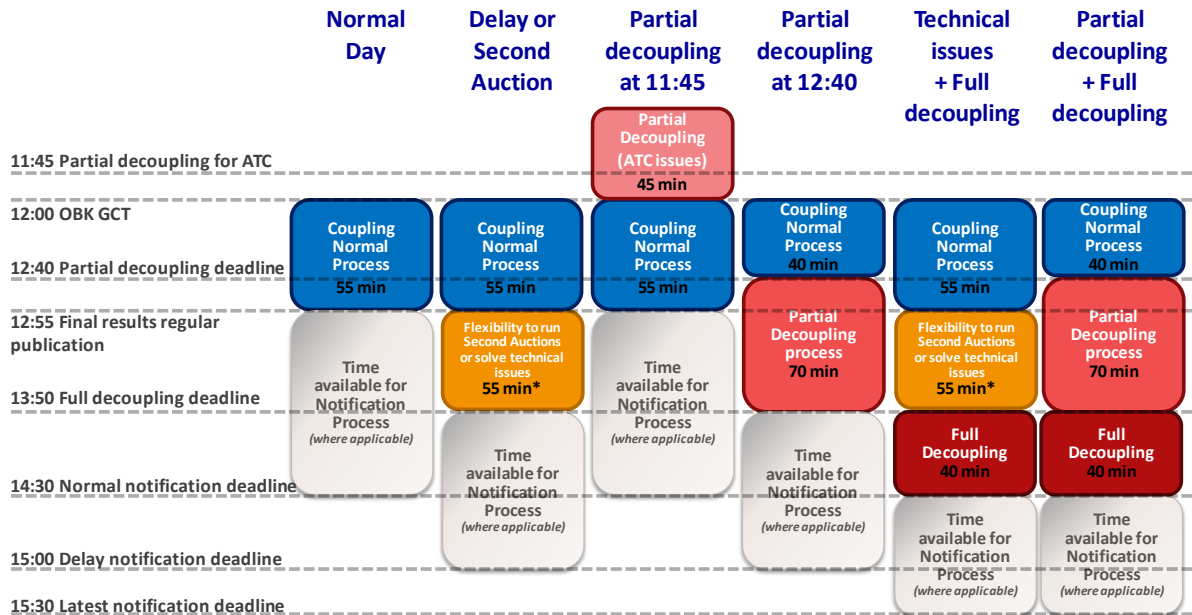
Figure 2: IBWT market coupling detailed timings and deadlines - Normal Day scenario



As showed, in normal situations the Gate Closure Time for the order books is at 12:00 CET. Final results are published before 13:00 CET.

The following scheme compares the timings of a Normal Day scenario with those in case of delay due to technical constraints or special market situations that may or may not lead to a partial decoupling (PD) or full decoupling (FD). The following deadlines for the Italian Borders market are shown for information purposes only.

Figure 3: comparison of market coupling scenarios



\*This is the maximum time which could be used to solve a technical issue in order to avoid a decoupling. If the technical problem is solved in less than 55 min, the next processes will start earlier.

As it can be observed, Market results are always given before 13:50 also in exceptional situations. If the issue is not solved before this deadline, a decoupling situation is declared (see further in chapter 3 – Fallback solution).

The description of the procedures and timings for the Fallback situation in case of decoupling are given in the next Chapter.

### 3. Fallback solution to allocate cross border capacities

In case the Day-Ahead Market Coupling cannot be run with the normal timings, it may be needed to declare decoupling situations and to allocate the cross border capacities via a fallback solution. Decoupling situations can be partial or full and the fallback solution consists always in allocating the cross-border capacities concerned via **Shadow Auctions operated by CASC.EU**.

A **Partial Decoupling** is a situation where one or more bidding areas and/or interconnectors are temporary not participating in the Day-Ahead Market Coupling while the remaining bidding areas/interconnectors still participate. Three (3) different types of Partial Decoupling situations exist depending on the reason leading to the decoupling:

1. Partial Decoupling during the Pre-Coupling process (**11:45 deadline**)

- If there are no Cross-Zonal Capacities available for running the Market Coupling, a Partial Decoupling will be declared at 11:45. Consequently, one or more interconnectors will be removed from the Market Coupling Session.
- For the interconnectors that are decoupled, the fallback allocation mechanism consists in Shadow Auctions via CASC. The results of the Shadow Auctions are published once the decoupling is declared. Market Participants can still update their orders on the PX trading platform until 12:00 (order book GCT).
- For the interconnectors that remain coupled, the Market Coupling session continues and the Regular Publication time of the Market Coupling Results is maintained.
- In the IBWT region, any of the interconnectors may be decoupled independently of one another without impacting the remaining IBWT interconnectors that remain coupled.

*On the assumption that all Italian Borders countries are coupled:*

Decoupled IBWT interconnector(s)	IBWT Interconnectors that remain coupled
IT-AT	IT-CH, IT-FR, IT-GR and IT-SI
IT-CH	IT-AT, IT-FR, IT-GR and IT-SI
IT-FR	IT-AT, IT-CH, IT-GR and IT-SI
IT-GR	IT-AT, IT-CH, IT-FR and IT-SI
IT-SI*	IT-AT, IT-CH, IT-FR and IT-GR

*\*Shadow auctions will be triggered on the IT-SI border only if ATCs cannot be sent to GME or BSP but can be sent to CASC*



## 2. Partial Decoupling during the Coupling process (**12:40 deadline**)

- If the Market Coupling is delayed due to a missing PX order book or other technical/market issues related to one particular PX, a Partial Decoupling will be declared at 12:40.
- Consequently, all the interconnectors and bidding areas related to that PX are removed from the Market Coupling session.
- For the interconnectors that are decoupled, the fallback allocation mechanism consists in Shadow Auctions via CASC. The results of the Shadow Auctions are published once the decoupling is declared. For the decoupled bidding areas, a local auction will be run by the relevant PXs.
- For the bidding areas that remain coupled, the Market Coupling session continues as usual but the publication of the Market Coupling Results is delayed. PXs are entitled to reopen their order books towards the Market Participants for **10 minutes**.
- **In case one of the IBWT PXs is decoupled, the consequences at the interconnector level are the following (for the Italian Borders only):**

*On the assumption that all Italian Borders countries are coupled:*

Decoupled IBWT PX	Decoupled IBWT interconnector(s)	IBWT interconnectors that remain coupled
EPEX SPOT*	IT-CH, IT-AT, IT-FR	IT-SI, IT-GR
EXAA*	IT-AT	IT-SI, IT-FR, IT-CH, IT-GR
GME**	IT-SI, IT-FR, IT-CH, IT-AT, IT-GR	NONE
LAGIE	IT-GR	IT-SI, IT-FR, IT-CH, IT-AT

*\*Depending on Austrian NEMO*

*\*\*Depending on the problem, GME may remain coupled with BSP*

## 3. Partial Decoupling known in advance (**10:30 deadline**)

- The Partial Decoupling known in advance may be declared at 10:30 if the previous Market Coupling Session has resulted in a Partial/ Full Decoupling and the technical issue that caused it is considered to be too complex to be solved within the day.
- In this case, the Market Participants will have more time to place orders for the Shadow Auctions. The results of the Shadow Auctions will be published as of 11:25.
- The PX order book GCT is maintained at 12:00. PXs will run Local Auctions for the decoupled bidding areas.

A **Full Decoupling** is a situation where all the bidding areas and interconnectors that are implicitly coupled are not participating in the Day-Ahead Market Coupling for delivery on the next day. Two (2) different types of Full Decoupling situations exist depending on the reason leading to the decoupling:

1. Full Decoupling known during the current Market Coupling Session (**13:50 deadline**)
  - If the Final Market Coupling Results are not available at 13:50, a Full Decoupling will be declared.
  - Consequently, all the interconnectors and bidding areas are decoupled and the fallback DAM allocation mechanism will be used (Shadow Auctions via CASC).
  - As a result, **all PXs will reopen their order books for 20 minutes and will run local auctions for their own bidding areas.**
  - The Local Market Results will be published so as to allow the completion of the nomination process within the deadlines (see related slides).
2. Full Decoupling known in advance (**10:30 deadline**)
  - The Full Decoupling known in advance may be declared at 10:30 if the previous Market Coupling Session has resulted in a Partial/ Full Decoupling and the technical issue that caused it is considered to be too complex to be solved within the day.
  - In this case, the Market Participants will have more time to place orders for the Shadow Auctions. The results of the Shadow Auctions will be published as of 11:25.
  - The PX order book GCT is maintained at 12:00. PXs will run Local Auctions for the decoupled bidding areas.

A **Shadow Auction** is an explicit allocation of cross border capacities which gives rights to Market Participants which obtain these rights to schedule cross border exchanges between two Bidding Areas that are decoupled.

The following mechanism applies:

- Market Participants submit Shadow Auction default bids
- ATCs are submitted by TSOs to CASC on a daily basis

- In case of technical problem in the pre-coupling or coupling process, decoupling risk is announced. This message should enable MPs to update their bids.
- Shadow Auctions are run in parallel with the Market Coupling session, starting 10 minutes before the decoupling deadline. During this process the bids can no longer be updated.
- After (partial/full) decoupling is announced, Shadow Auction results publishing starts.
- Each PX re-opens its order book to enable MPs to adapt their bids based on the Shadow Auction Results (10' in case of partial decoupling and 20' in case of full decoupling).

In order to participate in this fallback mechanism, the Market Participants have to be registered with CASC.EU.

Further information is available on the website of CASC.EU ([www.casc.eu](http://www.casc.eu)).

### **IT-SI Specificities regarding Decoupling**

Only in case of partial decoupling occurring during the coupling process and due to technical problems which prevents the integration of Slovenian market order book into the coupling system, fallback solution for allocation of capacity on the Slovenian-Italian border cannot be triggered.

On the other hand, in case of problems which could lead to full decoupling in case of failure of applying the backup solution on IBWT borders, Italian and Slovenian TSOs and PXs have operational advantage to remain coupled bilaterally on IT-SI border, even if Decoupling is declared for the Italian borders.

In case of full decoupling or GME partial decoupling, Market Participants will be notified by BSP, GME and CASC.EU on decision to trigger bilateral coupling or Shadow Auction on IT-SI border.

## 4. Price and bids limits

Different price limits and bid limits co-exist on the power markets involved in the Italian Borders Market Coupling project.

This situation is resumed in the following scheme.

### Price caps and bid caps



- In a coupling regime, effective market results price limits for the entire coupled area are, respectively, the higher and lower bounds among bid limits adopted in any of the coupled hub.
- Therefore, in a coupling scenario, lower bound of **Market results price limits on GME and BSP** may be lower than lower bound of bid limits adopted by GME and BSP (0 €/MWh), due to lower bound of bid limits adopted by adjacent markets (-500€/MWh).

	Market results Price Limits	Bid limits
BSP	-500/+3000	0/+3000
EPEX (France)	-500/+3000	-500/+3000
EPEX (Switzerland)	-500/+3000	-500/+3000
EPEX (Austria)	-500/+3000	-500/+3000
EXAA* (Austria)	-150/+3000	-150/+3000
GME	-500/+3000	0/+3000
LAGIE* (currently)	0/+150	0/+150

\*EXAA and LAGIE will not be part of the Market Coupling that will Go-Live starting mid-February 2015

Different price and bids limits arise from different evolution of the respective electricity markets, and are closely related to the diversity of bids characteristics in each market, on the structure of the markets itself and of the electricity system, on the existence of capacity remuneration mechanisms, and on the specificities of renewable subsidies (such as feed-in tariffs) and other specific national energy policies.

IBWT parties are aware about the final scope of establishing an alignment in the structure of Price limits as requested by the provisions of the Guideline on Capacity Allocation and Congestion management<sup>7</sup>. To this aim, the IBWT parties are evaluating the modalities to apply, in a further stage of development of the project, a complete alignment within the limits of price limits.

<sup>7</sup> As reference, please check Art. 40 of the draft version of the CACM Guideline.

## 5. Rollback organization

During the first two (2) months after the go-live, if the TSOs and/or the PXs are facing regular problems causing delay in the results publication and potentially decoupling situations, a Rollback Situation can be triggered to avoid persistent uncertainties for Market Participants. The Rollback Situation will end with the resolution of the problems.

Market Participants will be informed in advance, at least one day for the following day, when the Rollback Situation is triggered and when the normal configuration is recovered. Should the Rollback Situation be triggered, an expected duration of this situation will be communicated at that time.

This Rollback Situation consists in organizing on the Italian borders (except on the SI-IT border where a bilateral Market coupling will be kept) explicit daily auctions in the morning.

The daily explicit auctions will be performed by CASC as follows:

- 09:30 - Publication of the Daily Auction specifications (at the latest)
- 10:00 - Closure of the bidding period
- 10:15 - Publication of the results

Explicit nominations with the concerned TSOs will have to be done before 14:30.

The decoupled bidding area will still have their fixing at 12:00 (noon), simultaneously with the coupled bidding area.

## 6. Questions

When answering to the public consultation, Market Participants are asked to address specifically the following questions:

1. What is your opinion on the main principles of the Italian Borders Market Coupling, as explained in Chapter 1?
2. What is your opinion on the main timings and price coupling scenarios, as explained in Chapter 2?
3. What is your opinion on the fallback solutions described in Chapter 3 and more specifically on the implementation of Shadow Auctions?
4. What is your opinion on the future evolution of price and bids caps described in Chapter 4?
5. What is your opinion on the Rollback organization described in Chapter 5?
6. What any other future evolution and improvement on the proposed Italian Borders Market Coupling do you recommend?

The answers to this consultation will be provided to the National Regulators together with all the documents to be approved before the Go-Live of the project. The collected answers will be used also to inform on future decisions to be taken for possible evolutions of the current arrangements of the project. The replies may be treated as confidential if requested but in any case the answer will be transferred to NRAs.

## Glossary

Bidding Area	Bidding Area means the largest geographical area within which Market Participants are able to exchange energy without Capacity Allocation (e.g. France, Greece, Slovenia, Switzerland and Italian areas are separated Bidding Areas)
Cross Zonal Capacities (CZC)	The capability of the interconnected electricity transmission network to accommodate energy transfer between Bidding Areas. It can be expressed either as NTC value or flow based parameters, and takes into account operational security constraints
Price Cap	The maximum and minimum price at which matched orders can be settled on the day-ahead electricity price
Bid Cap	The maximum and minimum price for orders on the day-ahead electricity price
Shadow Auction	System that enables to organise explicit auctions for the Day Ahead Capacity Allocation after Full Decoupling or Partial Coupling pursuant to the Fallback procedures
Special Market Situation	A market situation which requires specific measures, such as for example handling of max price curtailment situations for instance calling a second auction as used by EPEX

## List of Annexed documents

### *Public documents:*

- Italian Borders Market Forum on 16/07/2014 support presentation

<http://www.casc.eu/en/News--Events/Events/IBWT-Market-Forum>

## External Resources

- PCR and Euphemia Public Description

<http://www.epexspot.com/en/market-coupling/pcr>

<http://www.mercatoelettrico.org/En/Mercati/MercatoElettrico/PCR.aspx>

- Conclusions and minutes of AESAG meetings

[http://acernet.acer.europa.eu/portal/page/portal/ACER\\_HOME/Stakeholder\\_involvement/AESAG](http://acernet.acer.europa.eu/portal/page/portal/ACER_HOME/Stakeholder_involvement/AESAG)

- Conclusions and minutes of Implementation Group and Stakeholder Group meetings of the CSE region

[http://www.acer.europa.eu/Electricity/Regional\\_initiatives/Meetings/Pages/default.aspx](http://www.acer.europa.eu/Electricity/Regional_initiatives/Meetings/Pages/default.aspx)