Program 1 Options on BRENT oil futures for early trading

I.   This option applies to agreements entered into in the form of the bilateral derivatives price support agreement

1. The table below shows instruments and their designations for which the Market Maker must maintain quotes during the trading sessions on the Moscow Exchange Derivatives Market in accordance with this Program:

Instrument designation	Instrument name
k=1	Futures-style option on Brent oil futures

2. Terms of Market Maker obligations

2.1. The following definitions are used to set the Market Maker obligations parameters:

Spread	The maximum difference between the best bid and the best ask in the Instrument entered by the Market Maker. The spread is determined by the measure used to determine the Instrument price under the Instrument specification, and calculated as per the formula specified in paragraph 2.2.1 below.
Best bid	The price of an order to buy entered by the Market Maker with respect to the Instrument, which volume (considering the volume of all Market Maker's orders to buy at the same price or higher) is no less than the minimum required order volume.
Best bid	The price of an order to sell entered by the Market Maker with respect to the Instrument, which volume (considering the volume of all orders to sell of the Market Maker at the same price or lower) is no less than the minimum required order volume.
Quantum	The period of the Trading Session during which the Market Maker must enter orders. Quanta are designated as $q= 0, 1, \ldots$ (where 0, 1, ... – the Quantum sequence number). - Quant sequence number). The Quantum duration (Ts) is measured in seconds.
Total length of the Quantum (Topt)	The value determined as per the formula: $Topt=Ts*(Kstr\_call + Kstr\_put)$, where: Kstr_call- the number of strikes per Call Instrument per Quantum; Kstr_put- the number of strikes per a Put Instrument per Quantum.
Quote maintenance period (Tmm)	The value in sec determined within a Quantum as the total time across all strikes during which the Market Maker maintains two-sided quotes in the Instrument subject to expiry.
Nearest contract month for the Instrument	The contract month of the Instrument that is as close as possible to the Trading Day on which quotes are maintained for such Instrument. Such contract month is designated as i=n (where n= 1, 2, … – the sequence number of the expiration date of the Instrument).
Next contract month for the Instrument	The contract month determined as i= n+1.
Reporting period	A calendar month.

Terms that are not specified in this Program are used in the values, the land of internal documents of the Public Joint-Stock Company Moscow Exchange MICEX-RTS (hereinafter - the Exchange) and the National Settlement Depository, and in the absence of such terms - in accordance with the current legislation of the Russian Federation.

2.2. Market Maker obligations parameters

2.2.1. For the purpose of the Market Maker's obligations, the Spread is determined as per the following formula with the result rounded to the minimum price fluctuation of the Instrument as per the mathematical rounding rules:

$$\max \left\{ a \times \left| Premium(X_{i-\Delta}) - Premium(X_{i+\Delta}) \right| \times \sqrt{\frac{T_{exp}-T}{365}}; b \right\}, \text{ where}$$

Coefficients a and b	Constants specified for the Instrument in paragraph 2.2.2 of this Program.
Option Strike (X)	The Instrument strike, where Δ – the shift from the ith strike, i – the sequence number of the strike.
Premium (X_i)	The settlement price of the Instrument determined by the end of the evening clearing session (main clearing) for the ith strike.
Time to expiry ($T_{exp} - T$)	The number of calendar days to expiry of the Instrument, where T_{exp} – the expiration date of the Instrument, T – the date the Spread is calculated.

2.2.2. The Market Maker shall perform its obligations only with regard to contract months specified in Tables 1-2 below:

Table No. 1

				Terms for maintaining two-sided quotes for the nearest futures-style options on the Brent oil futures k=1 during Quantum q=0			
No.	Instrument type (type)	Instrument strikes (str)	Minimum order size (In contracts)	Spread ($Spread_{MM}$)	Minimum quote maintenance period as % of the length of Quantum (Ts)	Minimum Total quote maintenance period (Tmm) as % of the Total length of Quantum (Topt)	Start of Quantum End of Quantum (q=0)
1		CS	100	$\max \left\{ 2 \times \left| Premium(X_{i-1}) - Premium(X_{i+1}) \right| \times \sqrt{\frac{T_{exp}-T}{365}}; 0.12 \right\}$	55%		
2		CS+1	100	$\max \left\{ 2 \times \left| Premium(X_{i-1}) - Premium(X_{i+1}) \right| \times \sqrt{\frac{T_{exp}-T}{365}}; 0.12 \right\}$	55%		
3	CALL	CS+2	100	$\max \left\{ 2 \times \left| Premium(X_{i-1}) - Premium(X_{i+1}) \right| \times \sqrt{\frac{T_{exp}-T}{365}}; 0.12 \right\}$	55%	60%	07:00 MCK (UTC+3) – 10:00 MCK (UTC+3)
4		CS+3	100	$\max \left\{ 2 \times \left| Premium(X_{i-1}) - Premium(X_{i+1}) \right| \times \sqrt{\frac{T_{exp}-T}{365}}; 0.12 \right\}$	55%		
5		CS+4	100	$\max \left\{ 2 \times \left| Premium(X_{i-1}) - Premium(X_{i+1}) \right| \times \sqrt{\frac{T_{exp}-T}{365}}; 0.10 \right\}$	55%		

6		CS	100	$\max\{2 \times \lvert Premium(X_{i-1}) - Premium(X_{i+1})\rvert \times \sqrt{\dfrac{T_{exp}-T}{365}}; 0.12\}$	55%		
7		CS-1	100	$\max\{2 \times \lvert Premium(X_{i-1}) - Premium(X_{i+1})\rvert \times \sqrt{\dfrac{T_{exp}-T}{365}}; 0.12\}$	55%		
8	PUT	CS-2	100	$\max\{2 \times \lvert Premium(X_{i-1}) - Premium(X_{i+1})\rvert \times \sqrt{\dfrac{T_{exp}-T}{365}}; 0.12\}$	55%		
9		CS-3	100	$\max\{2 \times \lvert Premium(X_{i-1}) - Premium(X_{i+1})\rvert \times \sqrt{\dfrac{T_{exp}-T}{365}}; 0.12\}$	55%		
10		CS-4	100	$\max\{2 \times \lvert Premium(X_{i-1}) - Premium(X_{i+1})\rvert \times \sqrt{\dfrac{T_{exp}-T}{365}}; 0.10\}$	55%		

2.2.3. The nearest and next expiration terms of the Instrument are the nearest and next expiration dates of the Instrument, respectively, which are every Thursday of a calendar month, except the 3rd Thursday of the respective month.

2.2.4. The obligation of the Market Maker to maintain the price of all Instruments with the nearest expiration date (i=n) in the current Reporting Period terminates at the end of the Trading Day preceding the last trade day of the respective Instruments. The obligation of the Market Maker to maintain the price of all Instruments with the next expiration date (i=n+1) in the current Reporting Period arises from the last Trading Day for the respective Instruments with the nearest expiration date.

2.3. During each qth Quantum of the Trading day of the Reporting Period, the Market Maker is allowed to fail to meet obligations with respect to the kth Instrument as specified in paragraph 2.2 above, maximum 7 (seven) times. If the Market Maker has failed to comply with this condition while providing services for the kth Instrument during the qth Quantum, the services are considered as having not been provided in that Quantum for the respective Instrument.

3. Compensation for the Market Maker

3.1. The amount of compensation that the Market Maker receives for fulfilling its obligations during the Reporting Period on terms set out in paragraphs1-2 above, is the sum of compensation values determined in accordance with formulas 1-2 below with regard to every group of the clearing registers section codes with which the Market Maker performs under this Program on the basis of the market making agreement with the Exchange:

Formula 1:

$$0.25 \times \sum_{k,j,q}\left\{Fee\,_{active}^{k,j,q} \times \left(I_q\left(Tmm_{j,q}^k ; Topt_{j,q}^k\right) + 1\right) \times L_q\left(Tmst_{j,q}^k ; Ts_{j,q}^k\right)\right\} +$$

$$+\, 0.50 \times \sum_{k,j,q}\left\{Fee\,_{passive}^{k,j,q} \times \left(I_q\left(Tmm_{j,q}^k ; Topt_{j,q}^k\right) + 1\right) \times L_q\left(Tmst_{j,q}^k ; Ts_{j,q}^k\right)\right\}$$

, where

- I_q takes the following values:

$$I_q(Tmm_{j,q}^k ; Topt_{j,q}^k) = \begin{cases} 1,\ if\ \dfrac{Tmm_{j,q}^k}{Topt_{j,q}^k} \geq 85\% \\[2em] \left(\dfrac{\dfrac{Tmm_{j,q}^k}{Topt_{j,q}^k} - 60\%}{(85\% - 60\%)}\right)^5,\ if\ 60\% \leq \dfrac{Tmm_{j,q}^k}{Topt_{j,q}^k} < 85\% \\[2em] -1,\ otherwise \end{cases}$$

- $Tmm_{j,q}^k$ – the total length of the quote maintenance period during the qth Quantum on the jth Trading Day for the kth Instrument (in sec);

- $Topt_{j,q}^k$ – the total length of the qth Quantum on the jth Trading Day for the kth Instrument (in sec);

- $Tmst_{j,q}^k$ – the minimum actual length of the quote maintenance period out of all actual lengths of the quote maintenance period for each strike of the kth Instrument specified in paragraph 2.2 above, during the qth Quantum on the jth Trading Day (in sec);

- $Ts_{j,q}^k$ – the length of the qth Quantum on the jth Trading Day for the kth Instrument (in sec);

- $Fee_{active}^{k,j,q}$ – the sum of exchange and clearing fees charged to the Market Maker for trades executed in the kth Instrument during the qth Quantum on the jth Trading Day with the contract month and strikes specified in paragraph 2.2 above, which trades were executed based on order book (exclusive of order book indicative orders), entered by the Market Maker with the clearing registers section codes which are used to perform the Market Maker obligations under this Program based on its market making agreement with the Exchange, provided that these orders are registered in the Order Register under numbers which are greater than numbers of the respective counter orders for the corresponding Paired Trades [1];

- $Fee_{passive}^{k,j,q}$ – the sum of exchange and clearing fees charged to the Market Maker for trades executed in the kth Instrument during the qth Quantum on the jth Trading Day with the contract month and strikes specified in paragraph 2.2 above, which trades were executed based on order book (exclusive of order book indicative orders), entered by the Market Maker with the clearing registers section codes which are used to perform the Market Maker obligations under this Program based on its market making agreement with the Exchange, provided that these orders are registered in the Order Register under numbers which are less than numbers of the respective counter orders for the corresponding Paired Trades ;

- $k = 1, 2, \ldots$ – the sequence number of the respective Instrument specified in paragraph 1 of this Program;

- $j = 1, 2, \ldots$ – the sequence number of the Trading Day in the respective month;

- $q = 0, 1, \ldots$ – the sequence number of the Quantum specified in paragraph 2. 2 of this Program;

- $L_q\left(Tmst_{j,q}^k ; Ts_{j,q}^k\right) = \begin{cases} 1, if \ \frac{Tmst_{j,q}^k}{Ts_{j,q}^k} \geq 55\% \\ 0, otherwise \end{cases}$.

Formula 1:

$$\frac{\sum_{k,j,q}\left\{\left[\max\left(0; I_q\left(Tmm_{j,q}^k ; Topt_{j,q}^k\right) \times (S_2 - S_1) + S_1\right)\right] \times L_q\left(Tmst_{j,q}^k ; Ts_{j,q}^k\right)\right\}}{\sum_{k,j,q} K_{j,q}^k}$$

, where

- S_1 – RUB 50,000 (fifty thousand);

- S_2 – RUB 100,000 (one hundred and fifty thousand);

- $K_{j,q}^k$ – the number of expiration dates for the kth Instrument for which the Market Maker must meet the quote maintenance conditions specified in paragraph 2.2 of this Program, during the qth Quantum on the jth Trading Day.

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[1] This term is defined as per the CCP NCC Clearing Rules regulating clearing services on the Moscow Exchange Derivatives Market.

II. This option applies to agreements entered into in the form of the trilateral derivatives price support agreement

1. The table below shows instruments and their designations for which the Contractors must maintain quotes during the trading sessions on the Moscow Exchange Derivatives Market in accordance with this Program:

Instrument designation	Instrument name
k=1	Futures-style option on Brent oil futures

2. Conditions for the obligations of the Contractors to be fulfilled.

2.1. The following definitions are used to set the Contractors' obligations parameters:

Spread	The maximum difference between the best bid and the best ask in the Instrument entered by Contractor 1. The spread is determined by the measure used to determine the Instrument price under the Instrument specification, and calculated as per the formula specified in paragraph 2.2.1 below.
Best bid	The price of an order to buy entered by Contractor 1 with respect to the Instrument, which size (considering sizes of all Contractor 1's orders to buy at the same price or higher) is no less than the minimum order size.
Best bid	The price of an order to sell entered by Contractor 1 with respect to the Instrument, which size (considering sizes of all Contractor 1's orders to sell at the same price or lower) is no less than the minimum order size.
Quantum	The period of the Trading Session during which Contractor 1 must enter orders. Quanta are designated as $q= 0, 1, …$ (where $0, 1, ...$ – the Quantum sequence number). - Quant sequence number). The Quantum duration (Ts) is measured in seconds.
Total length of the Quantum ($Topt$)	The value determined as per the formula: $Topt=Ts*(Kstr\_call + Kstr\_put)$, where: $Kstr\_call$- the number of strikes per Call Instrument per Quantum; $Kstr\_put$- the number of strikes per a Put Instrument per Quantum.
Totoal quote maintenance period (Tmm)	The value in sec determined within a Quantum as the total time across all strikes during which the Contractor 1 maintains two-sided quotes in the Instrument subject to expiry.
Nearest contract month for the Instrument	The contract month of the Instrument that is as close as possible to the Trading Day on which quotes are maintained for such Instrument. Such contract month is designated as $i=n$ (where $n= 1, 2, …$ – the sequence number of the expiration date of the Instrument).
Next contract month for the Instrument	The contract month determined as $i= n+1$
Reporting period	A calendar month.

Terms that are not specified in this Program are used in the values, the land of internal documents of the Public Joint-Stock Company Moscow Exchange MICEX-RTS (hereinafter - the Exchange) and the National Settlement Depository, and in the absence of such terms - in accordance with the current legislation of the Russian Federation.

2.2. Obligations parameters for the Contractors.

2.2.1. For the purpose of the Contractor 1's obligations, the Spread is determined as per the following formula with the result rounded to the minimum price fluctuation of the Instrument as per the mathematical rounding rules:

$$\max\left\{a \times \left|Premium(X_{i-\Delta}) - Premium(X_{i+\Delta})\right| \times \sqrt{\frac{T_{exp}-T}{365}}; b\right\}, \text{ where}$$

Coefficients a and b	Constants specified for the Instrument in paragraph 2.2.2 of this Program.
Option Strike (X)	The Instrument strike, where Δ – the shift from the ith strike, i – the sequence number of the strike.
Premium (X_i)	The settlement price of the Instrument determined by the end of the evening clearing session (main clearing) for the ith strike.
Time to expiry ($T_{exp} - T$)	The number of calendar days to expiry of the Instrument, where T_{exp} – the expiration date of the Instrument, T – the date the Spread is calculated.

2.2.2. The Contractors shall perform their obligations only with regard to contract months specified in Tables 1 below:

Table No. 1

No.	Instrument type (type)	Instrument strikes (str)	Minimum order size (In contracts)	Spread ($Spread_{MM}$)	Minimum quote maintenance period as % of the length of Quantum (Ts)	Minimum Total quote maintenance period (Tmm) as % of the Total length of Quantum (Topt)	Start of Quantum / End of Quantum (q=0)
1		CS	100	$\max\{2 \times |Premium(X_{i-1}) - Premium(X_{i+1})| \times \sqrt{\frac{T_{exp}-T}{365}}; 0.12\}$	55%		
2		CS+1	100	$\max\{2 \times |Premium(X_{i-1}) - Premium(X_{i+1})| \times \sqrt{\frac{T_{exp}-T}{365}}; 0.12\}$	55%		
3	CALL	CS+2	100	$\max\{2 \times |Premium(X_{i-1}) - Premium(X_{i+1})| \times \sqrt{\frac{T_{exp}-T}{365}}; 0.12\}$	55%	60%	07:00 MCK (UTC+3) – 10:00 MCK (UTC+3)
4		CS+3	100	$\max\{2 \times |Premium(X_{i-1}) - Premium(X_{i+1})| \times \sqrt{\frac{T_{exp}-T}{365}}; 0.12\}$	55%		
5		CS+4	100	$\max\{2 \times |Premium(X_{i-1}) - Premium(X_{i+1})| \times \sqrt{\frac{T_{exp}-T}{365}}; 0.10\}$	55%		
6	PUT	CS	100	$\max\{2 \times |Premium(X_{i-1}) - Premium(X_{i+1})| \times \sqrt{\frac{T_{exp}-T}{365}}; 0.12\}$	55%		
7		CS-1	100	$\max\{2 \times |Premium(X_{i-1}) - Premium(X_{i+1})| \times \sqrt{\frac{T_{exp}-T}{365}}; 0.12\}$	55%		

The header of Table No. 1 reads: Terms for maintaining two-sided quotes for the nearest futures-style options on the Brent oil futures k=1 during Quantum q=0

8		CS-2	100	$\max\{2 \times \lvert Premium(X_{i-1}) - Premium(X_{i+1})\rvert \times \sqrt{\dfrac{T_{exp}-T}{365}}; 0.12\}$	55%		
9		CS-3	100	$\max\{2 \times \lvert Premium(X_{i-1}) - Premium(X_{i+1})\rvert \times \sqrt{\dfrac{T_{exp}-T}{365}}; 0.12\}$	55%		
10		CS-4	100	$\max\{2 \times \lvert Premium(X_{i-1}) - Premium(X_{i+1})\rvert \times \sqrt{\dfrac{T_{exp}-T}{365}}; 0.10\}$	55%		

2.2.3. The nearest and next expiration terms of the Instrument are the nearest and next expiration dates of the Instrument, respectively, which are every Thursday of a calendar month, except the 3rd Thursday of the respective month.

2.2.4. The obligation of the Contractors to maintain the price of all Instruments with the nearest expiration (i=n) in the current Reporting Period terminates at the end of the Trading Day preceding the last trade day of the respective Instruments. The obligation of the Contractors to maintain the price of all Instruments with the next expiration date (i=n+1) in the current Reporting Period arises from the last Trading Day for the respective Instruments with the nearest expiration date.

2.3. During each qth Quantum of each Trading day of the Reporting Period, the Contractors are allowed to fail to meet obligations with respect to the kth Instrument as specified in paragraph 2.2 above, maximum 7 (seven) times. If the Contractors have failed to comply with this condition while providing services for the kth Instrument during the qth Quantum, the services are considered as having not been provided in that Quantum for the respective Instrument.

3. Compensation for the Contractors

3.1. The amount of compensation that the Contractors receive for fulfilling their obligations during the Reporting Period on terms set out in paragraphs 1-2 above subject to paragraph 2.3, is the sum of compensation values determined in accordance with formulas 1-2 below with regard to each group of the clearing registers section codes with which the Contractors perform under this Program on the basis of the market making agreement with the Exchange:

Formula 1:

$$0.25 \times \sum_{k,j,q}\{Fee\ _{active}^{k,j,q} \times (I_q(Tmm_{j,q}^k ; Topt_{j,q}^k) + 1) \times L_q(Tmst_{j,q}^k ; Ts_{j,q}^k)\} +$$
$$+ 0.50 \times \sum_{k,j,q}\{Fee\ _{passive}^{k,j,q} \times (I_q(Tmm_{j,q}^k ; Topt_{j,q}^k) + 1) \times L_q(Tmst_{j,q}^k ; Ts_{j,q}^k)\}, \text{ where}$$

- I_q takes the following values:

$$I_q(Tmm_{j,q}^k ; Topt_{j,q}^k) = \begin{cases} 1, \text{ if } \dfrac{Tmm_{j,q}^k}{Topt_{j,q}^k} \geq 85\% \\ \left(\dfrac{\left(\dfrac{Tmm_{j,q}^k}{Topt_{j,q}^k} - 60\%\right)}{(85\% - 60\%)}\right)^5, \text{ if } 60\% \leq \dfrac{Tmm_{j,q}^k}{Topt_{j,q}^k} < 85\% \\ -1, \text{ otherwise} \end{cases}$$

- $Tmm_{j,q}^k$ – the total length of the quote maintenance period of Contractor 1 during the qth Quantum on the jth Trading Day for the kth Instrument (in sec);

- $Topt_{j,q}^k$ – the total length of the qth Quantum on the jth Trading Day for the kth Instrument (in sec);

- $Tmst_{j,q}^k$ – the minimum actual length of the quote maintenance period out of all actual lengths of the quote maintenance period for each strike of the kth Instrument specified in paragraph 2.2 above, during the qth Quantum on the jth Trading Day (in sec);

- $Ts_{j,q}^{k}$ – the length of the qth Quantum on the jth Trading Day for the kth Instrument (in sec);

- $Fee_{active}^{k,j,q}$ – the sum of exchange and clearing fees charged to the Contractor 1 for trades executed in the kth Instrument during the qth Quantum on the jth Trading Day with the contract month and strikes specified in paragraph 2.2 above, which trades were executed based on order book (exclusive of order book indicative orders), entered by the Contractor 1 as instructed by Contractor 2 with the clearing registers section codes which are used to perform the Contractors obligations under this Program based on its market making agreement with the Exchange, provided that these orders are registered in the Order Register under numbers which are greater than numbers of the respective counter orders for the corresponding Paired Trades [2];

- $Fee_{passive}^{k,j,q}$ – the sum of exchange and clearing fees charged to the Contrator 1 for trades executed in the kth Instrument during the qth Quantum on the jth Trading Day with the contract month and strikes specified in paragraph 2.2 above, which trades were executed based on order book (exclusive of order book indicative orders), entered by the Contractor 1 as instructed by Contractor 2 with the clearing registers section codes which are used to perform the Contractors obligations under this Program based on its market making agreement with the Exchange, provided that these orders are registered in the Order Register under numbers which are less than numbers of the respective counter orders for the corresponding Paired Trades ;

- $k = 1, 2, \ldots$ – the sequence number of the respective Instrument specified in paragraph 1 of this Program;

- $j = 1, 2, \ldots$ – the sequence number of the Trading Day in the respective month;

- $q = 0, 1, \ldots$ – the sequence number of the Quantum specified in paragraph 2. 2 of this Program;

- $L_q\left(Tmst_{j,q}^{k}; Ts_{j,q}^{k}\right) = \begin{cases} 1, if\ \dfrac{Tmst_{j,q}^{k}}{Ts_{j,q}^{k}} \geq 55\% \\ 0, otherwise \end{cases}$.

Formula 1:

$$\frac{\sum_{k,j,q}\left\{\left[\max\left(0; I_q\left(Tmm_{j,q}^{k}; Topt_{j,q}^{k}\right) \times (S_2 - S_1) + S_1\right)\right] \times L_q\left(Tmst_{j,q}^{k}; Ts_{j,q}^{k}\right)\right\}}{\sum_{k,j,q} K_{j,q}^{k}}$$

, where

- S_1 – RUB 50,000 (fifty thousand);

- S_2 – RUB 100,000 (one hundred and fifty thousand);

- $K_{j,q}^{k}$ – the number of expiration dates for the kth Instrument for which the Contractor 1 must meet the quote maintenance conditions specified in paragraph 2.2 of this Program, during the qth Quantum on the jth Trading Day.

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[2] This term is defined as per the CCP NCC Clearing Rules regulating clearing services on the Moscow Exchange Derivatives Market.