Technical Requirements

of

HUDEX Hungarian Derivative Energy Exchange Ltd.

Version 7.0

Effective from 24.04.2020

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Approved by the resolution of the CEO No. 16/2020 (IV. 23.)

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I. General Rules

I.1. Scope of the Technical Requirements

The Technical Requirements are set of rules applicable to technical conditions related to access and use of the Trading System of HUDEX Hungarian Derivative Energy Exchange Private Company Limited By Shares (in the following: HUDEX) including parameters and prescriptions to ensure the technical conditions of the orderly trading and data reporting.

HUDEX shall publish the Technical Requirements on its website.

I.2. Persons bound by the Technical Requirements and effective date

The present Technical Requirements are binding on HUDEX and on persons bound by the HUDEX Rules and Regulations.

The present Technical Requirements will become effective at the earliest on the calendar day following their publication on the HUDEX website, or on any other later date specified by the decision of the CEO of HUDEX.

I.3. Definition

The definitions used in these Technical Requirements shall have the meaning as defined in the HUDEX Market Rules.

I.4. Official language

The present Technical Requirements are issued in Hungarian and English. The official language of HUDEX is Hungarian.

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II. Rules and parameters for ensuring orderly trading and data reporting

II.1. Preconditions and setups for the use of trading functionalities

HUDEX is entitled to determine in the Technical Requirements the types of the technical accesses, which are required for using the different trading functions and related optional features. HUDEX offers different default setups for HUDEX Members as regulated in the Technical Requirements.

II.1.1. Front Ends for Trading

HUDEX Member is entitled to use „Front End" provided either by HUDEX (HUDEX Client) or by third parties as its own trading system. Front End provided by third parties as trading system can be Trayport Joule/Joule Direct Front End.

HUDEX Member or any related User(s) are obliged to use Trayport Joule/Joule Direct Front End for accessing the Trading System in the following cases:

 a) in case the User trades both Hedging and Speculative transactions,

 b) In case the HUDEX Member would like to set up more than one decision makers for the same User,

 c) in case the HUDEX Member uses Algorithmic trading,

 d) in case the HUDEX Member would like to conclude transactions on behalf of a client,

 e) in case the Market Marker would like to indicate whether the Order is submitted within the frame of a Market Maker Agreement or not.

II.1.2. Default setups

The default setups as defined in this Technical Requirements will also be used by HUDEX for reporting purposes under MiFIR and MiFID II.

 a) Purpose of the Trades

 HUDEX Member may determine whether its given User concludes exclusively speculative or solely hedging transactions, and HUDEX will set the default settings of the User and perform its reporting obligations accordingly. HUDEX Member may request modification of the default settings of the given User. If a HUDEX Member does not indicate on the Application Form which default setting is requested, then HUDEX will automatically set the default settings to speculative transactions.

 b) Decision maker setup

 HUDEX will setup as default decision maker of the User of HUDEX Member the person indicated on the Application Form by the HUDEX Member including the case when the

related field in Trayport Joule/Joule Direct is left empty. In such cases always the default decision maker indicated on the Application Form will be indicated as decision maker in the respective reports.

c) Execution maker setup

The execution maker is the person who performs the trading activity within the Trading System in case the Order is not submitted via Algorithmic Trading. The default setup for the execution maker is always the Trader including the case when the related field is left empty.

d) Position reports and position limits

The HUDEX Member may choose speculative or hedging transactions as default setup of trading purpose for the position limits and position reporting on the Application Form. The chosen default setup chosen will be used for all Trades concluded on HUDEX in the position reporting and position management procedures.

The speculative option will be set as default in the position reports, in case the HUDEX Member does not specify otherwise.

HUDEX will use the default setup for position reporting and position limit controls as long as the HUDEX Member does not indicate a different purpose for the given daily positions during the respective daily reporting procedures.

e) Use of non-executing broker

The default setup is that the HUDEX Member is not using non-executive brokers according to Art. 2 d) of Regulation No. 2017/580 during its trading activity unless otherwise indicated on the Application Form.

II.2. Order submission

For Orders sent to HUDEX Ltd. shall include:

a) the Member's identification (identification of company and User);

b) the Contract indicator;

c) the Trading Account in which the Order is recorded;

d) validity of the Order;

e) the volume;

f) the maximum or minimum price against which the Order may be executed;

g) Order Type;

h) direction of the Order – i.e. buy or sell Order

i) Client ID: In case of execution of Client Transactions the Client ID is mandatory element of the Order. For the indication of the Client ID the "DEA Client ID" field in

Trayport Joule/Joule Direct Front End shall be used. If the Client is a legal entity the LEI Code of the Client shall be used. If the Client is a natural person the short code given by the HUDEX Member shall be used. In the absence of the short code given by the HUDEX Member HUDEX will generate the short code based on the full name, date of birth and on the national ID of the Client according to 2017/590 Delegated Regulation (RTS22). For own account transactions: In case of use of the Trayport Joule/Joule Direct Front End the "DEA Client ID" field shall be left empty (and in case of use of the HUDEX Client Front End no further action is required).

j) Execution Maker: In case of a natural person execution maker the alpha numeric identifier (short code) given by the HUDEX Member shall be used. In the absence of the short code given by the HUDEX Member HUDEX will generate the short code based on the full name, date of birth and on the national ID of the User according to 2017/590 Delegated Regulation (RTS22). In case of Algorithmic Trading always the alpha numeric Algo ID provided by the HUDEX Member shall be used.

k) Decision Maker: In case of a natural person decision maker the alpha numeric identifier (short code) given by the HUDEX Member shall be used. In the absence of the short code given by the HUDEX Member HUDEX will generate the short code based on the full name, date of birth and on the national ID of the Decision Maker given on the Application Form according to 2017/590 Delegated Regulation (RTS22). In case of Algorithmic Trading always the alpha numeric Algo ID provided by the HUDEX Member shall be used.

l) Indication whether the Order was submitted based on a Market Maker Agreement concluded with HUDEX in line with the market maker strategy according to Articles 17 and 48 of MiFID II (Liquidity Provision True/False)

II.3. Basic parameters and pre-Trade Controls

II.3.1. Power Segment

Basic parameters regarding the Orders:

    a) min price: 0,01 EUR/MWh

    b) max price: 1000 EUR/MWh

    c) min quantity: 1 MW

    d) max quantity: 1000 MW

According to Section III.8.1. of HUDEX Market Rules HUDEX carries out three types of pre-trade controls before the conclusions of transactions in all sessions of the trading, which are defined below:

    a) price collars

      1. Warning message is being sent at reaching the minimum sane Price of the Order (10 EUR/MWh) and the maximum sane Price of the Order (100 EUR/MWh).

      2. Warning message is being sent at a difference indicated below to the best bid and/or the best ask Orders, in case there are Orders in the Order Book (Price warning threshold).

Yearly and quarterly Contracts	Monthly Contracts	Weekly Contracts	Daily and weekend Contracts
5 %	5 %	10 %	50 %

      3. Orders are rejected to constrain trading at a difference indicated below to the last Settlement Price if Settlement Price is available.

Yearly and quarterly Contracts	Monthly Contracts	Weekly Contracts	Daily and weekend Contracts
15 %	20 %	25 %	200 %

    b) for every item size maximum order value: max quantity * contract size * max price;

    c) maximum Order volume: max quantity * Contract size.

II.3.2. Natural Gas Segment

Basic parameters regarding the Orders:

a) min price: 0,01 EUR/MWh

b) max price: 1000 EUR/MWh

c) min quantity: 1 MW

d) max quantity: 1000 MW

According to Section III.8.1 of HUDEX Market Rules HUDEX carries out three types of pre-trade controls before the conclusions of transactions in all sessions of the trading, which are defined below:

a) price collars

1. Warning message is being sent at reaching the minimum sane Price of the Order (5 EUR/MWh) and the maximum sane Price of the Order (25 EUR/MWh).

2. Warning message is being sent at a difference indicated below to the best bid and/or the best ask Orders, in case there are Orders in the Order Book (Price warning threshold).

Quarterly and monthly Contracts	Yearly and seasonal Contracts	Balance of Month Contracts
5%	10%	10%

3. Orders are rejected to constrain trading at a difference indicated below to the last Settlement Price if Settlement Price is available with the exception of the Balance of Month Contracts.

Quarterly and monthly Contracts	Yearly and seasonal Contracts
25%	50%

b) for every item size maximum order value: max quantity * Contract size * max price;

c) maximum Order volume: max quantity * Contract size.

II.4. Applicable throttling limit in case of overload of the Trading System (Throttling)

According to Section II.5.13. of HUDEX Market Rules HUDEX is entitled to apply order throttling procedures for the individual HUDEX Members or for the whole market to avoid the overload of the Trading System.

HUDEX sets the throttling limit (overload limit) as referred to in Section II.5.13. of HUDEX Market Rules 100 orders entered per 1 second.

II.5. Obvious Error and Benchmark Price

In the event of an Obvious Error (wrong entry), HUDEX Members may request HUDEX Ltd. to cancel the Trade. In case of the verification of an Obvious Error, the Trade is being cancelled by HUDEX upon request without the counterparty's confirmation.

Members can only reference an Obvious Error when the Trade price differs markedly from the Settlement Price of the concerned Contract on the previous Trading Day, from the previous Trade price of the same Contract or in the absence thereof from the Benchmark Price.

II.5.1. Power Segment

Based on point 9.1 of Article 2 of the Market Rules and the definition of Obvious Error, the value of the Obvious Error is defined accordingly:

a) If the previous Trading day's Settlement Price for the given Contract is available, an Obvious Error can be established, if the trade price's minimum deviation from the previous Trading day's price is the following:

Yearly, quarterly and monthly contracts	Weekly contracts	Daily and weekend contracts
10%	20%	100%

b) If the previous Trading day's Settlement Price for the given Contract is unavailable, an Obvious Error can be established, if the trade price's minimum deviation from the Benchmark Price is the following:

Yearly, quarterly and monthly contracts	Weekly contracts
15%	25%

Based on point 9.1 of Article 2 of the Market Rules and the definition of Benchmark Price, the value of the Benchmark Price is defined accordingly:

a) Weekly Contracts: average of the previous Trading day's other tradeable weekly Contracts

b) Monthly Contracts: average of the previous Trading day's connecting quarterly and monthly Contracts

c) Quarterly Contracts: average of the previous Trading day's connecting yearly and quarterly Contracts

d) Yearly Contracts: determined by the nearest tradable yearly Contract's Settlement Price

In the case of Day and Weekend Contracts a Benchmark Price cannot be determined. An Obvious Error can only be established once the previous Trading Day's Settlement Price is available.

II.5.2. Natural Gas Segment

Based on point 9.1 of Article 2 of the Market Rules and the definition of Obvious Error, the value of the Obvious Error is defined accordingly:

a) If the previous Trading day's Settlement Price for the given Contract is available, an Obvious Error can be established, if the trade price's minimum deviation from the previous Trading day's price is the following:

Quarterly and monthly Contracts	Yearly and seasonal Contracts
20%	25%

b) If the previous Trading day's Settlement Price for the given Contract is unavailable, an Obvious Error can be established, if the trade price's minimum deviation from the Benchmark Price is the following:

Quarterly and monthly Contracts	Yearly and seasonal Contracts	Balance of Month Contracts
25%	50%	100%

Based on point 9.1 of Article 2 of the Market Rules and the definition of Benchmark Price, the value of the Benchmark Price is defined accordingly:

a) Monthly Contracts: average of the available Settlement Price of the previous Trading day's connecting quarterly and monthly Contracts, weighted with the size of the Contracts.

b) Quarterly Contracts: average of the Settlement Prices of the other quarterly Contracts of the previous Trading day, weighted with the size of the Contracts.

c) Seasonal Contracts: the Settlement Price of the previous seasonal Contract in terms of delivery, which is for the same season on the previous Trading Day.

d) Yearly Contracts: the Settlement Price of the previous yearly Contract in terms of delivery on the previous Trading Day.

e) Balance of Month Contracts: the Benchmark Price is the Settlement Price of the last Contract in the same Contract series. If the Settlement Price of last Contract in the same Contract series is not available, then the Settlement Price of the last Contract of the previous Contract series is the Benchmark Price.

II.6. Mechanisms to manage volatility

According to Section III.8.3. of HUDEX Market Rules HUDEX applies daily order-entry limitations in order to manage volatility.

The daily order-entry limitations applied by HUDEX consists on the one hand from pre-trade controls as defined in Section II.3 of these Technical Requirements and on the other hand from throttling limits as defined in Section II.4. of these Technical Requirements.

II.7. Position reports

HUDEX Members shall report details of their own open positions held through Products traded on HUDEX, as well as through those contracts concluded on OTC market which are economically equivalent to both OTC trades registered to HUDEX clearing and HUDEX Products, on a daily basis, as well as those of their clients and the clients of those clients until the ultimate beneficiary client is reached.

The HUDEX Member shall provide information according to Section II.3.1.1.7 of the Market Rules and according to the following requirements.

HUDEX will not provide position reports set out in Sections III.18. and II.3.1.1.7. of HUDEX Market Rules for the HUDEX Members with license set forth in Subsections a) i) of Section II.1.1.4, and the reporting obligations shall be fulfilled by these HUDEX Members.

HUDEX will create a draft position report according Section III.18. of the Market Rules of HUDEX based on the Trades concluded on HUDEX and OTC transactions registered for clearing on HUDEX OTC Clearing Registration Platform. When preparing the draft position report HUDEX will take into account the default setups for position reports and other information as indicated by HUDEX Member on the Application Form.

HUDEX Members shall check the draft position report and amend the information where necessary on a daily basis.

Members can access and amend the draft position report via secure file transfer protocol (SFTP) provided by HUDEX.

HUDEX Members shall add information on their positions not available to HUDEX. This additional information shall include among others the following details:

a. ultimate parent company of the HUDEX Member. HUDEX stores this information in its reporting system for using until the next modification is done by the User;

b. indicator of whether the position is risk reducing in relation to commercial activity;

c. adjust the split up of positions between speculative and hedging purpose on client level;

d. size of OTC positions for derivatives economically equivalent to Products and Contracts listed on HUDEX.

HUDEX will not check the correctness and validity of the additional information listed in Section II.7. of the Technical Requirements. HUDEX excludes its liability in this respect.

In case the HUDEX Member does not provide any additional information listed in Section II.7. of the Technical Requirements, HUDEX will submit the draft position report according to Section II.7. of the Technical Requirements to the Supervisory Authority assuming that it is complete.

HUDEX an operational guide for the position reporting procedure and makes it available to HUDEX Members.

II.8. Ratio of unexecuted Orders to Trades (OTR)

HUDEX calculates the ratio of unexecuted orders to those trades which were entered into or executed in the Trading Systems by the HUDEX Members (OTR) for each Contract in line with the Market Rules.

For the purpose of preventing disorderly trading and in accordance with Section 316/A of the Capital Market Act HUDEX calculates the maximum values of the OTR indicators for each Product and Market Segment on a non-discriminatory basis.

II.9. Operational support

HUDEX provides an operational support service for the Power and Natural Gas Segment that may be reached by telephone or by e-mail on Trading Days.

The phone calls of the operational support service will be recorded.

The availability hours on the Power Segment are from 7:50 am to 18:00 pm on every Trading Day.

The availability hours on the Natural Gas Segment are from 8:00 am to 18:00 pm on every Trading Day.

The Trading Calendar contains the list of the Trading Days. Trading Calendar shall be provided to the HUDEX Members and published on the HUDEX Website before the beginning of each calendar year.

The operational support service may be reached by telephone or per e-mail:

a) Power Segment

E-mail: *power@hudex.hu*

Phone: +361 304 1091

b) Natural gas Segment

E-mail: *gas@hudex.hu*

Phone: +361 304 3241

III. IT requirements

III.1. Technical connection

HUDEX Member shall be equipped with the following necessary technical connection for trading on the Trading System of HUDEX:

a) Account properties:

1. Account Name: Hudex

2. IPTS: gvprod.hudex.hu

3. Keep-Alive interval: 120

4. Reconnection interval: 30

b) Connection settings:

1. Ports: 80, 443, 11997, 11995, 12003 (these ports need to be open on your firewall)

2. Connection type: Direct connection

3. Server Address: gvprod.hudex.hu

4. Encryption: Microsoft TCP

III.2. Front Ends

HUDEX Member is entitled to use „Front End" provided either by HUDEX (HUDEX Client) or by third parties. Allowed front-end software are:

a) HUDEX Client: GlobalVision Front End which is downloadable from HUDEX's SFTP server

b) Front End (Application) provided by third parties: Trayport Joule/Joule direct (provided and installed by Trayport Limited)

III.3. Trading system access

HUDEX Member shall access HUDEX Markets solely through the following electronic order-transmission and reception systems specified by HUDEX: HUDEX Trading System: Trayport GlobalVision Exchange Trading System

III.4. Technical and operational documents

HUDEX provides the HUDEX Members with the following technical and operational documents downloadable from HUDEX's SFTP server needed to operate the technical facilities for accessing its services:

a) HUDEX Trader User Guide;

b) Trayport User Manual;

c) Trayport API Guide.

III.5. Hardware and software environment

HUDEX Member agrees to maintain a hardware and software environment that complies with the Technical Specifications.

The following hardware specification is necessary for client machines:

a) 2 GHz Pentium class or above processors

b) At least 4 GB RAM

c) The Microsoft Windows 7 or above operating systems are supported for client machines:

d) Antivirus application has to be installed.

III.6. Types of the technical accesses

HUDEX is entitled to determine the types of the technical accesses which are required to use the different trading functions and possibilities: Only direct connection is allowed via internet.

III.7. Access conditions for data vendors

HUDEX may grant read only access for exchange data vendors if they fulfil all the conditions set forth is Sections III.1. to III. 6 of these Technical Requirements.