Experiences on operation of IBEX

OPERATION OF ENERGY EXCHANGES OF EASTERN AND WESTERN EUROPE
AGENDA

- About IBEX
- Operation of Energy Exchanges
- Progress on implementation of EU Network Codes
- IBEX expectations contributing to the Regional Gas Market Development
- One regional energy exchange taking part in the future market development
About IBEX Milestones

**10.01.2014**
Incorporation of the “Independent Bulgarian Power Exchange” EAD as a 100% owned by BEH EAD subsidiary.

**01.06.2014**
Launch of the selection process for the vendor of the service for operation of a power exchange market.

**18.05.2015**
Launching the process of association of IBEX to the European organizations governing the integration process - PCR, MRC

**31.03.2014**
Obtaining license for “Power exchange market organization” from EWRC.

**21.04.2015**
Finalization of the selection and negotiation processes. Service agreement signed with NORDPOOL SPOT AS.

**19.01.2016**
Go-live of the Bulgarian Power Exchange
IBEX become full member of MRC, associated member of PCR and NEMO
About IBEX Organisational Structure

- **Board of Directors**
- **CEO**
- **Accounting and finance**
- **Layer**
- **Project Manager**
- **Operations Manager**
- **Settlement Manager**

**Bulgarian Energy Holding**

IBEX is 100% owned by BEH
About IBEX Market Segments

**IBEX EAD Currently Administers**
- Day Ahead Market (DAM)
- Centralized Market for Bilateral Contracts (CMBC)
- Intra-Day Market is planned for July 2017

**IBEX**

Your Most Reliable Partner!
Operation Of Energy Exchange: IBEX DAM Operational Organization

**Bidding**
The ETS allows offering up to 2 weeks prior to D day

**Market Results**
MCP publication and portfolio allocation (PCR)

**Invoicing**
Invoices issuing towards the net buyers

**Collateral adjustment**
Collateral adjustment according to the collateral call

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**D-1**
- **12:00 CET**
  - GCT
  - Bidding process gate closure time and auctioning (MRC timing)

- **12:55 CET**
  - Invoicing
  - Nomination of the trades toward the TSO

- **14:30 CET**
  - Net buyers payment
  - Deadline for payment for the net buyers from D-1

- **15:00 CET**
  - Net seller obligation settlement
  - Deadline for payments towards the net sellers

**D**
- **10:30 CET**
  - Net buyers payment

**D + 1**
- **13:00 CET**
  - Net seller obligation settlement
Average hourly traded volume: 275 MWh/h
Average daily traded volume: 6 595 MWh
Average base price: 29.61 EUR / MWh
Total traded volume from 20.01.2016: 1,888 TWh
47 Market Participants from 13 countries
Operation Of Energy Exchange: IBEX DAM Data - Traded Volume

Traded Volume from 20.01.2016 to 31.10.2016 [MWh]

Highest daily traded volume

10 517 MWh on 03.10.2016

Average base price

29,61 EUR/MWh

Your Most Reliable Partner!
Operation Of Energy Exchange: IBEX DAM Data - Members Structure

- Generators: 9% (4 members)
- Local Traders: 45% (21 members)
- International Traders: 36% (17 members)
- Consumers: 11% (5 members)

Total Members: 47
Operation Of Energy Exchange: IBEX DAM Data - DAM Members

from 13 COUNTRIES

Number of IBEX market participants

January: 29, April: 37, July: 41, October: 47
Operation Of Energy Exchange: Regional PXs Base prices comparison
Operation Of Energy Exchange: Centralized Market for Bilateral Contracts

- An open, transparent and non-discriminatory mechanism for electricity trading;
- Forming reference prices for all products traded;
- Concluding transactions in an easy, fast and secure way.

- **Benefits**
  - Standardised products;
  - Products with deviations – flexible;
  - Standard contract for sale/purchase;
  - Collateral for participation, for payment, good performance;
  - Financial Limits;
  - Market rules for CMBC.

- **Trading mechanisms, screens and products**
  - "Auctions" screen - bids are submitted and transactions are concluded through auctions.
  - "Continuous trading" - trading screen where bids are submitted and transactions are concluded through “Continuous trading” mechanism.
  - "Hourly products”
Progress on implementation of EU Network Codes

CACM is an important step in implementing a ‘Target Model’ for the design of European electricity markets.

Harmonisation
• Sets common rules for electricity trading

Capacity calculation
• Flow-based method for meshed grid corresponds better to actual flows

Increased liquidity
• more cross-border trade and positive effect on competition

Aggregation
• Allows for RES integration, capacity markets, security of supply and correct investment incentives

Capacity allocation
• Market coupling algorithm to match demand (orders) and supply (capacities) in a way that optimizes interconnection capacity (power flows from low to high price areas)
• Implicit auctions
Progress on implementation of EU Network Codes

**EU Integration process (IBEX DAM market) – governed by the CACM provisions**

**Network codes:** One of the key projects for the creation of a European-wide internal market is the ongoing project to harmonize the main rules for electricity and gas trade.

**Memberships**
- **MRC** full membership since Jan. 2016;
- **PCR** associate membership since Dec. 2015;
- **EUROPEX** full membership since Feb. 2016;
- **XBID** accession stream membership since Mar. 2016;
- **NEMO** designation for the BG market zone – Jan. 2016;

**Full MRC members**

**4MMC members**

**Others**
Progress on implementation of EU Network Codes

- In May 2016, the proposal of all TSOs for Capacity Calculation Regions (CCRs) was approved by EWRC;

- 11 Capacity Calculation Regions Established;

- Capacity Calculation Region 11: South-east Europe (SEE) includes the bidding zone:
  - Greece - Bulgaria (GR - BG), Independent Power Transmission Operator S.A. and Elektroenergien Sistemen Operator (ESO) EAD;
  - Bulgaria - Romania (BG - RO), Elektroenergien Sistemen Operator (ESO) EAD and Compania Naţională de Transport al Energiei Electrice "Transelectrica" S.A.
Progress on implementation of EU Network Codes

NEMO Committee established - responsibilities under CACM.

Plan for MCO function - Developed and submitted to the NRA.

NRAs sent request for amendment to the MCO Plan.

The MCO Plan proposal need to be resubmitted to NRAs and Agency by NEMO Committee by 15 December 2016.

Following NRA approval of the MCO Plan, NEMOs envisage a maximum of 12 months for its implementation.

Managing Changes – current amendment processes, invoked with art 12 of CACM, where change impacts key principles established in the methodologies. All NEMOs started consultation process on the following proposals:

- Price coupling algorithm development for continuous trading matching algorithm, in accordance with Art. 37 (4) of CACM;
- Products on day-ahead and single intraday couplings, in accordance with Art. 40 and Art. 53 of CACM;
- Back-up methodology, obligations set out in Article 39 and 52 of CACM, in accordance with Art. 36 of CACM;
- On harmonized maximum and minimum clearing prices in single day-ahead and single intraday couplings - Art. 41(1) and Art. 54 (1) of CACM.
Natural gas market state in Bulgaria in 2015

CONSUMPTION

IMPORT

- **2,911 million m³**
- **97%**
  - Carried out by Bulgargaz EAD and supplied by Gazprom Export.

LOCAL PRODUCTION

- **85 million m³**
- **3%**
  - By Petroceltic EOOD and Oil and Gas Exploration and Production AD

Ratio

- **3% Local production**
- **97% Import**

Natural gas market priorities in Bulgaria in 2015 and key projects

- To work closely with suppliers and transit countries
- Diversify supplies
- Reinforce security of supply laws
- Aspirations to create a national market area hub and implement the following infrastructure projects:
  - Capacity expansion of the UGS Chiren; Rehabilitation,
  - Modernization and expansion of the existing gas transmission system;
  - Interconnection Turkey – Bulgaria (ITB);
  - Construction of a gas hub in Bulgaria;
  - Easting Bulgaria;
  - Project for construction of gas pipeline(s) to increase the interconnection capacity of the north semi-ring of the national gas transmission network of Bulgartransgaz EAD and the gas transmission network of Romania;
  - Interconnection Greece-Bulgaria (IGB)
IBEX expectations contributing to the Regional Gas Market Development

Bulgarian Gas Market Problems

- Single one main foreign supplier
- Lack of competition in the sector
- Lack of reverse gas interconnection with neighbouring countries except with Greece
- Lack of security of supplies
- Lack of significant local production

Possibilities for the sector

- Efficient market liberalization
- Establishment of regional gas market
- Ensure security of supplies
- Diversification of natural gas sources
- Achieve competition
IBEX expectations contributing to the Regional Gas Market Development

1. Full implementation of the Third Energy Package

2. Preparation of Bulgarian regulation for the commencement of natural gas trading

3. Construction of large-scale interconnected entry and exit gas infrastructure with neighboring counters

4. Completion of the ongoing upgrade and modernization projects inside Bulgaria

IBEX Pre-conditions

Regulation reform and contract amendments

Transmission and storage infrastructure investment
One regional energy exchange taking part in the future market development

Coexistence of different concepts can contribute to better understanding of the market dynamics.

Different market concepts and strategies compete with each other, but no qualitative unit for measuring their success except liquidity increase.

Evolution of regional marketplaces and possible merger of exchanges towards single energy market.

liquidity will concentrate on a single marketplace where the country has large installed capacity and is a traditional net exporter.

Regional marketplaces will grow if there is a cross border transmission including a unified and efficient way of cross border transmissions capacity allocation in place.

IBEX liquidity and the number of market participants are steadily increasing.

Our strategy: see which one proves to be the best.
One regional energy exchange taking part in the future market development

1. Future regional market development is systematically connected with other dynamic factors (economy, climate change, politics, country production and consumption)

2. Trading is fostered by the different generation structures and vast spare capacities

3. Regional marketplaces are a stepping stone in the process of implementing the Target model as a complement to the required top down approach (FG CACM & Network Codes)

4. Next steps: Financial and derivatives trading, coming with time market maturity

Gross generation / total export 2015

- Annual gross generation: 47,399,203 MWh
- Total export: 14,697,489 MWh
- Internal consumption: 32,701,714 MWh
- Installed capacity: 12,710 MW
THANK YOU FOR YOUR ATTENTION!

KONSTANTIN KONSTANTINOV
CEO, Independent Bulgarian Power Exchange EAD

www.ibex.bg
e-mail: kkonstantinov@ibex.bg
e-mail: office@ibex.bg