





SPECIFIC INDICES PUBLISHED BY OPCOM SA

PRICES AND PRICE/VOLUM INDICES

Day Ahead Market (DAM)	
<p>Prices _{hourly} [lei/MWh] / [euro/MWh]</p> <div style="background-color: #cccccc; padding: 5px; margin-top: 10px;">  ROPEX_DAM_H </div>	<p>The sequence of the 24 hourly Day Ahead Market (DAM) clearing prices:</p> <p style="text-align: center;"><i>ROPEX_DAM_H</i></p> <p>This price index is associated to each hourly interval of the day.</p> <p>For the day of daylight switching from summer to winter hour, OPCOM publishes the ROPEX_DAM_H for 25 hourly intervals.</p> <p>For the day of daylight switching from winter to summer hour, OPCOM publishes the ROPEX_DAM_H for 23 hourly intervals.</p>
<p>Price _{base} [lei/MWh] / [euro/MWh]</p> <div style="background-color: #cccccc; padding: 5px; margin-top: 10px;">  ROPEX_DAM_Base </div>	<p>This price index represents the daily arithmetic average of the Day Ahead Market (DAM) clearing prices:</p> $ROPEX_DAM_BASE = \frac{\sum_{j=1}^{24} p_j}{24}$ <p>This price index is determined for every day of the year as the arithmetic mean of the prices corresponding to the 24 hourly intervals.</p> <p>For the day of daylight switching from summer to winter hour, OPCOM publishes the ROPEX_DAM_BASE calculated for 25 hourly intervals:</p> $ROPEX_DAM_BASE = \frac{\sum_{j=1}^{25} p_j}{25}$ <p>For the day of daylight switching from winter to summer hour, OPCOM publishes the ROPEX_DAM_BASE calculated for 23 hourly intervals:</p> $ROPEX_DAM_BASE = \frac{\sum_{j=1}^{23} p_j}{23}$
<p>Volume _{base} [MWh]</p>	<p>This index represents the sum of the hourly volumes traded on Day Ahead Market:</p> $volume_{base} = \sum_{j=1}^{24} volume_j$ <p>This volume is determined for every day of the year by adding up all hourly traded volumes (for 24 intervals).</p>

	<p>For the day of daylight switching from summer to winter hour, OPCOM publishes the volume calculated for 25 hourly intervals:</p> $volume_{base} = \sum_{j=1}^{25} volume_j$ <p>For the day of daylight switching from winter to summer hour, OPCOM publishes the volume calculated for 23 hourly intervals:</p> $volume_{base} = \sum_{j=1}^{23} volume_j$
<p>Price for peak hours [lei/MWh] / [euro/MWh]</p> 	<p>This price index represents the arithmetic average of the DAM clearing prices corresponding to the peak hours:</p> $ROPEX_DAM_PEAK = \frac{\sum_{j=9}^{20} p_j}{12}$ <p>This price index is determined for every day of the year as the arithmetic mean of the prices corresponding to the 12 hourly intervals, considered as <i>peak</i> hours (including 9th and 20th intervals).</p> <p>For the day of daylight switching from summer to winter hour, OPCOM publishes the average price calculated for 12 hourly intervals:</p> $ROPEX_DAM_PEAK = \frac{\sum_{j=10}^{21} p_j}{12}$ <p>For the day of daylight switching from winter to summer hour, OPCOM publishes the average price calculated for 12 hourly intervals:</p> $ROPEX_DAM_PEAK = \frac{\sum_{j=8}^{19} p_j}{12}$
<p>Volume for peak hours [MWh] (<i>volume_{peak}</i>)</p>	<p>This index represents the sum of the hourly volumes traded on Day Ahead Market, corresponding to peak hours:</p> $volume_{peak} = \sum_{j=9}^{20} volume_j$ <p>This volume is determined for every day of the year by adding up the hourly traded volumes corresponding to the 12 hourly intervals, considered as peak hours (including 9th and 20th intervals).</p> <p>For the day of daylight switching from summer to winter hour, OPCOM publishes the volume calculated for 12 hourly intervals:</p>

	$volume_{peak} = \sum_{j=10}^{21} volume_j$ <p>For the day of daylight switching from winter to summer hour, OPCOM publishes the volume calculated for 12 hourly intervals:</p> $volume_{peak} = \sum_{j=8}^{19} volume_j$
<p>Price for off-peak hours [lei/MWh] / [euro/MWh]</p> 	<p>This price index represents the arithmetic average of the DAM clearing prices corresponding to off-peak hours:</p> $ROPEX_DAM_OFF - PEAK = \frac{\sum_{j=1}^8 p_j + \sum_{j=21}^{24} p_j}{12}$ <p>This price index is determined for every day of the year as the arithmetic mean of the prices corresponding to the 12 hourly intervals, considered as <i>off-peak</i> hours (including 1st-8th and 21st-24th intervals).</p> <p>For the day of daylight switching from summer to winter hour, OPCOM publishes the average price calculated for 13 hourly intervals:</p> $ROPEX_DAM_OFF - PEAK = \frac{\sum_{j=1}^9 p_j + \sum_{j=22}^{25} p_j}{13}$ <p>For the day of daylight switching from winter to summer hour, OPCOM publishes the average price calculated for 11 hourly intervals:</p> $ROPEX_DAM_OFF - PEAK = \frac{\sum_{j=1}^7 p_j + \sum_{j=20}^{23} p_j}{11}$
<p>Volume for off-peak hours [MWh]</p> <p>(<i>volume_{off-peak}</i>)</p>	<p>This index represents the sum of the hourly volumes traded on Day Ahead Market, corresponding to off-peak hours:</p> $volume_{off-peak} = \sum_{j=1}^8 volume_j + \sum_{j=21}^{24} volume_j$ <p>This volume is determined for every day of the year by adding up the hourly traded volumes corresponding to the 12 hourly intervals, considered as off-peak hours (including 1st-8th and 21st-24th intervals).</p> <p>For the day of daylight switching from summer to winter hour, OPCOM publishes the volume calculated for 13 hourly intervals:</p> $volume_{off-peak} = \sum_{j=1}^9 volume_j + \sum_{j=22}^{25} volume_j$

For the day of daylight switching from winter to summer hour, OPCOM publishes the volume calculated for 11 hourly intervals:

$$volume_{off-peak} = \sum_{j=1}^7 volume_j + \sum_{j=20}^{23} volume_j$$

Intraday Market (IDM)

Price hourly [euro/MWh] / [lei/MWh]



ROPEX_ID_H

This price index represents the hourly volume weighted average of the Intraday Market prices:

$$ROPEX_{ID_H} = \frac{\sum_{i=1}^n p_{Hi} * q_{Hi}}{q_{Hi}}$$

This price index is associated to each hourly interval of a day. Block trades are excluded from the calculation.

For the day of daylight switching from summer to winter hour, OPCOM publishes the ROPEX_ID_H calculated for 25 hourly intervals,

For the day of daylight switching from winter to summer hour, OPCOM publishes the ROPEX_ID_H calculated for 23 hourly intervals.

For each interval of a delivery day, the volume weighted average price in Lei is calculated as a volume weighted average of the hourly trades prices converted in Lei at the exchange rate published by the National Bank of Romania on the working day before the corresponding delivery day. For the delivery days of Saturday, Sunday and Monday, in order to determine the value of the index in Lei, the exchange rate published by National Bank of Romania on Friday will be considered, while for any other non-banking days will be used the latest exchange rate published by National Bank of Romania.

Price daily base [lei/MWh] / [euro/MWh]




ROPEX_ID_Base


This price index represents the daily arithmetic average of the Intraday Market prices set for each hourly interval:


$$ROPEX_{ID_Base} = \frac{\sum_{j=1}^{24} p_j}{24}$$

This price index is determined for every day of the year as the arithmetic mean of the prices corresponding to the 24 hourly intervals. Block trades are excluded from the calculation.

	<p>For the day of daylight switching from summer to winter hour, OPCOM publishes the ROPEX_ID_Base calculated for 25 hourly intervals:</p> $ROPEX_ID_Base = \frac{\sum_{j=1}^{25} p_j}{25}$ <p>For the day of daylight switching from winter to summer hour, OPCOM publishes the ROPEX_ID_Base calculated for 23 hourly intervals:</p> $ROPEX_ID_Base = \frac{\sum_{j=1}^{23} p_j}{23}$ <p>For every delivery day, the average price in Lei is calculated as the arithmetic mean of the prices corresponding to the 24 (similar for 23/25) hourly intervals converted in Lei at the exchange rate published by the National Bank of Romania on the working day before the corresponding delivery day. For the delivery days of Saturday, Sunday and Monday, in order to determine the value of the index in Lei, the exchange rate published by National Bank of Romania on Friday will be considered, while for any other non-banking days will be used the latest exchange rate published by National Bank of Romania.</p>
<p>Price ^{daily} for peak hours [lei/MWh] / [euro/MWh]</p> <div data-bbox="108 1301 539 1391" style="background-color: #cccccc; padding: 5px;">  ROPEX_ID_Peak </div>	<p>This price index represents the arithmetic average of hourly prices corresponding to the peak hours on Intraday Market:</p> $ROPEX_ID_Peak = \frac{\sum_{j=9}^{20} p_j}{12}$ <p>This price index is determined for every day of the year as the arithmetic mean of the prices corresponding to the 12 hourly intervals, considered as peak hours (including 9th and 20th intervals). Block trades are excluded from the calculation.</p> <p>For the day of daylight switching from summer to winter hour, OPCOM publishes ROPEX_ID_Peak calculated for 12 hourly intervals:</p> $ROPEX_ID_Peak = \frac{\sum_{j=10}^{21} p_j}{12}$ <p>For the day of daylight switching from winter to summer hour, OPCOM publishes ROPEX_ID_Peak calculated for 12 hourly intervals:</p> $ROPEX_ID_Peak = \frac{\sum_{j=8}^{19} p_j}{12}$

	<p>For every delivery day, the average price in Lei is calculated as the arithmetic mean of the prices corresponding to the 12 hourly intervals converted in Lei at the exchange rate published by the National Bank of Romania on the working day before the corresponding delivery day. For the delivery days of Saturday, Sunday and Monday, in order to determine the value of the index in EUR ,the exchange rate published by National Bank of Romania on Friday will be considered, while for any other non-banking days will be used the latest exchange rate published by National Bank of Romania.</p>
<p>VWAP_{block} [lei/MWh] / [euro/MWh]</p>	<p>This price index represents the volume weighted average price of all block trades split into the individual hours:</p> $VWAP_{block} = \frac{\sum_{i=1}^n p_{i_block} * q_{i_block}}{q_{i_block}}$ <p>This price index is associated to each hourly interval of a day.</p> <p>For the day of daylight switching from summer to winter hour, OPCOM publishes the VWAP_{block} calculated for 25 hourly intervals,</p> <p>For the day of daylight switching from winter to summer hour, OPCOM publishes the VWAP_{block} calculated for 23 hourly intervals.</p> <p>For each interval of a delivery day, the volume weighted average price in Lei is calculated as a volume weighted average of the hourly trades prices converted in Lei at the exchange rate published by the National Bank of Romania on the working day before the corresponding delivery day. For the delivery days of Saturday, Sunday and Monday, in order to determine the value of the index in Lei, the exchange rate published by National Bank of Romania on Friday will be considered, while for any other non-banking days will be used the latest exchange rate published by National Bank of Romania.</p>
<p>Block volume [MWh]</p>	<p>This index represents the sum of the block volumes traded on Intraday Market. In the case of a block with delivery in two different days it will be calculated as follows:</p> <ul style="list-style-type: none"> - in the first delivery day covered by the block, the volume corresponding to the hourly intervals of the first delivery day covered by the block will be taken into account. - in the second delivery day covered by the block, the volume corresponding to the hourly intervals of the second delivery day covered by the block will be taken into account.

	$Block\ Volume = \sum_{i=1}^n block\ volume\ i$ <p>This volume is determined for every delivery day of the year.</p>
<p>VWAP_{15 min} [euro/MWh] / [lei/MWh]</p>	<p>This price index represents the volume weighted average price of the Intraday Market prices set for each 15 minutes interval:</p> $VWAP_{15\ min} = \frac{\sum_{i=1}^n p_{i,15min} * q_{i,15min}}{q_{i,15min}}$ <p>This price index is associated to each 15 minutes interval of a day.</p> <p>For the day of daylight switching from summer to winter hour, OPCOM publishes the VWAP_{15 min} calculated for 100 intervals of 15 minutes.</p> <p>For the day of daylight switching from winter to summer hour, OPCOM publishes the VWAP_{15 min} calculated for 92 intervals of 15 minutes.</p> <p>For each interval of a delivery day, the volume weighted average price in Lei is calculated as a volume weighted average of the 15 minutes trades prices converted in Lei at the exchange rate published by the National Bank of Romania on the working day before the corresponding delivery day. For the delivery days of Saturday, Sunday and Monday, in order to determine the value of the index in Lei, the exchange rate published by National Bank of Romania on Friday will be considered, while for any other non-banking days will be used the latest exchange rate published by National Bank of Romania.</p>
<p>Price_{daily base} [lei/MWh] / [euro/MWh]</p> <div data-bbox="108 1666 539 1769" style="background-color: #cccccc; padding: 5px;">  ROPEX_ID_Base (1-96) </div>	<p>This price index represents the daily arithmetic average of the Intraday Market prices set for each 15 minutes interval:</p> $ROPEX_ID_{Base\ (1-96)} = \frac{\sum_{j=1}^{96} p_j}{96}$ <p>This price index is determined for every day of the year as the arithmetic mean of the prices corresponding to the 96 intervals of 15 minutes from a day.</p> <p>For the day of daylight switching from summer to winter hour, OPCOM publishes the ROPEX_ID_Base calculated for 100 intervals of 15 minutes:</p> $ROPEX_ID_{Base\ (1-100)} = \frac{\sum_{j=1}^{100} p_j}{100}$

	<p>For the day of daylight switching from winter to summer hour, OPCOM publishes the ROPEX_ID_Base calculated for 92 intervals of 15 minutes:</p> $ROPEX_ID_{Base(1-92)} = \frac{\sum_{j=1}^{92} p_j}{92}$ <p>For every delivery day, the average price in Lei is calculated as the arithmetic mean of the prices corresponding to the 96 (similar for 100/92) 15 minutes intervals converted in Lei at the exchange rate published by the National Bank of Romania on the working day before the corresponding delivery day. For the delivery days of Saturday, Sunday and Monday, in order to determine the value of the index in Lei, the exchange rate published by National Bank of Romania on Friday will be considered, while for any other non-banking days will be used the latest exchange rate published by National Bank of Romania.</p>
<p>Price _{daily} for peak hours [lei/MWh] / [euro/MWh]</p>  <p>ROPEX_ID_Peak (33-80)</p>	<p>This price index represents the arithmetic average of 15 minutes prices corresponding to the peak hours on Intraday Market:</p> $ROPEX_ID_Peak = \frac{\sum_{j=33}^{80} p_j}{48}$ <p>This price index is determined for every day of the year as the arithmetic mean of the prices corresponding to the 48 intervals of 15 minutes, considered as peak hours (including 33 and 80 intervals).</p> <p>For the day of daylight switching from summer to winter hour, OPCOM publishes ROPEX_ID_Peak calculated for 48 intervals of 15 minutes:</p> $ROPEX_ID_Peak = \frac{\sum_{j=37}^{84} p_j}{48}$ <p>For the day of daylight switching from winter to summer hour, OPCOM publishes ROPEX_ID_Peak calculated for 48 intervals of 15 minutes:</p> $ROPEX_ID_Peak = \frac{\sum_{j=29}^{76} p_j}{48}$ <p>For every delivery day, the average price in Lei is calculated as the arithmetic mean of the prices corresponding to the 48 intervals of 15 minutes converted in Lei at the exchange rate published by the National Bank of Romania on the working day before the corresponding delivery day. For the delivery days of Saturday, Sunday and Monday, in order to determine the value of the index in Lei, the exchange rate published by National Bank</p>

	<p>of Romania on Friday will be considered, while for any other non-banking days will be used the latest exchange rate published by National Bank of Romania.</p>
<p>Total volume for 15 min transactions [MWh]</p>	<p>This index represents the sum of the 15 minutes volumes traded on Intraday Market, measured in hourly units:</p> $volume = \sum_{j=1}^{96} volume_{j(product15min)} * \frac{1}{4}$ <p>This volume is determined for each delivery day of the year as the sum of the volumes corresponding to the 96 intervals of 15-minute, measured in hourly units.</p> <p>For the day of daylight switching from summer to winter hour, OPCOM publishes the volume calculated for the 100 intervals of 15-minute, measured in hourly units:</p> $volume = \sum_{j=1}^{100} volume_{j(product15min)} * \frac{1}{4}$ <p>For the day of daylight switching from winter to summer hour, OPCOM publishes the volume calculated for the 92 intervals of 15-minute, measured in hourly units:</p> $volume = \sum_{j=1}^{92} volume_{j(product15min)} * \frac{1}{4}$
<p>Hourly trade volume[MWh]</p>	<p>This index represents the sum of hourly volumes traded on Intraday Market for a delivery day:</p> $Hourly\ Trade\ volumes = \sum_{i=1}^n hourly\ volume_i$ <p>This volume is determined for each delivery day of the year.</p>

Forward Market (FM) for electricity

Weighted average price calculated for contracts with delivery in month M [lei/MWh]



This index represents the volume weighted average of prices resulted from bilateral contracts with delivery in month M traded on forward markets administrated by OPCOM SA:

$$ROPEX_{FM_M} = \frac{\sum_{i=1}^n (p * q)_{CMBC-EA} + \sum_{i=1}^n (p * q)_{CMBC-CN} + \sum_{i=1}^n (p * q)_{CM-OTC} + \sum_{i=1}^n (p * q)_{PCSU} + \sum_{i=1}^n (p * q)_{LMC} + \sum_{i=1}^n (p * q)_{CMBC-EA-Flex}}{\sum_{i=1}^n q_{(CMBC-EA)} + \sum_{i=1}^n q_{(CMBC-CN)} + \sum_{i=1}^n q_{(CM-OTC)} + \sum_{i=1}^n q_{(PCSU)} + \sum_{i=1}^n q_{(LMC)} + \sum_{i=1}^n q_{(PCMBC-EA-Flex)}}$$

Starting with March 1st, 2021, this price index is customized for Centralised Market for Electricity Bilateral Contracts - Extended Auctions Mechanism (CMBC-EA), Centralised Market for Electricity Bilateral Contracts - Continuous Negotiation Mechanism (CMBC-CN), Centralised market with double continuous negotiation (CM-OTC) for electricity bilateral contracts, Centralized Market for Universal Service (PCSU), Electricity market for large consumers (LCM) and Centralized market for electricity bilateral contracts – extended auctions mechanism and products that ensure the flexibility of trading (CMBC-EA-Flex), being calculated as volume weighted average of all contracts with delivery for month M, on these six markets. According to the ANRE Order no. 50/2019, ANRE Order no.64/2020 and the ANRE letters no. 19941/02.03.2020 and 34453/27.04.2020 are excluded from the calculation of the indices, the contracts terminated / ceased with the agreement of the parties and notified to OPCOM, which have been concluded through the CMBC-EA, CMBC-EA-Flex and CMBC-CN mechanism.

For each delivery month, the average price in Euro is calculated as volume weighted average of the bilateral contracts prices converted to Euros taking into account the exchange rate of the trading day published by the National Bank of Romania (NBR).

The update is made on the trading day of a new contract, respectively on the working day following the publication on the website of the contracts terminated / ceased with the agreement of the parties.

Weighted average price calculated for contracts with delivery in year Y [lei/MWh]



This index represents the volume weighted average of prices resulted from bilateral contracts with delivery in year Y traded on forward markets administrated by OPCOM SA:

$$ROPEX_{FM_Y} = \frac{\sum_{i=1}^n (p * q)_{CMBC-EA} + \sum_{i=1}^n (p * q)_{CMBC-CN} + \sum_{i=1}^n (p * q)_{CM-OTC} + \sum_{i=1}^n (p * q)_{PCSU} + \sum_{i=1}^n (p * q)_{LMC} + \sum_{i=1}^n (p * q)_{CMBC-EA-Flex}}{\sum_{i=1}^n q_{(CMBC-EA)} + \sum_{i=1}^n q_{(CMBC-CN)} + \sum_{i=1}^n q_{(CM-OTC)} + \sum_{i=1}^n q_{(PCSU)} + \sum_{i=1}^n q_{(LMC)} + \sum_{i=1}^n q_{(PCMBC-EA-Flex)}}$$

Starting with March 1st, 2021, this index is customized for Centralised Market for Electricity Bilateral Contracts - Extended Auctions Mechanism (CMBC-EA), Centralised Market for Electricity Bilateral Contracts - Continuous Negotiation Mechanism (CMBC-CN), Centralised market with double continuous negotiation (CM-OTC) for electricity bilateral contracts, Centralized Market

	<p>for Universal Service (PCSU), Electricity market for large consumers (LCM) and Centralized market for electricity bilateral contracts – extended auctions mechanism and products that ensure the flexibility of trading (CMBC-EA-Flex) being calculated as volume weighted average of all contracts with delivery in year Y on CMBC-EA, CMBC-CN, CM-OTC, PCSU, LCM and CMBC-EA-Flex. According to the ANRE Order no. 50/2019, ANRE Order no.64/2020 and the ANRE letters no. 19941/02.03.2020 and 34453/27.04.2020 are excluded from the calculation of the indices, the contracts terminated / ceased with the agreement of the parties and notified to OPCOM, which have been concluded through the CMBC-EA, CMBC-EA-Flex and CMBC-CN mechanism.</p> <p>For each delivery year, average price in Euro is calculated as volume weighted average of the bilateral contracts prices converted to Euro taking into account the exchange rate of the trading day published by the National Bank of Romania (NBR).</p> <p>The update is made on the trading day of a new contract, respectively on the working day following the publication on the website of the contracts terminated / ceased with the agreement of the parties.</p>
<p>Volume (quantity) of the contracts with delivery for month M corresponding to ROPEX_FM [MWh]</p>	<p>Total volume of the bilateral contracts with delivery for month M traded on forward markets administrated by OPCOM SA:</p> $Volume_{ROPEX_{FM}} = \sum_{i=1}^n q_{Mi(CMBC-EA)} + \sum_{i=1}^n q_{Mi(CMBC-CN)} + \sum_{i=1}^n q_{Mi(CM-OTC)} + \sum_{i=1}^n q_{Mi(PCSU)} + \sum_{i=1}^n q_{Mi(LMC)} + \sum_{i=1}^n q_{Mi(CMBC-EA-Flex)}$ <p>Starting with March 1st, 2021 this volume is customized for Centralised Market for Electricity Bilateral Contracts - Extended Auctions Mechanism (CMBC-EA), Centralised Market for Electricity Bilateral Contracts - Continuous Negotiation Mechanism (CMBC-CN), Centralised market with double continuous negotiation (CM-OTC) for electricity bilateral contracts, Centralized Market for Universal Service (PCSU), Electricity market for large consumers (LCM) and Centralized market for electricity bilateral contracts – extended auctions mechanism and products that ensure the flexibility of trading (CMBC-EA-Flex), being calculated as sum of the volumes of all contracts with delivery for month M traded on these six markets. According to the ANRE Order no. 50/2019, ANRE Order no.64/2020 and the ANRE letters no. 19941/02.03.2020 and 34453/27.04.2020 are excluded from the calculation of the indices, the contracts terminated / ceased with the agreement of the parties and notified to OPCOM, which have been concluded through the CMBC-EA, CMBC-EA-Flex and CMBC-CN mechanism.</p> <p>The update is made on the trading day of a new contract, respectively on the working day following the publication on the website of the contracts terminated / ceased with the agreement of the parties.</p>
<p>Volume (quantity) of the contracts with delivery for</p>	<p>Total volume of the bilateral contracts with delivery for the year Y traded on forward markets administrated by OPCOM SA:</p> $Volume_{ROPEX_{FY}} = \sum_{i=1}^n q_{Yi(CMBC-EA)} + \sum_{i=1}^n q_{Yi(CMBC-CN)} + \sum_{i=1}^n q_{Yi(CM-OTC)} + \sum_{i=1}^n q_{Yi(PCSU)} + \sum_{i=1}^n q_{Yi(LMC)} + \sum_{i=1}^n q_{Yi(CMBC-EA-Flex)}$

<p>month Y corresponding to ROPEX_FM [MWh]</p>	<p>Starting with March 1st, 2021 this volume is customized for Centralised Market for Electricity Bilateral Contracts - Extended Auctions Mechanism (CMBC-EA), Centralised Market for Electricity Bilateral Contracts - Continuous Negotiation Mechanism (CMBC-CN), Centralised market with double continuous negotiation (CM-OTC) for electricity bilateral contracts, Centralized Market for Universal Service (PCSU), Electricity market for large consumers (LCM) and Centralized market for electricity bilateral contracts – extended auctions mechanism and products that ensure the flexibility of trading (CMBC-EA-Flex) being calculated as sum of the volumes of all contracts with delivery for year Y traded on these six markets. According to the ANRE Order no. 50/2019, ANRE Order no.64/2020 and the ANRE letters no. 19941/02.03.2020 and 34453/27.04.2020 are excluded from the calculation of the indices, the contracts terminated / ceased with the agreement of the parties and notified to OPCOM, which have been concluded through the CMBC-EA, CMBC-EA-Flex and CMBC-CN mechanism.</p> <p>The update is made on the trading day of a new contract, respectively on the working day following the publication on the website of the contracts terminated / ceased with the agreement of the parties.</p>
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Centralised Market for Electricity Bilateral Contracts and Centralized market for electricity from renewable energy sources supported by green certificates

<p>Weighted average price of those bilateral contracts with delivery for month M on the CMBC and CME-RES-GC [lei/MWh]</p>	<p>The volume weighted average price of those bilateral contracts with delivery for month M that are traded on the Centralised Market for Electricity Bilateral Contracts administrated by OPCOM SA:</p> $Price_{CMBC+CME-RES-GC} = \frac{\sum_{i=1}^n (P_{Mi} * q_{Mi})_{CMBC-EA} + \sum_{i=1}^n (P_{Mi} * q_{Mi})_{CMBC-CN} + \sum_{i=1}^n (P_{Mi} * q_{Mi})_{CMBC-EA-Flex} + \sum_{i=1}^n (P_{Mi} * q_{Mi})_{CME-RES-GC}}{\sum_{i=1}^n q_{Mi}(CMBC-EA) + \sum_{i=1}^n q_{Mi}(CMBC-CN) + \sum_{i=1}^n q_{Mi}(CMBC-EA-Flex) + \sum_{i=1}^n q_{Mi}(CME-RES-GC)}$ <p>For the moment this price is singularized for the Centralised Market for Electricity Bilateral Contracts - Extended Auctions Mechanism (CMBC-EA), the Centralised Market for Electricity Bilateral Contracts - Continuous Negotiation Mechanism (CMBC-CN), Centralized market for electricity bilateral contracts – extended auctions mechanism and products that ensure the flexibility of trading (CMBC-EA-Flex) and Centralized market for electricity from renewable energy sources supported by green certificates (CME-RES-GC) being calculated as volume weighted average of the prices of all contracts with delivery for month M traded on these four markets . According to the ANRE Order no. 50/2019, ANRE Order no.64/2020 and the ANRE letters no. 19941/02.03.2020 and 34453/27.04.2020 are excluded from the calculation of the indices, the contracts terminated / ceased with the agreement of the parties and notified to OPCOM, which have been concluded through the CMBC-EA, CMBC-EA-Flex and CMBC-CN mechanism.</p>
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	<p>For each delivery month, the average price in Euro is calculated as volume weighted average of the respective bilateral contracts prices converted to Euro taking into account the exchange rate of the trading day published by the National Bank of Romania (NBR).</p> <p>The update is made on the trading day of a new contract, respectively on the working day following the publication on the website of the contracts terminated / ceased with the agreement of the parties.</p>
<p>Sum of volumes of those contracts with delivery for month M on the CMBC and CME-RES-GC [MWh]</p>	<p>Sum of volumes of those bilateral contracts with delivery for month M traded on the Centralised Market for Electricity Bilateral Contracts administrated by OPCOM SA:</p> $Volume_{CMBC+CME-RES-GC} = \sum_{i=1}^n q_{Mi(CMBC-EA)} + \sum_{i=1}^n q_{Mi(CMBC-CN)} + \sum_{i=1}^n q_{Mi(CMBC-EA-Flex)} + \sum_{i=1}^n q_{Mi(CME-RES-GC)}$ <p>For the moment this volume is singularized for the Centralised Market for Electricity Bilateral Contracts - Extended Auctions Mechanism (CMBC-EA), the Centralised Market for Electricity Bilateral Contracts - Continuous Negotiation Mechanism (CMBC-CN), Centralized market for electricity bilateral contracts – extended auctions mechanism and products that ensure the flexibility of trading (CMBC-EA-Flex) and Centralized market for electricity from renewable energy sources supported by green certificates (CME-RES- GC) being calculated as sum of the volumes of all contracts with delivery for month M traded on these four markets. According to the ANRE Order no. 50/2019, ANRE Order no.64/2020 and the ANRE letters no. 19941/02.03.2020 and 34453/27.04.2020 are excluded from the calculation of the indices, the contracts terminated / ceased with the agreement of the parties and notified to OPCOM, which have been concluded through the CMBC-EA, CMBC-EA-Flex and CMBC-CN mechanism.</p> <p>The update is made on the trading day of a new contract, respectively and on the working day following the publication on the website of the contracts terminated / ceased with the agreement of the parties. For each delivery month, the average price in Euro is calculated as volume weighted average of the respective bilateral contracts prices converted to Euro taking into account the exchange rate of the trading day published by the National Bank of Romania (NBR).</p>

Centralised market for electricity bilateral contracts - extended auctions mechanism and products that ensure the flexibility of trading (CMBC-EA-Flex)

<p>Weighted average price calculated for contracts with delivery for month M [lei/MWh]</p>	<p>The volume weighted average of the prices from the bilateral contracts concluded by extended auction for the delivery month (p_M) on the centralised market for electricity bilateral contracts - extended auctions mechanism and products that ensure the flexibility of trading (CMBC-EA-Flex):</p> $Price = \frac{\sum_{i=1}^n p_{Mi} * q_{Mi}}{\sum_{i=1}^n q_{Mi}}$ <p>This price is determined as the volume weighted average of the prices of all contracts with delivery in the month M, regardless the contract concluding moment and it is brought up to date as often as a new contract with delivery in that month is traded. According to the ANRE Order no. 64/2020, Order no. 50/2019 and the ANRE letter no. 34453/27.04.2020 are excluded from the calculation of the indices, the contracts terminated / ceased with the agreement of the parties and notified to OPCOM, which have been concluded through the CMBC-EA-Flex mechanism.</p> <p>For each delivery month, the average price is converted to Euro taking into account the exchange rate of the trading day published by the National Bank of Romania (NBR).</p> <p>The update is made on the trading day of a new contract, respectively on the working day following the publication on the website of the contracts terminated / ceased with the agreement of the parties.</p>
<p>Price_{base} [lei/MWh]</p>	<p>The volume weighted average of the prices from the bilateral contracts concluded by extended auction for the delivery month for base load electricity on the Centralised market for electricity bilateral contracts - extended auctions mechanism and products that ensure the flexibility of trading (CMBC-EA-Flex):</p> $Price_{base} = \frac{\sum_{i=1}^n p_i * q_{i(int. 1-24)}}{\sum_{i=1}^n q_{i(int. 1-24)}}$ <p>This price is calculated as the volume weighted average of the prices of all types of contracts with delivery in a month, regardless the contract concluding moment and it is brought up to date as often as a new contract with delivery in that month is traded. According to the ANRE Order no. 64/2020, Order no. 50/2019 and the ANRE letter no. 34453/27.04.2020 are excluded from the calculation of the indices, the contracts terminated / ceased with the agreement of the parties and notified to OPCOM, which have been concluded through the CMBC-EA mechanism.</p>

	<p>For each delivery month, the average price in Euro is calculated as volume weighted average of the respective bilateral contracts prices converted to Euro taking into account the exchange rate of the trading day published by the National Bank of Romania (NBR).</p> <p>The update is made on the trading day of a new contract, respectively on the working day following the publication on the website of the contracts terminated / ceased with the agreement of the parties.</p>
<p>Price_{peak} [lei/MWh]</p>	<p>The volume weighted average of the prices from the bilateral contracts concluded by extended auction for the delivery month for peak load electricity on the Centralised market for electricity bilateral contracts - extended auctions mechanism and products that ensure the flexibility of trading (CMBC-EA-Flex):</p> $Price_{peak} = \frac{\sum_{1 \leq i \leq m, 1 \leq j \leq n} p_{iP_j} * q_{iP_j}}{\sum_{1 \leq i \leq m, 1 \leq j \leq n} q_{iP_j}}$ <p>where P_j represents the delivery profile at peak 1 (Monday to Friday, 06:00 to 22:00 CET) and peak 2 (Monday to Sunday, 06:00 to 22:00 CET).</p> <p>This price is calculated as the volume weighted average of the prices of all types of contracts with delivery for the peak load intervals j of the respective month, regardless the contract concluding moment and it is brought up to date as often as a new contract with delivery in that month is traded. According to the ANRE Order no. 64/2019, Order no. 50/2019 and the ANRE letter no. 34453/27.04.2020 are excluded from the calculation of the indices, the contracts terminated / ceased with the agreement of the parties and notified to OPCOM, which have been concluded through the CMBC-EA-Flex mechanism.</p> <p>For each delivery month, the average price in Euro is calculated as volume weighted average of the respective bilateral contracts prices converted to Euro taking into account the exchange rate of the trading day published by the National Bank of Romania (NBR).</p> <p>The update is made on the trading day of a new contract, respectively on the working day following the publication on the website of the contracts terminated / ceased with the agreement of the parties.</p>
<p>Price_{off-peak} [lei/MWh]</p>	<p>The volume weighted average of the prices from the bilateral contracts concluded by extended auction for the delivery month for off-peak load electricity on the Centralised market for electricity bilateral contracts - extended auctions mechanism and products that ensure the flexibility of trading (CMBC-EA-Flex):</p> $Price_{off-peak} = \frac{\sum_{1 \leq i \leq m, 1 \leq j \leq n} p_{iO_j} * q_{iO_j}}{\sum_{1 \leq i \leq m, 1 \leq j \leq n} q_{iO_j}}$ <p>where O_j represents the delivery off-peak 1 (Monday to Friday, 00:00-06:00 and 22:00-24:00 CET and Saturday to Sunday, 00:00-24:00 CET).</p> <p>This price is calculated as the volume weighted average of the prices of all contracts with delivery for the off-peak load intervals j, respectively 1-6 and</p>

23-24 intervals from Monday to Friday and 1-24 for Saturday and Sunday) of the respective month, regardless the contract concluding moment and it is brought up to date as often as a new contract with delivery in that month is traded. According to the ANRE Order no. 64/2019, Order no 50/2019 and the ANRE letter no. 34453/27.04.2020 are excluded from the calculation of the indices, the contracts terminated / ceased with the agreement of the parties and notified to OPCOM, which have been concluded through the CMBC-EA-Flex mechanism.

For each delivery month, the average price in Euro is calculated as volume weighted average of the respective bilateral prices contracts converted to Euro taking into account the exchange rate of the trading day published by the National Bank of Romania (NBR).

The update is made on the trading day of a new contract, respectively on the working day following the publication on the website of the contracts terminated / ceased with the agreement of the parties.

Centralised Market for Electricity Bilateral Contracts - Continuous Negotiation Mechanism (CMBC-CN)

Base Average price
_instrument
[lei/MWh]
(*price_{base_instrument}*)

The volume weighted average of the prices from the contracts concluded by continuous negotiation for the base load electricity, for the delivery period (p_i) on Centralised Market for Electricity Bilateral Contracts - Continuous Negotiation Mechanism:

$$Pr i ce_{base_instrument} = \frac{\sum_{i=1}^n p_{li} * q_{li}}{\sum_{i=1}^n q_{li}}$$

On the Centralised Market for Electricity Bilateral Contracts - Continuous Negotiation Mechanism, the concluded contracts have the delivery period specified by the type of the tradable instrument (day, week, month, quarter, half-year or year).

This price is calculated separately for this instrument as the volume weighted average mean of those trades by continuous negotiation with delivery for the base load electricity. According to the ANRE Order no. 50/2019 and the ANRE letter no. 19941/02.03.2020 are excluded from the calculation of the indices, the contracts terminated / ceased with the agreement of the parties and notified to OPCOM, which have been concluded through the CMBC-CN mechanism.

For each instrument, the average price in Euro is calculated as the average of the prices converted in Euro taking into account the exchange rate of the trading day of each instrument published by the National Bank of Romania (NBR).

	<p>The update is made on the trading day of a new contract, respectively on the working day following the publication on the website of the contracts terminated / ceased with the agreement of the parties.</p>
<p>Peak 1 Average price _instrument [lei/MWh] (<i>price_{peak1_instrument}</i>)</p>	<p>The volume weighted average of the prices from the contracts concluded by continuous negotiation for the peak 1 load electricity, for the delivery period (p_i) on Centralised Market for Electricity Bilateral Contracts - Continuous Negotiation Mechanism:</p> $Pr i c e_{peak1_instrument} = \frac{\sum_{i=1}^n p_{Ii} * q_{Ii(int.7-22M-F)}}{\sum_{i=1}^n q_{Ii}}$ <p>On the Centralised Market for Electricity Bilateral Contracts - Continuous Negotiation Mechanism, the concluded contracts have the delivery period specified by the type of the tradable instrument (week, month, quarter, half-year or year) specific for these markets.</p> <p>This price is calculated separately for this instrument as the volume weighted average mean of those traded by continuous negotiation with delivery for the peak 1 load electricity (intervals 7 – 22 from Monday to Friday). According to the ANRE Order no. 50/2019 and the ANRE letter no. 19941/02.03.2020 are excluded from the calculation of the indices, the contracts terminated / ceased with the agreement of the parties and notified to OPCOM, which have been concluded through the CMBC-CN mechanism.</p> <p>For each instrument, the average price in Euro is calculated as the average of the prices converted in Euro taking into account the exchange rate of the trading day of each instrument published by the National Bank of Romania (NBR).</p> <p>The update is made on the trading day of a new contract, respectively on the working day following the publication on the website of the contracts terminated / ceased with the agreement of the parties.</p>
<p>Peak 2 Average price _instrument [lei/MWh] (<i>price_{peak2_instrument}</i>)</p>	<p>The volume weighted average of the prices from the contracts concluded by continuous negotiation for the peak 2 load electricity, for the delivery period (p_i) on Centralised Market for Electricity Bilateral Contracts - Continuous Negotiation Mechanism:</p> $Pr i c e_{peak2_instrument} = \frac{\sum_{i=1}^n p_{Ii} * q_{Ii(int.7-22M-Su)}}{\sum_{i=1}^n q_{Ii}}$ <p>On the Centralised Market for Electricity Bilateral Contracts - Continuous Negotiation Mechanism, the concluded contracts have the delivery period specified by the type of the tradable instrument (day, week, month, quarter, half-year or year) specific for these markets.</p> <p>This price is calculated separately for this instrument as the volume weighted average mean of those traded by continuous negotiation with delivery for the</p>

	<p>peak 2 load electricity (intervals 7 – 22 from Monday to Sunday). According to the ANRE Order no. 50/2019 and the ANRE letter no. 19941/02.03.2020 are excluded from the calculation of the indices, the contracts terminated / ceased with the agreement of the parties and notified to OPCOM, which have been concluded through the CMBC-CN mechanism.</p> <p>For each instrument, the average price in Euro is calculated as the average of the prices converted in Euro taking into account the exchange rate of the trading day of each instrument published by the National Bank of Romania (NBR).</p> <p>The update is made on the trading day of a new contract, respectively on the working day following the publication on the website of the contracts terminated / ceased with the agreement of the parties.</p>
<p>Off-peak Average price _instrument [lei/MWh] (<i>price_{off-peak_instrument}</i>)</p>	<p>The volume weighted average of the prices from the contracts concluded by continuous negotiation for the off-peak load electricity, for the delivery period (p_i) on Centralised Market for Electricity Bilateral Contracts - Continuous Negotiation Mechanism:</p> $Price_{off-peak_instrument} = \frac{\sum_{i=1}^n p_i (int. 1-6; 23-24, M-F; int. 1-24, Sa-Su)}{n}$ <p>On the Centralised Market for Electricity Bilateral Contracts - Continuous Negotiation Mechanism, the concluded contracts have the delivery period specified by the type of the tradable instrument (day, week, month, quarter, half-year or year) specific for these markets.</p> <p>This price is calculated separately for each instrument as the volume weighted average mean of those traded by continuous negotiation with delivery for the off-peak load electricity (intervals 1 – 6 and 23 – 24 from Monday to Friday and 1 – 24 for Saturday and Sunday). According to the ANRE Order no. 50/2019 and the ANRE letter no. 19941/02.03.2020 are excluded from the calculation of the indices, the contracts terminated / ceased with the agreement of the parties and notified to OPCOM, which have been concluded through the CMBC-CN mechanism.</p> <p>For each instrument, the average price in Euro is calculated as the average of the prices converted in Euro taking into account the exchange rate of the trading day of each instrument published by the National Bank of Romania (NBR).</p> <p>The update is made on the trading day of a new contract, respectively on the working day following the publication on the website of the contracts terminated / ceased with the agreement of the parties.</p>
<p>Total volume of the contracts with delivery for instrument [MWh]</p>	<p>Total volume of the bilateral contracts with delivery for all instruments traded on Centralised Market for Electricity Bilateral Contracts - Continuous Negotiation Mechanism CMBC-CN:</p>

$$Volum_{CMBC-CN} = \sum_{i=1}^n q_{I_i(CMBC-CN)}$$

For the moment this volume is being calculated as sum of the volumes of all contracts with delivery for month M traded on Centralised Market for Electricity Bilateral Contracts - Continuous Negotiation Mechanism CMBC-CN. According to the ANRE Order no. 50/2019 and the ANRE letter no. 19941/02.03.2020 are excluded from the calculation of the indices, the contracts terminated / ceased with the agreement of the parties and notified to OPCOM, which have been concluded through the CMBC-CN mechanism.

Centralised Market with Double Continuous Negotiation for Electricity Bilateral Contracts – CM-OTC

Weighted average price calculated for the contracts with delivery for month M
[lei/MWh]

Volume weighted average of the prices of those bilateral contracts concluded by double continuous negotiation that have delivery on the month M (p_M) on Centralised Market with Double Continuous Negotiation for Electricity Bilateral Contracts – CM-OTC:

$$Price = \frac{\sum_{i=1}^n p_{Mi} * q_{Mi}}{\sum_{i=1}^n q_{Mi}}$$

This price is determined as the volume weighted average of the prices of all contracts with delivery in the month M, regardless the contract concluding moment and it is brought up to date as often as a new contract with delivery in that month is traded.

For each delivery month, the average price in Euro is calculated as weighted average of the respective bilateral contracts prices converted to Euro taking into account the exchange rate of the trading day published by the National Bank of Romania (NBR).

Price_{base}
[lei/MWh]

Volume weighted average of the prices of those bilateral contracts concluded by double continuous negotiation that have delivery on the month M for the base load electricity (p_M) on Centralised Market with Double Continuous Negotiation for Electricity Bilateral Contracts – CM-OTC:

$$Price_{base} = \frac{\sum_{j=1}^n p_j * q_{j(int.1-24)}}{\sum_{j=1}^n q_{j(int.1-24)}}$$

This price is determined as the volume weighted average of the prices of all contracts with delivery in the month M for the base load electricity, regardless the contract concluding moment and it is brought up to date as often as a new contract with delivery in that month for the base load electricity is traded.

	<p>For each delivery month, the average price in Euro is calculated as weighted average of the respective bilateral contracts prices converted to Euro taking into account the exchange rate of the trading day published by the National Bank of Romania (NBR).</p>
<p>Price_{peak} [lei/MWh]</p>	<p>Volume weighted average of the prices of those bilateral contracts concluded by double continuous negotiation that have delivery on the month M for the peak load electricity (p_M) on Centralised Market with Double Continuous Negotiation for Electricity Bilateral Contracts – CM-OTC:</p> $Price_{peak} = \frac{\sum_{j=1}^n p_j * q_{j(int.7-22M-F)}}{\sum_{j=1}^n q_{j(int.7-22M-F)}}$ <p>This price is determined as the volume weighted average of the prices of all contracts with delivery in the month M for the peak load electricity (intervals 7-22 from Monday to Friday), except daily instruments (intervals 7-22 from Monday to Sunday), regardless the contract concluding moment and it is brought up to date as often as a new contract with delivery in that month for the peak load electricity is traded.</p> <p>For each delivery month, the average price in Euro is calculated as weighted average of the respective bilateral contracts prices converted to Euro taking into account the exchange rate of the trading day published by the National Bank of Romania (NBR).</p>
<p>Price_{off-peak} [lei/MWh]</p>	<p>Volume weighted average of the prices of those bilateral contracts concluded by double continuous negotiation that have delivery on the month M for the off-peak load electricity (p_M) on Centralised Market with Double Continuous Negotiation for Electricity Bilateral Contracts – CM-OTC:</p> $Price_{off-peak} = \frac{\sum_{j=1}^n p_j * q_{j(int.1-6and23-24M-F;1-24Sa-Su)}}{\sum_{j=1}^n q_{j(int.1-6and23-24M-F;1-24Sa-Su)}}$ <p>This price is determined as the volume weighted average of the prices of all contracts with delivery in the month M for the off-peak load electricity (intervals 1-6 and 23-24 from Monday to Friday and 1-24 for Saturday and Sunday, except daily instruments (intervals 1-6 and 23-24 from Monday to Sunday), regardless the contract concluding moment and it is brought up to date as often as a new contract with delivery in that month for the off-peak load electricity is traded.</p> <p>For each delivery month, the average price in Euro is calculated as weighted average of the respective bilateral contracts prices converted to Euro taking into account the exchange rate of the trading day published by the National Bank of Romania (NBR).</p>
<p>Total volume of the contracts with delivery for month M [MWh]</p>	<p>Total volume of the bilateral contracts with delivery for month M traded on Centralised Market with Double Continuous Negotiation for Electricity Bilateral Contracts – CM-OTC:</p>

	$Volum_{CM-OTCM} = \sum_{i=1}^n q_{M_i(CM-OTC)}$ <p>For the moment, this volume is being calculated as sum of the volumes of all contracts with delivery for month M traded on Centralised Market with Double Continuous Negotiation for Electricity Bilateral Contracts – CM-OTC.</p>
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Centralised Market for Universal Service – CMUS

Volume weighted average price calculated for contracts with delivery for month M [lei/MWh]	<p>The volume weighted average of the prices from the bilateral contracts concluded in the trading sessions of the Centralised Market for Universal Service – CMUS for the delivery month (p_M):</p> $price = \frac{\sum_{i=1}^n p_{M_i} * q_{M_i}}{\sum_{i=1}^n q_{M_i}}$ <p>This price is determined as the volume weighted average of the prices of all contracts' with delivery in the month M, regardless the contract concluding moment and it is brought up to date as often as a new contract with delivery in that month is traded.</p> <p>For each delivery month, the average price in Euro is calculated as weighted average of the bilateral contracts prices converted to Euros taking into account the exchange rate of the trading day published by the National Bank of Romania (NBR).</p>
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Total volume of the contracts with delivery for month M [MWh]	<p>Total volume of the bilateral contracts with delivery for month M traded on Centralised Market for Universal Service – CMUS:</p> $Volum_{CMUS_M} = \sum_{i=1}^n q_{M_i(CMUS)}$ <p>For the moment this volume is being calculated as sum of the volumes of all contracts with delivery for month M traded on Centralised Market for Universal Service – CMUS.</p>
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Centralized Market for Electricity Bilateral Contracts - Extended Auctions Mechanism (CMBC – EA) operational until May 8, 2020

Weighted average price calculated for contracts with delivery for month M [lei/MWh]	<p>The volume weighted average of the prices from the bilateral contracts concluded by extended auction for the delivery month (p_M) on the Centralised Market for Electricity Bilateral Contracts - Extended Auctions Mechanism (CMBC-EA):</p> $Price = \frac{\sum_{i=1}^n p_{M_i} * q_{M_i}}{\sum_{i=1}^n q_{M_i}}$
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	<p>This price is determined as the volume weighted average of the prices of all contracts' with delivery in the month M and it is brought up to date with the contracts concluded through the CMBC-EA mechanism and terminated / ceased with the agreement of the parties and notified to OPCOM, according to the ANRE Order no. 50/2019 and the ANRE document no. 19941/03.02.2020.</p> <p>The update is made on the working day following the publication on the website of the contracts terminated / ceased with the agreement of the parties.</p>
<p>Price_{base} [lei/MWh]</p>	<p>The volume weighted average of the prices from the bilateral contracts concluded by extended auction for the delivery month for base load electricity on the Centralised Market for Electricity Bilateral Contracts - Extended Auctions Mechanism (CMBC-EA):</p> $Price_{base} = \frac{\sum_{1 \leq i \leq m, 1 \leq j \leq n} p_{iB_j} * q_{iB}}{\sum_{1 \leq i \leq m, 1 \leq j \leq n} q_{iB_j}}$ <p>where B_j represents the delivery profile in Base 1 (Monday-Friday, 00: 00-24: 00 CET) and Base 2 (Monday-Sunday, 00: 00-24: 00 CET).</p> <p>This price is calculated as the volume weighted average of the prices of all types of contracts with delivery in a month for base j load electricity and it is brought up to date with the contracts concluded through the CMBC-EA mechanism and terminated / ceased with the agreement of the parties and notified to OPCOM, according to the ANRE Order no. 50/2019 and the ANRE document no. 19941/03.02.2020.</p> <p>The update is made on the working day following the publication on the website of the contracts terminated / ceased with the agreement of the parties.</p>
<p>Price_{peak} [lei/MWh]</p>	<p>The volume weighted average of the prices from the bilateral contracts concluded by extended auction for the delivery month for peak load electricity on the Centralised Market for Electricity Bilateral Contracts - Extended Auctions Mechanism (CMBC-EA):</p> $Price_{peak} = \frac{\sum_{1 \leq i \leq m, 1 \leq j \leq n} p_{iP_j} * q_{iP_j}}{\sum_{1 \leq i \leq m, 1 \leq j \leq n} q_{iP_j}}$ <p>where P_j represents the delivery profile at peak 1 (Monday to Friday, 06:00 to 22:00 CET), peak 2 (Monday to Sunday, 06:00 to 22:00 CET), peak EU (Monday- Friday, 08: 00-20: 00 CET) and Peak E1 (Monday to Sunday, 16: 00-21: 00 CET).</p> <p>This price is calculated as the volume weighted average of the prices of all types of contracts with delivery for the peak load intervals j of the respective month, regardless the contract concluding moment and it is brought up to date with the contracts concluded through the CMBC-EA mechanism and terminated</p>

	<p>/ ceased with the agreement of the parties and notified to OPCOM, according to the ANRE Order no. 50/2019 and the ANRE document no. 19941/03.02.2020.</p> <p>The update is made on the working day following the publication on the website of the contracts terminated / ceased with the agreement of the parties.</p>
<p>Price_{off-peak} [lei/MWh]</p>	<p>The volume weighted average of the prices from the bilateral contracts concluded by extended auction for the delivery month for off-peak load electricity on the Centralised Market for Electricity Bilateral Contracts - Extended Auctions Mechanism (CMBC-EA):</p> $Price_{off-peak} = \frac{\sum_{1 \leq i \leq m, 1 \leq j \leq n} p_{iO_j} * q_{iO_j}}{\sum_{1 \leq i \leq m, 1 \leq j \leq n} q_{iO_j}}$ <p>where O_j represents the delivery off-peak 1 (Monday to Friday, 00:00-06:00 and 22:00-24:00 CET and Saturday to Sunday, 00:00-24:00 CET). This price is calculated as the volume weighted average of the prices of all contracts with delivery for the off-peak load intervals j, respectively 1-6 and 23-24 intervals from Monday to Friday and 1-24 for Saturday and Sunday) of the respective month, regardless the contract concluding moment and it is brought up to date with the contracts concluded through the CMBC-EA mechanism and terminated / ceased with the agreement of the parties and notified to OPCOM, , according to the ANRE Order no. 50/2019 and the ANRE document no. 19941/03.02.2020.</p> <p>The update is made on the working day following the publication on the website of the contracts terminated / ceased with the agreement of the parties.</p>

Centralized market for electricity from renewable energy sources supported by green certificates - CME-RES- GC

<p>Volume weighted average price calculated for contracts with delivery for month M [lei/MWh]</p>	<p>The volume weighted average of the prices from the bilateral contracts concluded in the trading sessions of the Centralized market for electricity from renewable energy sources supported by green certificates - CME-RES- GC for the delivery month (p_M):</p> $price = \frac{\sum_{i=1}^n p_{M_i} * q_{M_i}}{\sum_{i=1}^n q_{M_i}}$ <p>This price is determined as the volume weighted average of the prices of all contracts' with delivery in the month M, regardless the contract</p>
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	<p>concluding moment and it is brought up to date as often as a new contract with delivery in that month is traded.</p> <p>For each delivery month, the average price in Euro is calculated as weighted average of the bilateral contracts prices converted to Euros taking into account the exchange rate of the trading day published by the National Bank of Romania (NBR).</p>
<p>Total volume of the contracts with delivery for month M [MWh]</p>	<p>Total volume of the bilateral contracts with delivery for month M traded on Centralized market for electricity from renewable energy sources supported by green certificates - CME-RES- GC:</p> $Volum_{CME-RES-GC} = \sum_{i=1}^n q_{M_i(CME-RES-GC)}$ <p>For the moment this volume is being calculated as sum of the volumes of all contracts with delivery for month M traded on Centralized market for electricity from renewable energy sources supported by green certificates - CME-RES- GC.</p>
<p>Price_{base} [lei/MWh]</p>	<p>The volume weighted average of the prices from the bilateral contracts concluded in the trading sessions that have delivery on the month M for base load electricity on the Centralized market for electricity from renewable energy sources supported by green certificates:</p> $Price_{base} = \frac{\sum_{i=1}^n p_i * q_{i(int.1-24)}}{\sum_{i=1}^n q_{i(int.1-24)}}$ <p>This price is calculated as the volume weighted average of the prices of all base contracts with delivery in a month, regardless the contract concluding moment and it is brought up to date as often as a new contract with delivery in that month is traded.</p> <p>For each delivery month, the average price in Euro is calculated as volume weighted average of the respective bilateral contracts prices converted to Euro taking into account the exchange rate of the trading day published by the National Bank of Romania (NBR).</p>
<p>Price_{peak} [lei/MWh]</p>	<p>The volume weighted average of the prices from the bilateral contracts concluded in the trading sessions for the delivery month for peak load electricity on the Centralized market for electricity from renewable energy sources supported by green:</p> $Price_{peak} = \frac{\sum_{1 \leq i \leq m, 1 \leq j \leq n} p_{iP_j} * q_{iP_j}}{\sum_{1 \leq i \leq m, 1 \leq j \leq n} q_{iP_j}}$

	<p>where P_j represents the delivery profile at peak (Monday to Friday, 06:00 to 22:00 CET) and evening peak (Monday to Sunday, 17:00 to 22:00 CET).</p> <p>This price is calculated as the volume weighted average of the prices of all types of contracts with delivery for the peak load intervals j of the respective month, regardless the contract concluding moment and it is brought up to date as often as a new contract with delivery in that month is traded.</p> <p>For each delivery month, the average price in Euro is calculated as volume weighted average of the respective bilateral contracts prices converted to Euro taking into account the exchange rate of the trading day published by the National Bank of Romania (NBR).</p>
<p>Price _{off-peak} [lei/MWh]</p>	<p>The volume weighted average of the prices from the bilateral contracts concluded in the trading sessions for the delivery month for off-peak load electricity on the Centralized market for electricity from renewable energy sources supported by green certificates</p> $Price_{off-peak} = \frac{\sum_{1 \leq i \leq m, 1 \leq j \leq n} p_{i,j} * q_{i,j}}{\sum_{1 \leq i \leq m, 1 \leq j \leq n} q_{i,j}}$ <p>where O_j represents the delivery off-peak (Monday to Friday, 00:00-06:00 and 22:00-24:00 CET and Saturday to Sunday, 00:00-24:00 CET).</p> <p>This price is calculated as the volume weighted average of the prices of all contracts with delivery for the off-peak load intervals j, respectively 1-6 and 23-24 intervals from Monday to Friday and 1-24 for Saturday and Sunday) of the respective month, regardless the contract concluding moment and it is brought up to date as often as a new contract with delivery in that month is traded.</p> <p>For each delivery month, the average price in Euro is calculated as volume weighted average of the respective bilateral prices contracts converted to Euro taking into account the exchange rate of the trading day published by the National Bank of Romania (NBR).</p>
<p>Price _{other} [lei/MWh]</p>	<p>The volume weighted average of the prices from the bilateral contracts concluded in the trading sessions for the delivery month for another load electricity on the Centralized market for electricity from renewable energy sources supported by green certificates:</p>

$$Price_{other} = \frac{\sum_{\substack{1 \leq i \leq m \\ 1 \leq j \leq n}} p_{iOtherj} * q_{iOtherj}}{\sum_{\substack{1 \leq i \leq m \\ 1 \leq j \leq n}} q_{iOtherj}},$$

where Other j represents the delivery for other contracts.

This price is calculated as the volume weighted average of the prices of all contracts with delivery for other load contracts of the respective month, regardless the contract concluding moment and it is brought up to date as often as a new contract with delivery in that month is traded.

For each delivery month, the average price in Euro is calculated as volume weighted average of the respective bilateral prices contracts converted to Euro taking into account the exchange rate of the trading day published by the National Bank of Romania (NBR).

Green Certificates anonymous Centralised Spot Market (GCACSM)

Monthly volume weighted average price calculated for Green Certificates traded in month M

[lei/GC]




ROPEX_GC_M

The volume weighted average of the prices established on Green Certificates anonymous Centralised Spot Market in the trading sessions of the month M:


$$ROPEX_{GC_M} = \frac{\sum_{i=1}^n p_{Mi} * q_{Mi}}{\sum_{i=1}^n q_{Mi}}$$

	<p>For each month, the volume weighted average price in Euro represents the volume weighted average of the prices established on Green Certificates anonymous Centralised Spot Market in the trading sessions of the month M, converted to Euro taking into account the average exchange rate for December of the year preceding the year for which it was traded in the trading session, published by the National Bank of Romania (NBR).</p> <p>For the month in which the volume weighted average price value by rounding the hundredth order is situated outside the traded limit values approved by ANRE, it will be applied the rounding down or up to the hundredth order taking into account the framing sense of the admissible limits.</p>
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<p>Volume weighted average price calculated for green certificates traded in year Y [lei/GC]</p> <div data-bbox="108 1153 472 1272" style="background-color: #cccccc; padding: 5px;">  ROPEX_GC_Y </div>	<p>The volume weighted average of the prices established on the Green Certificates anonymous Centralised Spot Market in the trading sessions from the year Y:</p> $ROPEX_{GC_Y} = \frac{\sum_{i=1}^n p_{Yi} * q_i}{\sum_{i=1}^n q_{Yi}}$ <p>The volume weighted average price ROPEX_GC_Y converted to Euro represents the volume weighted average of the prices established on the Green Certificates anonymous Centralised Spot Market in the trading sessions during the year Y using the average exchange rate for December of the year preceding the year for which it was traded in the respective trading session, published by National Bank of Romania (NBR).</p>
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Centralised Market for Natural Gas (CMNG)

Day Ahead Market for Natural Gas (DAM-NG)

<p>Price daily [lei/MWh]</p> <div data-bbox="108 1921 387 1993" style="background-color: #cccccc; padding: 5px;">  ROPEX_PZU-GN </div>	<p>This price index represents the daily price set during the trading session on the Day Ahead Market for Natural Gas (DAM-NG):</p> $ROPEX_{PZU} - GN$
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	This price index is associated to each gas day (07:00 – 07:00 – gas day).
The volume weighted average price calculated for contracts with delivery in month M [lei/MWh]	<p>The volume weighted average of the prices set during the trading sessions for month M (p_M) on the Day Ahead Market for Natural Gas (DAM-NG):</p> $p_{ret} = \frac{\sum_{i=1}^n p_{Mi} * q_{Mi}}{\sum_{i=1}^n q_{Mi}}$ <p>This price is calculated as a volume weighted average of all prices set in the trading sessions for month M.</p>

Centralised Market for Natural Gas – trading mechanism PCGN-LN

<p>The volume weighted average price_instrument [lei/MWh]</p> <p><i>(price instrument)</i></p>	<p>The volume weighted average of the prices from the contracts concluded by online auctions and continuous negotiations, with delivery for the base load natural gas (07:00 – 07:00 – gas day), for delivery period (p_i) on Centralised Market for Natural Gas – trading mechanism PCGN-LN:</p> $Price_{instrument} = \frac{\sum_{i=1}^n p_{li} * q_{li}}{\sum_{i=1}^n q_{li}}$ <p>On the Centralised Market for Natural Gas – trading mechanism PCGN-LN, the concluded contracts have the profile (base), delivery period (week, month, quarter, gas semester, year or gas year) specified by the type of the trading instrument.</p> <p>This price is calculated separately for this instrument as the volume weighted average mean of those traded by online auctions and continuous negotiations with delivery for the base load natural gas.</p> <p>The update is done as often as a new contract on this instrument is traded.</p> <p>For each instrument, the average price in Euro is calculated as the average of the prices converted in Euro taking into account the exchange rate of the</p>
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	trading day of each instrument published by the National Bank of Romania (NBR).
The total volume for instrument [MWh]	<p>The total volume for traded instrument on the Centralised Market for Natural Gas – trading mechanism PCGN-LN:</p> $Volum_{PCGN-LN} = \sum_{i=1}^n q_{Ii(PCGN-LN)}$ <p>This volume is being calculated as sum of the volumes of all contracts with delivery for instrument (I) traded on Centralised Market for Natural Gas – trading mechanism PCGN-LN.</p>
Centralised Market for Natural Gas – trading mechanism - PCGN-LP	
Volume weighted average price calculated for contracts with delivery for month M [lei/MWh]	<p>The volume weighted average of the prices from the bilateral contracts concluded by online public auctions for the delivery month M (p_M) on Centralised Market for Natural Gas – trading mechanism - PCGN-LP:</p> $pret = \frac{\sum_{i=1}^n p_{Mi} * q_{Li}}{\sum_{i=1}^n q_{Mi}}$ <p>This price is determined as the volume weighted average of the prices of all contracts with delivery in the month M, regardless the contract concluding moment and it is brought up to date as often as a new contract with delivery in that month is traded.</p>

UPDATES

No.	Summary of the update	The current version	Data
1	Updating the indicators of the Centralized Market with double continuous negotiation for Electricity Bilateral Contracts, according to ANRE Order no. 23/23.01.2018	2	31.01.2018
2	Updating the definition of the gas day, according to ANRE Order no. 161/01.08.2018 on the Network Code for the National Transmission System for Natural Gas	3	10.08.2018

3	Modifying the ROPEX_FM calculation method starting with October 1st, 2018	4	01.10.2018
4	Updating the indices according to ANRE Order no. 50/2019 amending the Annex to the ANRE Order no. 78/2014 for the approval of the Regulation on the modalities of concluding bilateral electricity contracts through an extended auction and through continuous negotiation and through fuel processing contracts	5	21.06.2019
5	Presenting the calculation method for the prices and volumes set on IDM, CMUS, DAM-NG	6	12.11.2019
6	Presenting the calculation method for the prices / volumes set on CMBC-CN, CME-RES- GC, PCGN-LN and clarifications regarding the updated indices.	7	18.03.2020
7	Presenting the calculation method for the prices/ volumes set on IDM for 15 minutes, according to ANRE Order nr.63/2020, presenting the calculation method for the prices / volumes set on CMBC-EA-Flex and CME-RES-GC, updating the ROPEX_FM calculation method starting with March 1st, 2021	8	01.03.2021
8	Updating the indices of the Centralized Market for Electricity Bilateral Contracts - Extended Auctions Mechanism (CMBC – EA) operational until May 8, 2020, by eliminating the contracts concluded through the CMBC-EA mechanism and terminated / ceased with the agreement of the parties and notified to OPCOM, according to the ANRE Order no. 50/2019 and the ANRE document no. 19941/03.02.2020.	9	14.05.2021