

## **METHODOLOGY**

FOR DETERMINING THE SETTLEMENT PRICE ON THE FORWARD MARKET OF  
" BALKAN GAS HUB " EAD

Version 1.0

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## **CONTENTS**

### **I. Introduction**

### **II. Key Principles of the Methodology**

### **III. Data Sources for Determining the Settlement Price**

### **IV. Calculation Algorithm**

### **V. Correction Mechanism**

### **VI. Interaction with KELER CCP**

## **1. Introduction**

This methodology aims to establish a reliable and transparent mechanism for determining the settlement price of forward contracts (weekly, BOM, monthly, quarterly, seasonal, annual) on Balkan Gas Hub, taking into account best European practices and the specifics of the Bulgarian gas market. The methodology considers that clearing is performed by the Hungarian clearing house KELER CCP.

## **2. Key Principles of the Methodology**

- Transparency – use of publicly available data for price reference.
- Liquidity – basing the settlement price on active trading deals and quotes.
- Representativeness – reflecting market conditions through multiple indicators.
- Reliability – using correction mechanisms under extreme market conditions.

## **3. Data Sources for Determining the Settlement Price**

- Recent transactions on Balkan Gas Hub – volume-weighted average price (VWAP) of deals at the end of the trading session for each tradable product.
- Offers (Bid/Ask) from the most liquid market segment – analysis of the best available buy and sell prices.
- Arbitrage price compared to other European markets – TTF, CEGH, CEEGEX, adjusted for known transport costs.
- Model-based calculation using historical volatility – forecast values based on statistical methods.

## **4. Calculation Algorithm**

Step 1: Determination of the Primary Price

- VWAP for the last trading day for each tradable product, when more than 2 trades were

made that day. Calculated as the sum of the products of all traded prices and their respective volumes, divided by the total traded volume.

- If no trades on the last trading day, use VWAP from the last 10 trading days (with more than 2 trades).
- If no trades in the last 10 days, use VWAP from the last 30 trading days (with more than 2 trades).
- If no trades in the last 30 days, apply an alternative mechanism: average of bid and ask prices for the day. If none, use prices from the last 10 or 30 days.

#### Step 2: Market Quotations (effective from 01.01.2026)

- Analyze the best bid and ask offers.
- Calculate the average between the best bid and best ask.

If the spread exceeds 10% of their average, these quotes are excluded from the settlement price calculation.

#### Step 3: Spot Market Reference Price

- Taken from the period between 18:00 and 19:30 (if no result from Step 1 or Step 2).
- If unavailable, use the reference price from the most recent previous day it is available.
- Use the settlement price based on the BGH market operation rules.

#### Step 4: Regional Adjustment (at BGH's discretion)

- Calculate arbitrage price via TTF, CEGH, or CEEGEX levels (depending on market conditions).
- Adjust for transport costs (capacity expenses, if known).

#### Step 5: Final Calculation (at BGH's discretion)

- If all sources provide valid data, calculate a weighted average.
- If any source is missing or unreliable, increase the weight of the others.

### 5. Correction Mechanism (used at BGH's discretion)

- Anomalies – if sharp deviations (>10%) occur from previous days, additional verification via arbitrage analysis.
- Force majeure events – under extreme market conditions, apply an alternative method based on the latest available prices.

### Practical Examples

#### Example 1: Normal trading activity

- VWAP from all trades for the product over the day/10/30 days: €45/MWh
- Best bid/ask: €44.8 – €45.2/MWh
- Reference price: €44.75/MWh
- Final settlement price:  $(45 + 44.8 + 45.2 + 44.75) / 4 = €44.94/\text{MWh}$

#### Example 2: No trades

- VWAP: none
- Best bid/ask: €44 – €46/MWh

- Spot reference price = €45/MWh
- Final price:  $(44 + 46 + 45) / 3 = €45.00/\text{MWh}$

Example 3: No trades and no quotes

- VWAP: none
- Best bid/ask: none
- Spot reference price = €45/MWh
- Final price = €45.00/MWh

#### **6. Interaction with KELER CCP**

- KELER CCP will use the published settlement price to calculate variation margin and collateral.
- Data will be published by 19:00 local time each trading day and provided to KELER CCP via an automated interface.
- In extraordinary circumstances, KELER CCP reserves the right to apply additional risk management measures.

This Methodology was approved by the Board of Directors of "Balkan Gas Hub" EAD by Decision under Minutes No. 87/09.06.2025 and enters into force with the commencement of clearing services and the launch of forward products on the "Balkan Gas Hub" EAD market.