A robust hybrid clearing model for energy markets

South-East and East European Gas Platform (SEEGAS) 2nd Stakeholder Meeting
10 / 03 / 2021

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## The Modular Approach
Joining forces and sharing resources

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<tr>
<th>Market</th>
<th>Type of Market</th>
<th>Market Operator</th>
<th>Clearing and Risk Management</th>
<th>Platforms &amp; Technical Services</th>
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<td>Day Ahead</td>
<td>Physical</td>
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<td>EnEx EnEx Clearing House S.A.</td>
<td>ATHEXGROUP Athene Exchange Group</td>
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Increased choice for Product Efficiency
Use of ATHEXClear or EnExClear depending on product

**EnExClear** provides CCP clearing services since November 2020 supporting the implementation of Target Model in Greek Electricity Market

**ATHEX CLEAR** provides CCP clearing services and has been authorized under EMIR on January 2015 for the following classes of financial instruments (with license extension in 2020 for electricity & gas derivatives)

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**Financial Instruments Cleared**

- **Securities**
  - Stocks/ Rights
  - Bonds (Corp/Gov)
  - Stock Warrants
  - ETFs
- **Derivatives**
  - Futures
  - Plain Options
  - Securities Lending
  - Energy Index Future

- **Energy**
  - Oil
  - Power
  - NG

- **Commodity**
  - Gold
  - Ccy/FX

- **Index**
  - European
  - American physical

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*ATHEXGROUP*
Benefits from the ATHEX Group & ENEX Group approach

Cost minimization & Increasing Efficiency for Infrastructure and Members

✓ Modular structure for Spot (electricity & gas) and Derivatives (electricity & gas)

✓ Increased choice for product efficiency - Allowing for products to be cleared with a common Clearing Model
  - in EMIR-CCP @ ATHEXClear
  - non-EMIR CCP @ EnExClear

✓ Allowing Trading and smaller Clearing members to join without increasing risk
  - Using similar risk model with pre-order risk management in both EnExClear and ATHEXClear

✓ Common Trading members for the Spot Electricity & Gas Market @ HENEX

✓ Common Clearing members for the Spot Electricity & Gas Market @ EnExClear

✓ Common Clearing members for the Derivatives Market @ ATHEXClear
  - Use of common Derivatives Default Fund

✓ Using similar Clearing Account Model following EMIR standards
  - Accounts & Sub-accounts structure, Option to link to multiple trading accounts
  - Option for Direct & Indirect Clearing Accounts
  - Option for Gross or Net Margin Calculation

✓ Similar Risk Management & Settlement Procedures

✓ Using the same underlying technology
  - Larger pool of know-how, experience and support
  - Employing internal IT Development & Support team – Fast response and implementation times
### Clearing House Operation

#### Main Tasks of both EnExClear and ATHEXClear

<table>
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<th>Clearing</th>
<th>Risk Management</th>
<th>Settlement</th>
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<td><strong>Is</strong> the process that takes place after the completion of transactions/positions and calculates all the obligations and rights (financial) for each Clearing Member.</td>
<td><strong>Is</strong> the process of identifying and quantifying credit and market risks in order to be covered by collaterals.</td>
<td><strong>Is</strong> the process of the financial settlement of Clearing Members obligations and rights through settlement banks.</td>
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</tbody>
</table>

#### Main Tasks: Clearing
- Receive and reconcile transactions/positions from Market Operator
- Calculate claims and obligations for participants
- Invoicing

#### Main Tasks: Risk Management
- Collateral Evaluation
- Margin Calculation
- Credit Limit Calculation
- Calculation of Reference Prices
- Default Fund Management

#### Main Tasks: Settlement
- Settlement Instructions
- Target 2 Ancillary System Management
- Cash Collateral Management
Membership requirements
Markets are accessible even for smaller members

Types of Membership:

Direct Clearing Members (DCMs)
authorized to clear only their own transactions as Market Participants

General Clearing Members (GCMs)
authorized to clear other Participants’ transactions

Membership Requirements

☑ Minimum capital requirements:
  ▪ GCM: 3.0 million EUR
  ▪ DCM: 0.7 million EUR

☑ Minimum default fund share:
  ▪ GCM: 500,000 EUR
  ▪ DCM: 30,000 EUR

☑ Minimum organizational standards:
  ▪ Clearer certifications
  ▪ Systems availability
  ▪ Risk management procedures,
  ▪ Participation in mock sessions

Financial Criteria may vary according to Market
Existing Pool of Clearing Members

A wide group of members and participants of different size and nationality

EnExClear

8 Clearing Members:
- 5 General Clearing Member (financial institutions)
- 3 Direct Clearing Member (from: energy sector)

54 Non – Clearing Members

ATHEX Clear

36 Clearing Members:
- 6 General Clearing Member (financial institutions)
- 30 Direct Clearing Member

12 Non – Clearing Members
The Generic ATHEXClear and EnExClear Account Structure

A flexible model

Clearing Fund

Share

C.M.

Own Clearing Account

Clientele Clearing Account

Sub-Account 1

Sub-Account n

Sub-Account 1

Sub-Account n

Sub-Account 1

Sub-Account n

Clearing Space (Type of Asset)

T.M. 1

T.M. 2

T.M. 3

T.M. n

T.M. 1

T.M. 2

T.M. 3

T.M. n

T.M. 1

T.M. 2

T.M. 3

T.M. n

T.M. 4
Risk Management Tools
following the EMIR directions

✓ Accepted **Collaterals**
  - Cash (deposited on Central Bank)
  - Securities (only for ATHEXClear)
  - Letter of Guarantee (only for EnExClear)

✓ **Required Margins**
  - Based on the risk calculated for each clearing account

✓ **Credit Limits**
  - Calculated according to collaterals and required margin
  - Real-time link with the Trading platform
  - Does not allow orders that may result to credit risk higher than the available collaterals

✓ **Default Fund**
  - Risk sharing mechanism that reduces the required margin and covers also stress scenarios

✓ **Default Waterfall**
  - Prefunded resources to cover clearing member’s default in a specific order
Cash Settlement Procedure
Using a secure and efficient system

- EnExClear and ATHEXClear perform the Financial Cash Settlement, the collaterals management and the Clearing Fund contribution management, in Central Bank with the use of TARGET2 system.
- The use of the Ancillary System of TARGET2 offers an easy access to money transfer for all participants (local and remote) using Target 2 Method 6.
- Each Clearing Member has to assign a Settlement Bank.
- Settlement cycle varies according to the market (C+1 for derivatives, C+1 and C+2 for spot).
CS is based on Oracle System (DBMS and development platform) which guarantees high standards for enterprise software.

CS architecture is easily expandable and can support a large number of users based on the provided computing power.

The CS Client is a web based application which handles the necessary communication with the application server through secure communication protocol.

Increased connectivity – use of API

Only Certified Clearers of Clearing Members have access to CS

The EMCS Client interface is a web based application which handles the necessary communication with the application server. EnExClear’s Users have the following connectivity options to get access to EMCS Client interface:

- Via internet (using secure communications protocol and certificates)
- Via private network (leased lines)

Additional IT systems are available for

- Reporting (EMIR TR, REMIT)
- Market monitoring
Energy Exchange Group

- **EnEx Group** (Energy Exchange Group)
  - **HEnEx** (Hellenic Energy Exchange S.A.)
    - Private company operating **Spot & Derivatives** energy markets
  - **EnExClear** (EnEx Clearing House S.A.)
    - 100% owned by HEnEx
    - Private company clearing **Spot** energy markets
HEnEx Shareholders

Public sector

- ДАНЕП 22%
- ipto 20%

42%

Private sector

- ATHEX Athens Stock Exchange 21%
- European Bank for Reconstruction and Development 20%
- Cyprus Stock Exchange 10%
- DESFA 7%

58%
EnExClear **Clearing Value** since the beginning of operations on 1/11/2020:

- Day Ahead Market Average Daily Clearing Value: 17.9 mil. €
- Balancing Market Average Weekly Clearing Value: 39.0 mil. €

EnExClear currently manages:

- **Default Funds:**
  - 6.6 mil. € for Day Ahead Electricity Market
  - 29.3 mil. € for Balancing Electricity Market

- **Cash Collaterals:**
  - 56.8 mil. € for Day Ahead Electricity Market
  - 52.8 mil. € for Balancing Electricity Market
ATHEX Group Company Structure

Athens Exchange Group

Cash & Derivatives Markets Trading

ATHEX
Athens Stock Exchange

100%

ATHEX CLEAR
Clearing House

Cash & Derivatives Markets Clearing

ATHEX CSD
Central Securities Depository

Central Securities Depository

21%

EnEx
Energy Exchange Group

Energy Products Trading & Clearing
Appendix

AtheXClear - Key Facts

Capital Adequacy as of 30/09/2020

- Equity Capital: 27.66 million EUR
- Equity Capital Buffer: 18.73 million EUR
- Credit Risk (Banks): 1.54 million EUR
- Market Risk: 0.00 million EUR
- Operatinal Risk: 0.17 million EUR
- Termination Risk: 3.80 million EUR
- Business Risk: 1.90 million EUR
- SIG: 1.52 million EUR
ATHEXClear key B/S Items (30/09/2020)

- **ATHEXClear own cash**: 26.2 million EUR
- **Cash held within ECB Target II Account**: 187.9 million EUR
- **Other Assets**: 29.1 million EUR
- **Total Assets**: 217.0 million EUR
- **Equity and reserves**: 27.7 million EUR
- **CM’s cash collateral & DF shares**: 187.9 million EUR
- **Other Liabilities**: 28.2 million EUR
- **Total Liabilities**: 217.0 million EUR

All values are in million EUR.
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