Client Alert

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Direct electricity trading mechanism for Vietnam promulgated

On 3 July 2024, Decree No. 80/2024 of the Government of Vietnam (**"Decree 80"**) laying down regulations on direct electricity trading mechanism between renewable energy generators and large electricity users was initialed, effective. Notable points are below:

Renewable Energy (RE) Generation Units

Solar, wind, small hydro, biomass, geothermal, tidal… and rooftop solar systems with electricity operation license (EOL) or exempted from EOL.

Modes

1. *Private line sale and purchase of power*

   (a) RE generation units;
   (b) Large electricity consumers.
   - Power purchase agreement (PPA) price to be mutually agreed among the generator and the consumer. Except where the generation unit performs retail as well, combining power purchase from the national grid and on-site for retail [here, pricing shall be as per the Ministry of Industry and Trade (MoIT) release].

2. *Sale and purchase of power through the National grid*

   (a) Grid connected solar and wind generation units with a capacity of 10MW and above, participating in competitive wholesale electricity market (Trading cycle – 30 minutes (each, per trading day). Transmission loss is recognized and the payment cycle is 1 month (on the electricity market), from 1st day of each month.
   (b) Industrial consumers buying power from Vietnam Electricity (EVN)/retailers with connection voltage level being 22kV or above, with an output of 200,000 kWh/month (average on preceding 12 months);
   (c) Power retailers in zones, clusters authorized by large consumers for production purposes, buying electricity from EVN through a forward contract with the RE generation units.

Payment Mechanisms

RE generator selling electricity on spot electricity market

Formula:

$$R_G = \sum_{i=1}^{I} Q_{mq(i)} \times \mathrm{FMP}_{(i)}$$

In which:

1. R_G: the total amount of electricity payable within payment cycle (VND)

2. $Q_{mq(i)}$: metered electricity output of the RE Generation Unit in transaction cycle i (kWh)

3. i: transaction cycle No. I within payment cycle.

4. I: total number of transaction cycle within payment cycle.

5. $\mathrm{FMP}_{(i)}$: spot electricity market price within transaction cycle i (kWh).

Appendix – I: Model PPA on spot market between RE power generation unit and EVN.

Large electricity users or electricity retailers in authorized zones, clusters and EVN

1. Total electricity purchase costs of large electricity users or electricity retailers in the models of zones and clusters authorized by EVN in each payment period of year N according to the signed PPA between the two parties is determined according to the following formula:

$$C_{KH} = C_{TTD} + C_{BL}$$

In which:

(a) C_{KH}: Total electricity purchase costs of large electricity users or electricity retailers in models of zones and clusters authorized by EVN (VND)

(b) C_{TTD}: Electricity purchase costs of large electricity users or electricity retailers in models of zones and clusters authorized by EVN in the electricity market (VND), are determined according to the following formula:

$$C_{TTD} = C_{DN} + C_{DPPA} + C_{CL}$$

In which:

C_{DN}: Electricity costs paid according to the electricity market (VND), determined according to the provisions of Clause 2 below;

C_{DPPA}: Cost of using electricity system services (VND), determined according to the provisions of Clause 4 below;

C_{CL}: Costs for clearing differences, determined in Appendix IV of Decree 80 (VND)

c) C_{BL}: electricity purchase costs in each transaction cycle according to the retail electricity price specified in Clause 3, Article 14 of Decree 80 (VND), specifically:

$$C_{BL} = \sum_{i=1}^{I} (Q_{KH(i)} - Q_{KHhc(i)}) \times P_{BL(i)}$$

In which:

$P_{BL(i)}$: Current retail electricity price in transaction cycle i issued by the MoIT (VND/kWh);

$Q_{KH(i)}$: Actual consumption output of large electricity customers or electricity purchasing output of electricity retailers in authorized models of zones and clusters in cycle i (kWh);

$Q_{KHhc(i)}$: Adjusted electricity consumption of large electricity customers or electricity purchasing output of electricity retailers in authorized zone and cluster models in transaction cycle i (kWh), is determined as follows:

$$Q_{KHhc(i)} = MIN (Q_{KH (i)}; Q_{m(i)})$$

In which:

$Q_{m(i)}$ is the actual output of the RE generating unit converted according to the loss coefficient in Clause 3 below. In case a large electricity customer or electricity retailer in an authorized zone or cluster model has a forward contract with many RE generators or a RE generator has a valid contract. Term contracts with many large electricity customers or electricity retailers in authorized zones and clusters, the actual output of the RE generation unit is determined according to the agreed principles in accordance with Article 26.1đ of Decree 80.

2. Components of electricity costs according to electricity market prices in each payment period of year N ($C_{ĐN}$) are determined according to the following formula:

$$C_{ĐN} = \sum_{i=1}^{I} Q_{KHhc\,(i)} \times CFMP_{(i)} \times K_{PP}$$

In which:

a. i: i^{th} transaction cycle in the payment period (corresponding to the transaction cycle of the spot electricity market);

b. I: Total number of transaction cycles of the payment period;

c. $Q_{KHhc(i)}$: Adjusted electricity consumption of large electricity customers or electricity purchasing output of electricity retailers in authorized zone and cluster models in transaction cycle i (kWh), is determined according to the provisions of Clause 1 above;

d. $CFMP_{(i)}$: Electricity purchase price EVN on the spot electricity market in transaction cycle i (VND/kWh), determined according to the Regulations on operating the competitive wholesale electricity market issued by the MoIT;

đ) K_{PP}: Conversion coefficient according to power loss on the distribution grid of the EVN, determined according to the provisions of Clause 3 below.

3. Method for determining the conversion factor based on power loss on the distribution grid (K_{PP}) applied to the EVN in year N:

a. In case of large electricity customers or electricity retailers in zones and clusters authorized to buy electricity at voltage levels from 22kV to less than 110kV, K_{PP} is determined according to the following formula:

$$K_{PP} = \frac{1}{1 - L_{HV}} \times \frac{1}{1 - L_{MV}}$$

In which:

L_{HV} (%): Rate of power loss on the distribution grid at voltage levels of 110kV or higher in year N of EVN;

L_{MV} (%): Rate of power loss on the distribution grid from 22kV to under 110kV in year N of EVN.

b. In case of large electricity customers or electricity retailers in zones and clusters authorized to buy electricity at voltage levels of 110kV or higher, K_{PP} is determined according to the following formula:

$$K_{PP} = \frac{1}{1 - L_{HV}}$$

In which:

L_{HV} (%): Rate of power loss on the distribution grid at voltage levels of 110kV or higher in year N of EVN.

4. The cost of using electricity system services (C_{DPPA}) is determined according to the following formula:

$$C_{DPPA} = \sum_{i=1}^{I} Q_{KHhc(i)} \times C_{DPPAđv}$$

In which:

a. i: i^{th} transaction cycle in the payment cycle (corresponding to the transaction cycle of the spot electricity market);

b. I: Total number of transaction cycles of the payment cycle;

c. $Q_{KHhc(i)}$: Adjusted electricity consumption of large electricity customers or electricity purchasing output of electricity retailers in authorized zone and cluster models with transaction cycle i (kWh);

d. $C_{DPPAđv}$: Cost of using electricity system services calculated for one unit of electricity in year N (VND/kWh), including costs of using the following services: electricity transmission, distribution – retail of electricity, power system dispatching, operating electricity market transactions, operating – managing of the industry and is determined by the total cost and profit norms of the stages of electricity transmission, distribution – retail of electricity, power system dispatching and managing electricity market transactions, operating – managing of the industry divided by the total domestic commercial electricity output of the Power Corporations with calculated data taken from the corresponding data in the annual average retail electricity price plan of year N developed by EVN and has been inspected, reviewed and commented by competent authorities according to the regulations in the Mechanism for adjusting the average retail electricity price issued by the Prime Minister.

In case there is no said annual average retail electricity price plan for year N developed by the EVN, the data used to calculate $C_{DPPAđv}$ are data based on the results of checking the cost of electricity production and business in year N-2 with the norm profits of each stage. Electricity transmission, distribution - retailing of electricity, dispatching and management of electricity market transactions, auxiliary services of electricity systems, operation - management of the industry are determined by equity multiplied by rate of return on equity at the current average retail electricity price plan in year N-2. Large electricity users or electricity retailers in authorized zones and clusters and EVN settle costs of using electricity system services for payment periods made since the beginning of the year. Until before the payment period, there is $C_{DPPAđv}$ data calculated according to the annual average retail electricity price plan of year N.

Appendix – II: Model PPA between large electricity users-retailers in authorised zones and clusters and EVN.

Appendix – IV: Contract for differences

Large electricity users or electricity retailers in authorized zones, clusters and RE generators

1. Contract output and contract price are agreed upon by both parties for transaction cycles in the spot electricity market.

2. The reference price is equal to the spot electricity market price calculated and announced by the electricity system and electricity market operating unit according to the regulations on operating the competitive wholesale electricity market issued by the MoIT.

3. Large electricity users or electricity retailers in authorized zones, clusters and RE generators calculate and pay for contracted electricity output according to forward contracts equal to the difference between the price committed in the contract and the spot electricity market price (reference price), specifically as follows:

$$R_C = \sum_{i=1}^{I} [P_{c(i)} - FMP_{(i)}] \times Q_{c(i)}$$

In which:

a) R_C: Revenue of the RE generator under the Forward Contract in the payment cycle (VND);

b) i: transaction cycle No. I within payment cycle;

c) I: total number of transaction cycle within payment cycle;

d) $P_{c(i)}$: Committed price in Forward Contract (VND/kWh);

dd) $FMP_{(i)}$: spot electricity market price in transaction cycle i (VND/kWH);

e) $Q_{c(i)}$: Committed electricity output in forward contract in transaction cycle i (kWh).

Appendix – III: Model PPA between RE generators and large electricity users (or retailers in authorized zones and clusters).

*(**Note**: This client alert is issued for information purposes only. For further information on Decree 80 and Model PPA(s) etc., please connect.)*

FOR MORE INFORMATION PLEASE CONTACT

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