



Trading Appendix 7

# Hourly index

CROATIAN POWER EXCHANGE Ltd.

## 1. CRODAX – CROPEX Hourly Index (Day Ahead Market)

### 1.1. Description and purpose of the index

CRODAX (CROPEX Hourly Index) means the hourly index of CROPEX Day Ahead Market, which reflects the average price for a given hour, calculated as the arithmetic mean of all fifteen-minute price intervals within that hour.

Purpose of CRODAX-a is to provide a transparent and reliable indicator of hourly prices in the market.

### 1.2. Calculation methodology

- **Input data:** 96 positions (15-min products - QH) from Day ahead market
- **Aggregation:** Each hour (H01–H24) consists of four consecutive 15-minute prices (e.g. H01 = QH1–QH4).
- **Hourly price calculation:**
  - arithmetic mean:

$$CRODAX_{hourly,i} = \frac{QH_{i,1} + QH_{i,2} + QH_{i,3} + QH_{i,4}}{4}$$

Note: symbol  $i$  represents the hour in the range from 1 to 24 (ie. H01–H24)

### 1.3. Index :

- **CRODAX\_hourly:** hourly index for each of 24 hour per day
- **CRODAX\_base:** Arithmetic mean of each 24 values
- **CRODAX\_peak:** Arithmetic mean of each 24 values inside defined "peak" period (08:00–20:00 CET)

### 1.4. Rules for the transition between summer and winter time (CRODAX)

#### a) Regular days

Days with no daylight saving time changes consist of 24 hours. CRODAX hourly index is calculated separately for each hour  $\{1,2,...,24\}$

#### b) Transition from winter to summer time

On the day of the transition from winter to summer time, the clock is changed forward at 02:00 CET to 03:00 CET. Such a day has 23 trading hours.

#### c) Transition from summer to winter time

On the day of the change from summer to winter time, the clock is moved back at 03:00 CET to 02:00 CET. Such a day has 25 trading hours. The double hour (03:00) appears twice and is designated as H03a and H03b. The CRODAX hourly index value for that hour is calculated as the arithmetic mean of H03a and H03b.

**Regarding the case of cancellation of Day ahead auction (no results) than for that day index from Intraday market is chosen.**

## 2. CRIX – CROPEX Hourly Index (Intraday Continuous Market)

### 2.1 Description and purpose of the index

CRIX (CROPEX Intraday Continuous Hourly Index) means the hourly index of CROPEX Intraday Continuous Market, which reflects the average price for a given hour, calculated as the arithmetic mean of all fifteen-minute price intervals within that hour.

Purpose of CRIX is to provide a transparent and reliable indicator of hourly prices in the market.

### 2.2 Calculation methodology

- **Input data:**
  - 96 15-minute products (QH01-QH96)
  - 24 hourly products (H01-H24)
- **Aggregation:**
  - Each hour (H01-H24) is calculated based on **arithmetic mean VWAP hourly price products and VWAP prices of the corresponding four 15-minute products.**
  - Hourly price formula:

$$CRIX_{hourly,i} = \frac{VWAP_{hourly,Hi} + \frac{VWAP_{QH,(4i-3)} + VWAP_{QH,(4i-2)} + VWAP_{QH,(4i-1)} + VWAP_{QH,4i}}{4}}{2}$$

$$i = [1, 2, \dots, 24]$$

### 2.3 Index types

- **CRIX\_hourly:** hourly index for each of 24 hour per day
- **CRIX\_base:** Arithmetic mean of each 24 values
- **CRIX\_peak:** Aritmetička sredina satnih vrijednosti unutar definiranog "peak" razdoblja (08:00–20:00 CET).

### 2.4 Rules for transition between summer and winter time (CRIX)

- **Regular days:** Days with no daylight saving time changes consist of 24 hours. CRIX hourly index is calculated separately for each hour  $\{1, 2, \dots, 24\}$
- **Transition from winter to summer time:** Shift at 02:00 CET forward to 03:00 CET, the day has 23 trading hours; the hour that does not exist (03:00) is given the value 0.

- **Transition from summer to winter time:** Shift at 03:00 CET back to 02:00 CET, the day has 25 trading hours; double hour (03:00) is denoted H03a and H03b, and the hourly value is calculated as the arithmetic mean of H03a and H03b.

If there are no trading results on Intraday for a certain hour, that hour is ignored in the index calculation.

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