METHODOLOGY FOR DETERMINING THE PARAMETRIC PRICE FOR THE GAS MARKET according to provision 7.2.2 of the Business Terms of OTE, a.s., for the gas market

The basic principle applied to determination of the parametric price is achieving at least a 90% probability that the price of negative balancing amount (ZDVM) will be at the end of the period from the announcement of the parametric prices (PC) for the next month till the last day of the next month (i.e. approx. 40 calendar days) higher than the PC.

When calculating the parametric price, the dynamics of a thirty-day time series of daily ZDVM values ending on the nineteenth day of the actual month plays a decisive role. If some of the thirty ZDVM values are extremally different from the other ones, Market Operator may take this fact into consideration when determining the parametric price.

To determine the PC, a variance of percentage intraday changes in ZDVM prices ($VAR_{ZDVM,D}$) is calculated and the standard deviation - volatility ($STD_{ZDVM,D}$) is derived. In the statistical distribution of the percentage intraday changes in ZDVM, the 90% percentile corresponds to the value of the standard deviation.

In the theory of financial time series, it is generally assumed that successive price changes are independent of each other (the autocorrelation of the first order is close to zero), which can also be tested over the time series of ZDVM values. Therefore, $VAR_{ZDVM,D}$ can also be used to determine the variance of the percentage change in the price of ZDVM between 1st and 40th day ($_{VARZDVM,D1\text{-}D40}$) as 40 x $VAR_{ZDVM,D}$. The volatility of percentage change in ZDVM between the 1st and 40th day ($STD_{ZDVM,D1\text{-}D40}$) is therefore calculated as √40 x $VAR_{ZDVM,D}$ = √40 x $STD_{ZDVM,D}$ and corresponds to the 90% percentile of the 40-day ZDVM price change distribution. Thus, new PC needs to be set by a percentage value of the forty-day volatility higher than the ZDVM price on the day of announcement in order to cover 90% of possible scenarios of the future development of the ZDVM price (= the development during the period between the 1st and 40th day after the announcement of the PC).

Market operator uses an arithmetic mean of ZDVM prices covering the period from the 13th to the 19th calendar day of an actual month as a base value for determining the PC. If some of these seven ZDVM prices differ significantly from the other ones, Market Operator may take this fact into account when determining the PC.

Formula expression:

$$PC_M = (1 + STD_{ZDVM,D} \times \sqrt{40}\,) \times \overline{C}_{ZDVM,D13-D19,M-1}$$

- $CZDVM,D13–D19,M–1$ is the arithmetic mean of ZDVM prices covering the period from 13th to 19th day of the month M-1

The same methodology is used in the case of **an increase in the already announced PC**. When setting this parametric price, the dynamics of the daily values of the thirty-day ZDVM price time series ending the last day for which the ZDVM price is yet known is taken into account. The number of days for which the new PC is determined and the initial price (base value) take into account the following:

- The number of days corresponds to the number of days from the announcement of the new PC to the end of PC's validity (the end of the actual calendar month)

- Base value is the last known ZDVM price or the current value of a weighted average of prices at intraday gas market for any of the currently traded delivery periods converted into the CZK with the last known exchange rate of the CNB.

Formula expression:

$$PC_M = \left(1 + STD_{ZDVM,D} \times \sqrt{(D_M - D)}\right) \times C_{akt}$$

- (DM – D) is the number of days until the end of the current month

- C_{akt} is:

  the last known applicable price of the negative balancing amount or

  current value of the weighted average of prices on the intraday gas market related to any of currently traded delivery periods converted to CZK with the latest CNB exchange rate.

In the event of a drop in ZDVM prices, the Market Operator may reduce the announced PC.