Price Coupling Algorithm
&
Continuous Trading Matching Algorithm

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CACM Regulation

• **Chapter 4 – Algorithm development**
  • Article 36 – General provisions
  • Article 37 – Algorithm development

• **Chapter 5 – Single day-ahead coupling**
  • Article 38 – Objectives of the price coupling algorithm
  • Article 39 – Inputs and results of the price coupling algorithm
  • Articles 40-50 – Products, max/min prices, gate times, firmness, capacity pricing, schedules, back-up, fallback...

• **Chapter 6 – Single intraday coupling**
  • Article 51 – Objectives of the continuous trading matching algorithm
  • Article 52 – Results of the continuous trading matching algorithm
  • Articles 53-63 – Products, max-min prices, gate times, firmness, capacity pricing, schedules, CRIDAs...
Legal background - objectives

Price coupling algorithm
- Products
- Back-up
- Max/min prices
- Gate times
- Scheduled exchanges
- Capacity pricing
- Fallback

Continuous trading matching algorithm
- Products
- Max/min prices
- Gate times
- Scheduled exchanges
- Capacity pricing
- CRIDA

Repeatable, scalable
Maximises economic surplus
Marginal pricing, uniform BZ price
Efficient price formation

DAY-AHEAD

INTRADAY
Connection to other T&C or methodologies

• MCO Plan
  • NEMOs are responsible for operation and development of:
    • Price coupling algorithm (Euphemia)
    • Continuous trading matching algorithm (XBID)
  • NEMOs’ other responsibilities
    • Max/min prices, back-up, clearing and settlement etc.
• Products
  • NEMOs responsible for the algorithm accommodating all products
  • Complex products in day-ahead deteriorate performance
• Max/min prices
• Back-up, fallback
• Scheduled exchanges
• Capacity pricing (preference for implicit)
• Gate times
Algorithm decision

- February 2017 – the last regulatory authority received the Algorithm proposal (including the day-ahead and intraday requirements) from all NEMOs (in cooperation with TSOs)
- August 2017 – the last regulatory authority requested an amendment from all NEMOs
- December 2017 – all NEMOs submitted the amended proposal to all regulatory authorities
- January 2018 – all regulatory authorities referred the amended proposal to the Agency for decision
- July 2018 – the Agency decided on the amended proposal

18 months
NEMOs (TSOs)
Proposal preparation
+ 6 months
NRAs
Approval/amendment
+ 2 months
NEMOs
Amended proposal
+ 2 months
NRAs
Approval/referral
+ 6 months
ACER
Decision

Article 9(6)(g)
Process & mandate

Article 9(9-10)
Process & content

Article 37-39
Content & timing

Article 9(11-12)
Process

Article 8(1) of
713/2009
+ 6 months
Discussed algorithm methodology issues

- Quality of the proposal
- Scalability
- Repeatability
- Algorithm performance
  - Deterioration prevented by corrective measures
    - Products limitation
    - Requirement limitations
  - Indicators
    - Welfare
    - Number of PRBs
    - Volumes, prices
    - Performance thresholds
Discussed algorithm methodology issues

• **Governance NEMOs/TSOs**
  - Requests for change
    - Decision by NEMOs in cooperation with TSOs
    - Issues with implementation of regulatory requests
  - Annexed Change control methodology
    - Categories of changes

• **Scheduled exchanges**
  - NEMO trading hubs are not defined by CACM
  - Scheduling area (with at least one NEMO trading hub)
  - Special case of Luxemburg
Discussed algorithm methodology issues

- **Transparency**
  - Publishing change control methodology
  - Publishing list of corrective measures
  - Algorithms public description
  - Algorithm performance report
  - Scalability report
  - Report on incidents + back-up + fallback
  - Report on R&D
  - Report on corrective measures
  - Report on volumes and prices
  - Report on decisions and requests for change
Discussed algorithm methodology issues

• **Annexes**
  • Requirements for day-ahead
    • Advanced hybrid coupling
  • Requirements for intraday
  • Change control methodology
  • Algorithm monitoring methodology

• **Language**
Thank you for your attention!