Design and Implementation of CRIDAs and XBID

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"Market Reform Plan"

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Introduction

Why IDM coupling?

With coupled operation of IDM:

- Greece will abandon the 3 local intraday auctions (LIDAs) towards the Complementary Regional Intra-Day Auctions (CRIDAs) and continuous trading (XBID) for flexible adjustments for market participants
- Auctions are kept in order to provide a market value for the cross-border capacity that is a scarce resource
- Intraday coupling pilot project is a positive and effective tentative for an early and voluntary IDAs implementation

CRIDA Implementation

- Replacement of Local Intra-Day Auctions (LIDAs) with Complementary Regional Intra-Day Auctions (CRIDAs)
- Foreseen in Article 63 (2) of CACM Regulation
- Already described in the approved Day-Ahead and Intra-Day Trading Rulebook
- Borders:
  - Italian Bidding Zones
  - Between Italy and Slovenia
  - Between Italy and Greece
- Go-Live target: **21 September 2021** (together with XBID 3rd wave Go-Live)

Complementary Regional Intra-Day Auctions (CRIDAs)

Regulatory provisions

- Allocation of interconnection capacities
  - 1st phase : LIDA – currently no allocation
  - **2nd phase : CRIDA (regional coupling) – implicit with IT**
  - 3rd phase : IDA (European coupling) – implicit with IT, BG

- Auctions with marginal pricing
- Hourly MTU
- 3 Auctions per Delivery Day
- Algorithm: EUPHEMIA

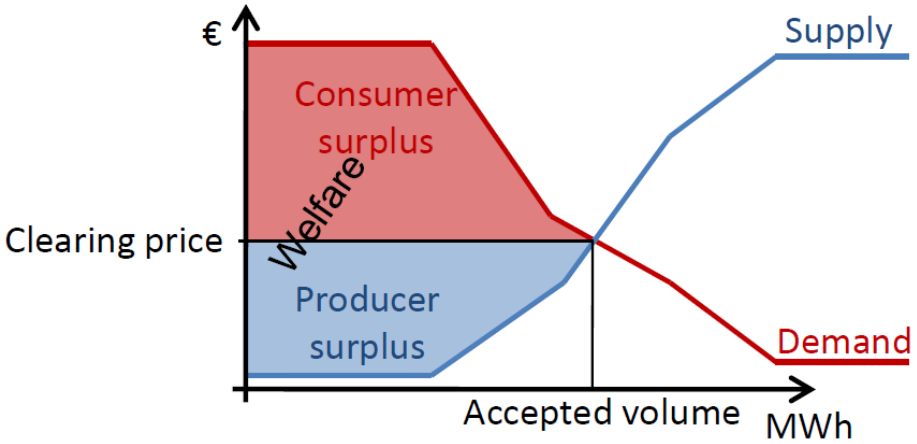
- Asset-based participation
- Voluntary for participants

Market Participation

Participant	Asset
Producer	Generating Unit Pumping Unit
RES Producers / RES Aggregator Last Resort RES Aggregator	RES Portfolio (Dispatchable & Non-Dispatchable)
Supplier / Self-Supplying Consumers	Load Portfolio (differentiated per Voltage Level)
Traders / Suppliers / Self-Supplying Consumers	(non-coupled) Interconnection
TSO	Transmission System Losses
RES & GO Operator	RES FiT Portfolio Rooftop Photovoltaics Disp. High Efficiency CHP Unit

Algorithm (EUPHEMIA)

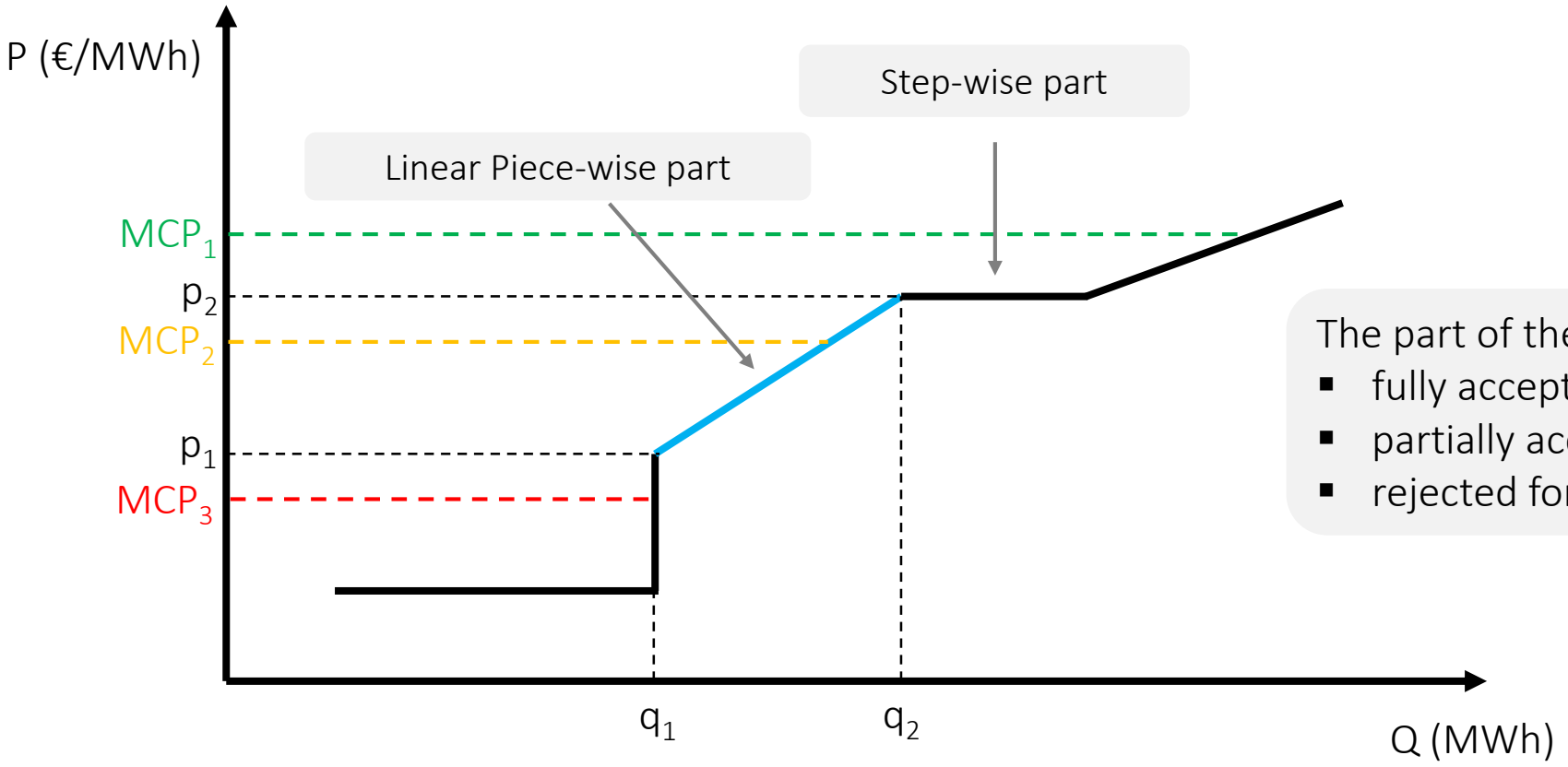
- Algorithm that solves the market coupling problem on SDAC perimeter
- The solution maximizes the social welfare
  - Overall welfare increases
  - Efficient cross-border capacity allocation
  - Most competitive price will arise
- EUPHEMIA output
  - Accepted Orders
  - Market Clearing Price (MCP) per Bidding Zone
  - Net position per Bidding Zone
  - Flows per interconnection



Order Types

- **Only Hybrid Orders**
- Characteristics
  - Type (Sell/Buy)
  - Defined for a single MTU
  - Monotonic Curve constructed by defining Quantity-Price points
- Local Constraint
  - Each Hourly Hybrid Order may include up to (50) segments for each MTU
- Acceptance Rules
  - The part of the sell (buy) curve that is submitted with price lower (higher) that the MCP is accepted
  - The part of the sell/buy curve that is submitted with price equal to the MCP is partially accepted

Order Types



The part of the sell curve $p_1q_1 \rightarrow p_2q_2$ is

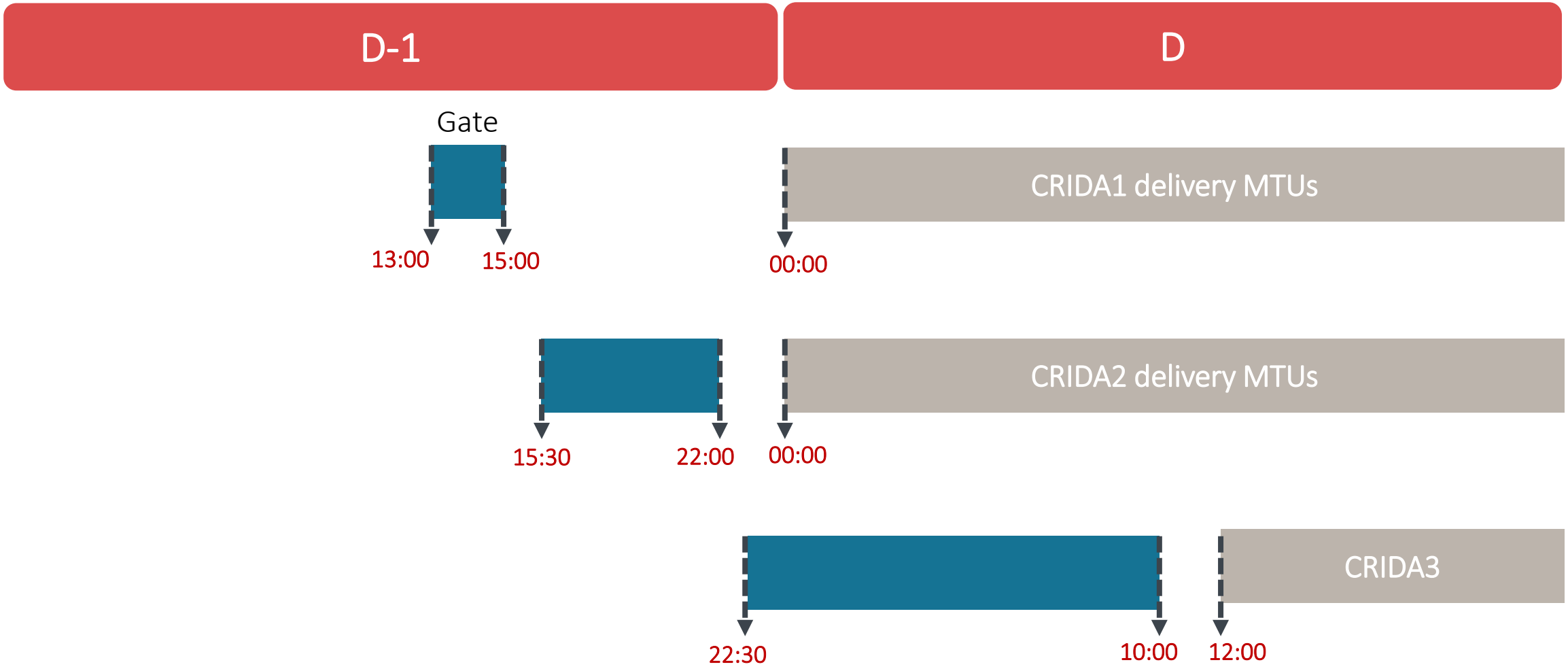
- fully accepted for MCP_1
- partially accepted for MCP_2
- rejected for MCP_3

Price Limits

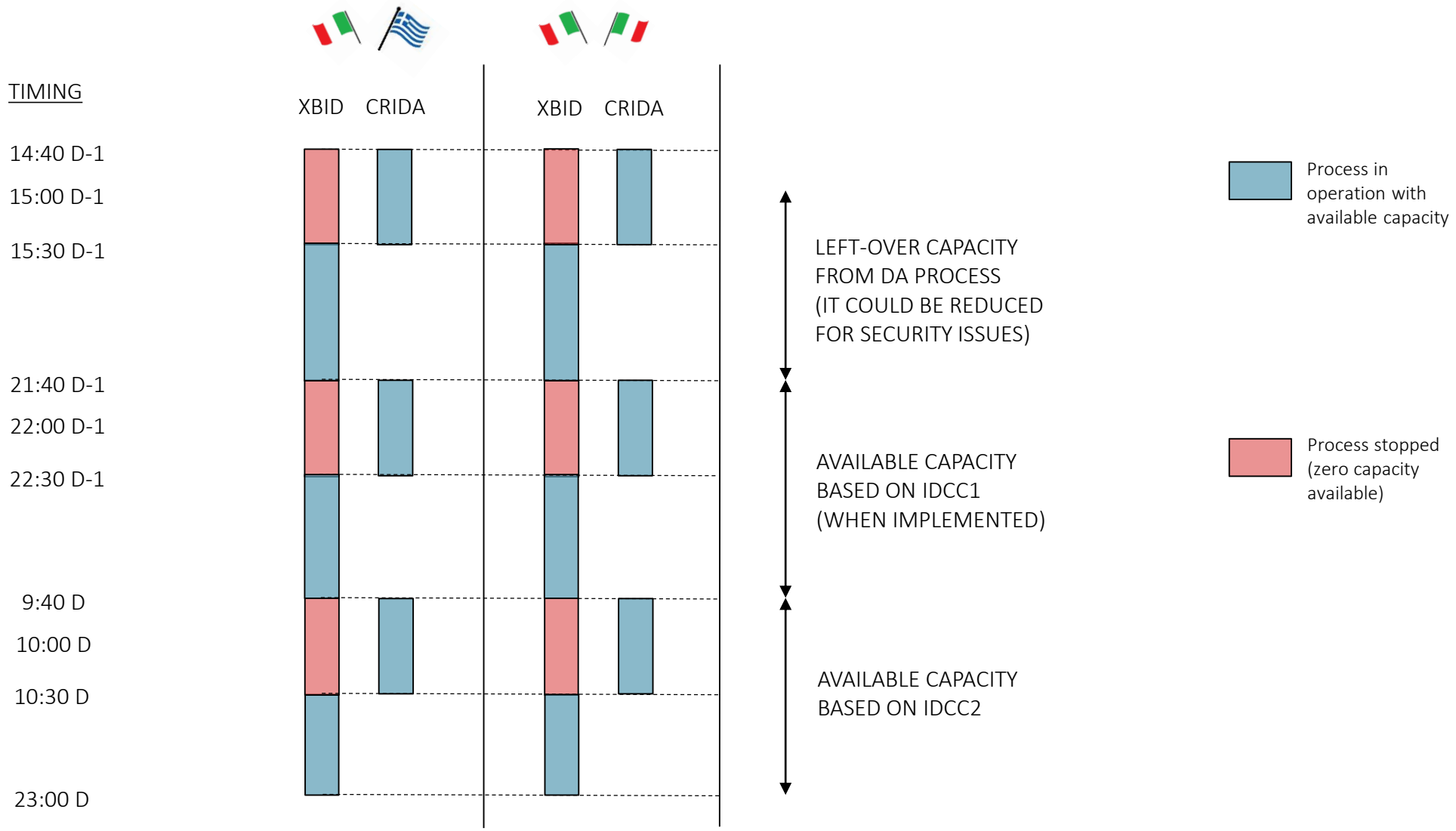
Price Limits in €/MWh

CRIDA		XBID	
min	Max	min	Max
-9999	9999	-9999	9999

Timeline


D-1
D
Gate
13:00
15:00
00:00
CRIDA1 delivery MTUs
15:30
22:00
00:00
CRIDA2 delivery MTUs
22:30
10:00
12:00
CRIDA3

Offered Capacity in CRIDAs – XBID GR-IT halting



Continuous Trading (XBID)

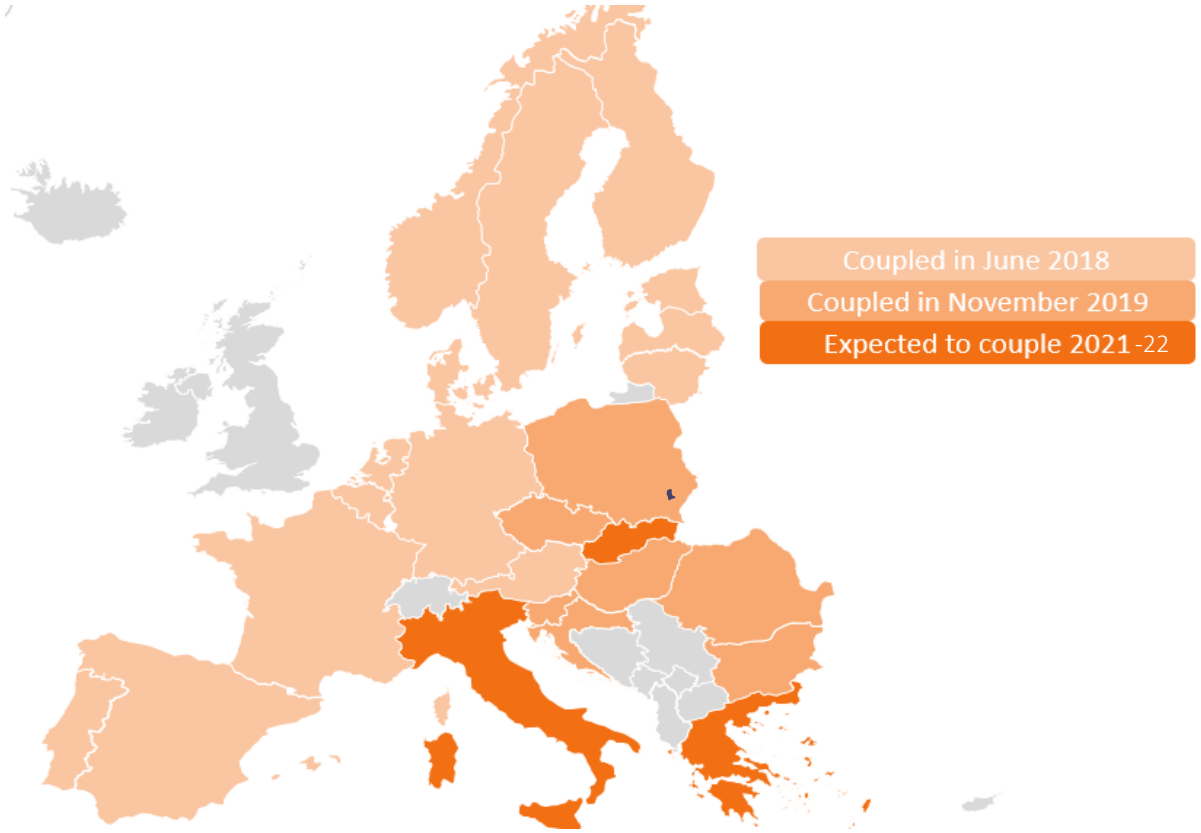
Continuous Trading

Continuous Trading represents a significant step forward towards the European target model and a full implementation of CACM on Greek Bidding Zone borders

Significant change in market participants behavior

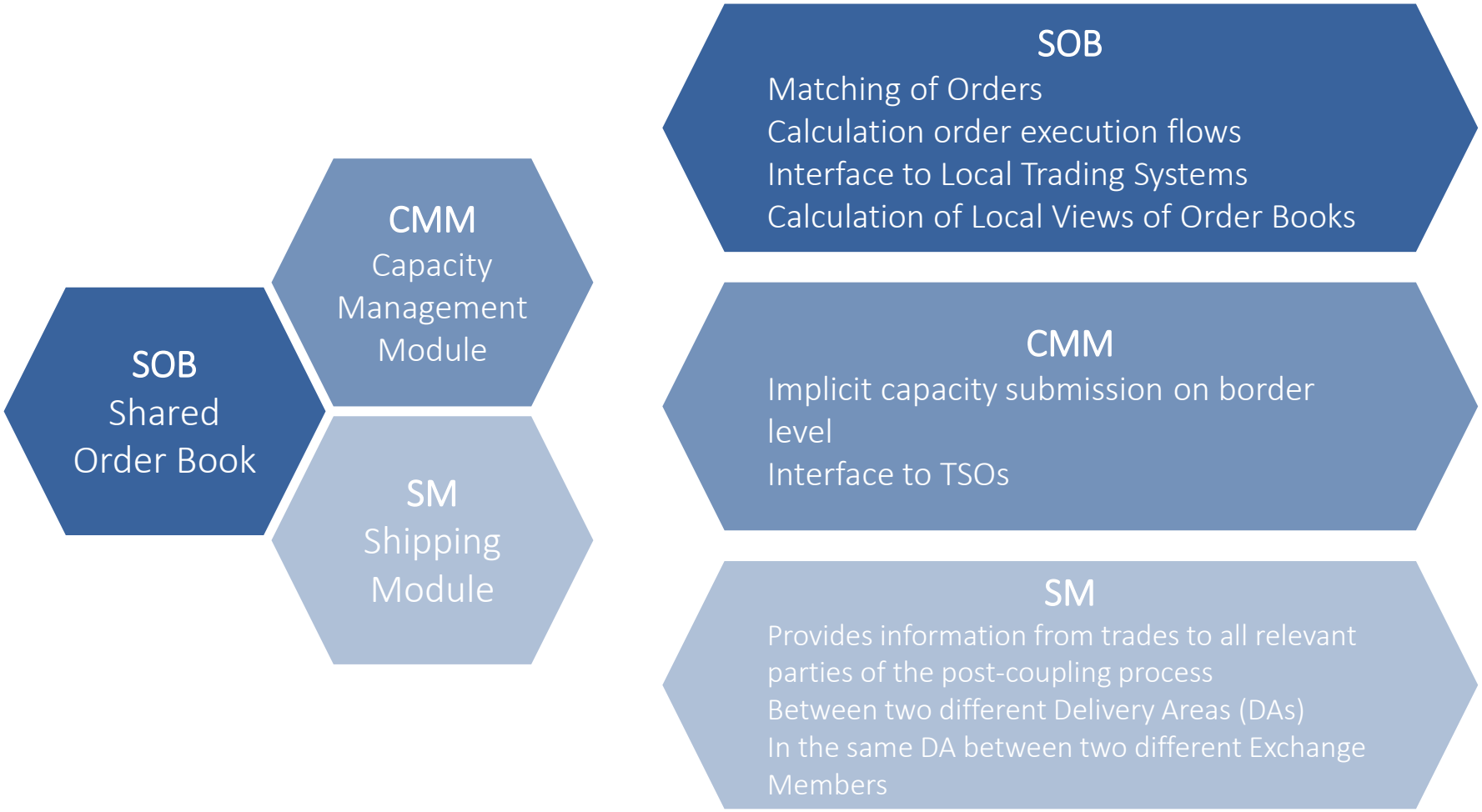
- Trading room open 24/7

XBID extension in EU

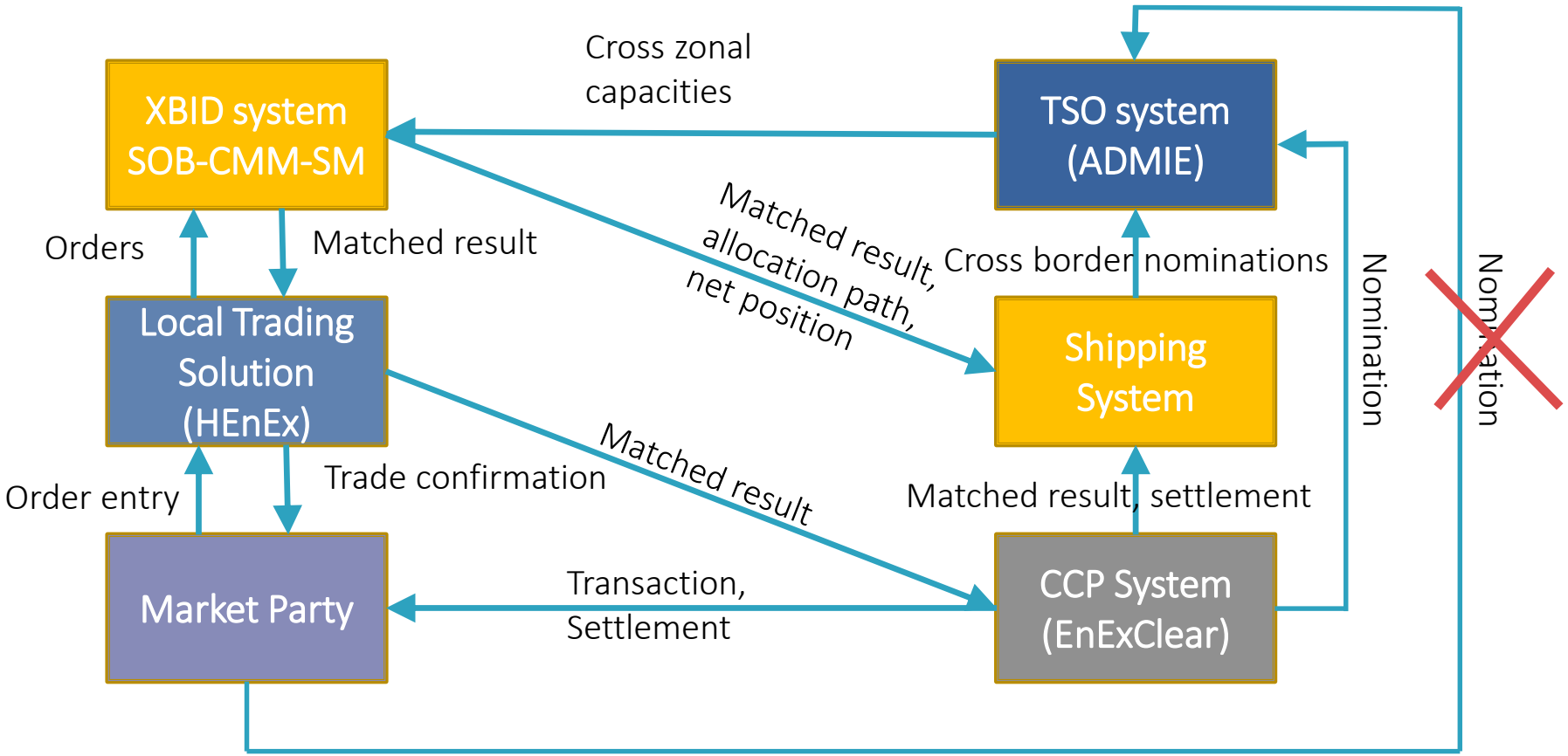


- **1st go-live** (12 June 2018): Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Latvia, Lithuania, Norway, the Netherlands, Portugal, Spain and Sweden.
- **2nd Go-live** (20 November 2019): Bulgaria, Croatia, Czech Republic, Hungary, Poland, Romania and Slovenia.
- **3rd Go-live** (planned for Sep 2021): Italy
- **4th Go-live** (planned for Mar 2022): Greece, Bulgaria

XBID Systems



High-Level Architecture



Local Regulatory provisions

- Continuous trading
- MTU duration: **60min**
- Algorithm: XBID
- Products
  - 60min products
  - User-defined Blocks
- Allocation of IT, BG interconnection capacity via continuous trading algorithm

- Asset-based participation
- Voluntary for participants

Market Participation

Participant	Asset
Producer	Generating Unit Pumping Unit
RES Producers / RES Aggregator Last Resort RES Aggregator	RES Portfolio (Dispatchable & Non-Dispatchable)
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Execution Specifications

Order type	Execution Restrictions	Validity Restrictions	Predefined	User-Defined
Regular predefined	NON (None) IOC (Immediate-or-Cancel) FOK (Fill-or-Kill)	GTD (Good Till Date) GFS (Good For Session)	Yes	No
Regular user-defined block	AON (All-or-Nothing)	GTD (Good Till Date) GFS (Good For Session)	No	Yes
Iceberg	NON (None)	GTD (Good Till Date) GFS (Good For Session)	Yes	No

Price Limits

Price Limits in €/MWh

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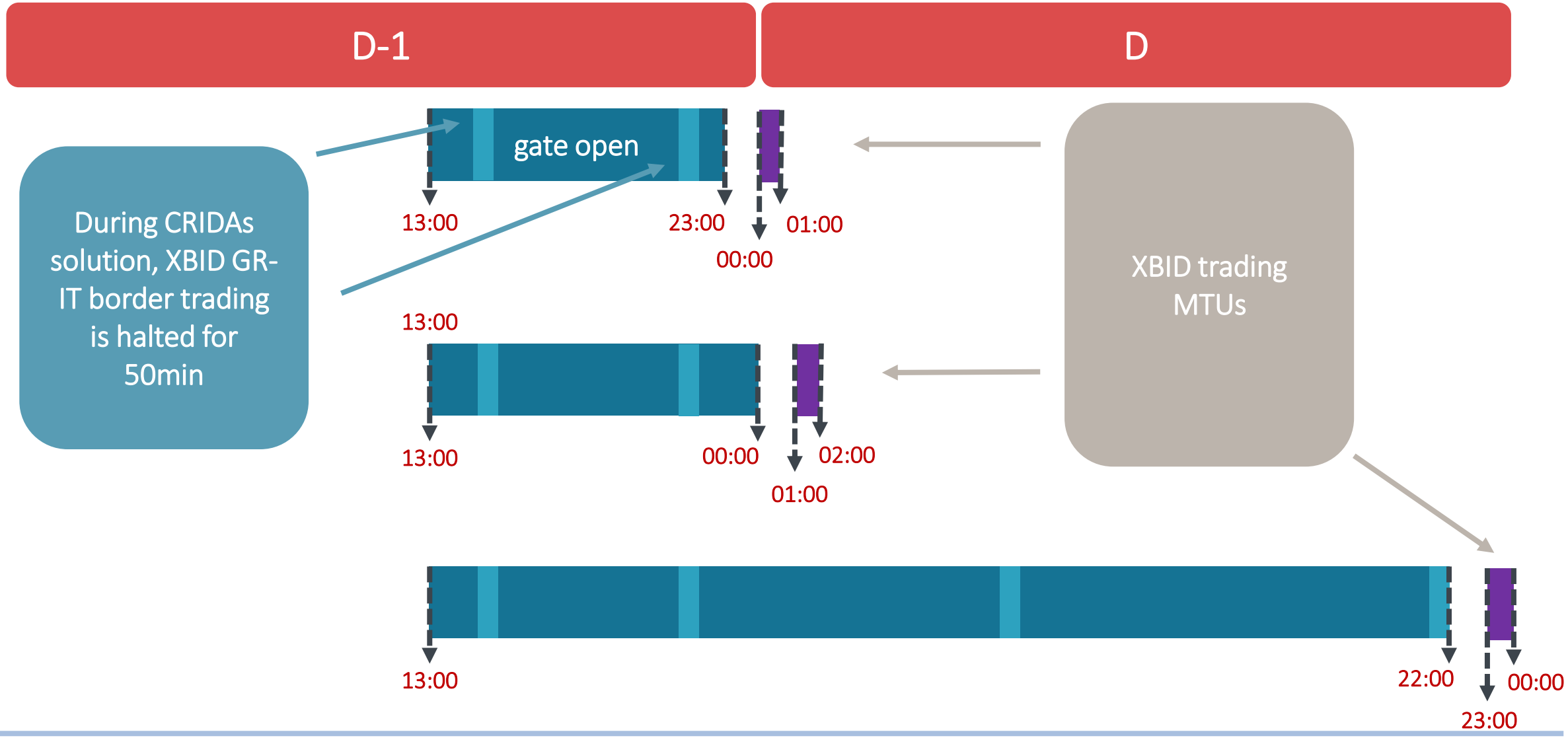
Timeline


D-1
D
During CRIDAs solution, XBID GR-IT border trading is halted for 50min
gate open
13:00
23:00
00:00
01:00
XBID trading MTUs
13:00
13:00
00:00
01:00
02:00
13:00
22:00
23:00
00:00

Next steps

Next Steps

CRIDAs

- DAM & IDM Trading Rulebook amendment (public consultation finished on 20/07)
- Acceptance Tests / Trial Period of CRIDA (Sep 2021)
- Go-Live: 21/09/2021

XBID

- Dedicated workshops for XBID will take place starting from September 2021
- Testing within LIP14 framework (starting from Oct 2021)
- API technical description (Nov 2021)
- Testing with Market Participants for XBID will be announced
- DAM & IDM Trading Rulebook amendment (in progress)

EnEx
Energy Exchange Group

Thank you for your attention