MINISTRY OF INDUSTRY AND TRADE ----------	SOCIALIST REPUBLIC OF VIETNAM Independent - Freedom - Happiness ----------
No. 51/2015/TT-BCT	*Hanoi, December 29, 2015*

CIRCULAR

ON AMENDMENTS TO CERTAIN ARTICLES OF THE CIRCULAR NO. 30/2014/TT-BCT DATED OCTOBER 02, 2014 BY MINISTER OF INDUSTRY AND TRADE ON OPERATION OF THE COMPETITIVE ELECTRICITY GENERATION MARKET AND THE CIRCULAR NO. 56/2014/TT-BCT DATED DECEMBER 29, 2014 BY MINISTER OF INDUSTRY AND TRADE ON METHOD FOR DETERMINATION OF ELECTRICITY GENERATION COSTS AND SEQUENCE OF INSPECTION OF POWER PURCHASE AGREEMENTS

Pursuant to the Government's Decree No. 95/2012/ND-CP dated November 12, 2012 on functions, missions, authority and organizational structure of the Ministry of Industry and Trade;

Pursuant to the Law on Electricity dated December 03, 2004 and Law on amendments to the Electricity Law dated November 20, 2012;

Pursuant to the Prime Minister's Decision No. 63/2013/QD-TTg dated November 08, 2013 on schedule, conditions and structure of the electricity sector for formulation and development of electricity market levels in Vietnam;

At the request of the Head of the Electricity Regulatory Authority.

Minister of Industry and Trade issues the Circular on amendments to certain articles of the Circular No. 30/2014/TT-BCT dated October 02, 2014 by Minister of Industry and Trade on operation of the competitive electricity generation market and the Circular No. 56/2014/TT-BCT dated December 29, 2014 by Minister of Industry and Trade on method for determination of electricity generation costs and sequence of inspection of power purchase agreements.

Article 1. The following amendments are adopted to certain articles of the Circular the Circular No. 30/2014/TT-BCT dated October 02, 2014 by Minister of Industry and Trade on operation of the competitive electricity generation market:

1. Section 3 of Article 4 is amended and Section 3a is added to Section 3 of Article 4: "3. Power plants that do not engage in the electricity market include:

a) BOT power plants (having signed a principle contract or having completed negotiations thereof);

b) Non-hydro renewable power plants;

c) Wind turbine power plants bound to maximize their use of fuel gas(es) for assurance of national interests;

d) Power plants that belong to an industrial zone, sell only part(s) of their generation output to the national electricity system and have entered a power purchase agreement signed before and remaining effective after January 01, 2016."

3a. BOT power plants or industrial zones' power plants selling partial generation output to the national electricity system, which are not bound by Point a or Point d, respectively, in Section 3 of this Article, shall be responsible for preparing facilities as defined in Section 5 of this Article and participate in the electricity market as per Section 1 of this Article."

2. Section 3 of Article 5 is amended and Section 1a is added to Section 1 of Article 5:

"1a. Electric power producers shall be responsible for submitting to the Electricity Regulatory Authority an application for participation in the electricity market for each power plant in one of these manners:

a) Register online at:

http://thamgiathitruongdien.dvctt.gov.vn;

b) Send the application by post;

c) Submit the application directly at the office of the Electricity Regulatory Authority.

3. Quantity of applications

a) 01 set for online registration;

b) 02 sets for submission of documents by post or directly at the office of the Electricity Regulatory Authority."

3. Section 2 and Section 3 of Article 6 are amended and Section 1 of Article 6 is rescinded:

"2. Electricity Regulatory Authority takes in an application, verifies its adequacy and provides guidelines for completion of such application promptly upon direct submission or in 02 working days after the receipt of the application sent by post or online.

3. In 02 working days after the receipt of the complete application, the Electricity Regulatory Authority shall send 01 set (in physical or electronic form) to the Operator of electricity systems and electricity markets."

4. Point b, Section 5 of Article 6 is amended:

"b) If the application is invalid:

- Electricity Regulatory Authority shall notify the electric power producer in writing, by email or by post, of invalid documents and request explanations or supplementations;

- In 05 working days upon its receipt of such request, the electric power producer shall send written explanations and supplementary documents to the Electricity Regulatory Authority by hand, by post or online;

- In 03 working days upon the receipt of the complete application of the electric power producer, the Electricity Regulatory Authority shall verify documents according to this Section."

5. Section 1 of Article 11 is amended:

"1. The purpose of the water value is to determine the limit of the offer price of a generator set on the electricity market."

6. Point b, Section 5 of Article 15 is amended and Section 6 is added to Article 15:

b) The percentage of generation output paid at the contract price is specified separately for hydroelectric and thermal power stations. Such percentage shall not exceed 95% and go below 60%, except for circumstances as defined in Section 6 of this Article.

6. Electricity Regulatory Authority shall be responsible for reporting to the Ministry of Industry and Trade for the latter's determination of the percentage of generation output paid at the contract price for BOT power plants and industrial zones' power plants selling partial generation output to the national electricity system according to this Section."

7. Point a, Section 3 of Article 17 is amended:

"a) When the heat loss rate is determined, the variable cost of a generator set shall be specified as follows:

$$VC_b = VC_b^{nlc} + VC_b^{nlp} + VC_b^{k}$$

In which:

VC_b^{nlc}: Constituent (dong/kWh) of the variable cost, which changes in accordance with the fluctuation of the price of the power plant's primary fuel (coal or gas);

VC_b^{nlp}: Constituent (dong/kWh) of the variable cost, which changes in accordance with the fluctuation of the price of the power plant's secondary fuel (oil);

VC_b^{k}: Constituent (dong/kWh) of the variable cost, which changes in accordance with other variations of the power plant;

- The constituent (dong/kWh) of the variable cost, which changes in accordance with the fluctuation of the price of the power plant's primary fuel VC_b^{nlc}; shall be determined as follows:

$$VC_b^{nlc} = HR_{bq}^{nlc} x P_b^{nlc}$$

In which:

HR_{bq}^{nlc}: - Average net loss rate of the primary fuel, as negotiated by the parties on the basis of parameters defined by the manufacturer of the relevant equipment and in accordance with the load as stated in Appendix 1 of the Circular No. 56/2014/TT-BCT dated December 29, 2014 by Minister of Industry and Trade on method for determination of electricity generation costs and sequence of inspection of power purchase agreements;

P_b^{nlc}: Cost of the primary fuel, which is determined as follows:

- Domestic coal: Price of coal is the price at the coal supplier's loading point including losses, management fee and insurance (if any) but excluding transport cost (VND/tonne). In case the coal

purchase contract does not separate the fuel transport cost, the cost of fuel shall be based on the price as shown in the coal purchase contract (VND/tonne);

- Imported coal: The price of coal is the value defined at the exporter's port (VND/tonne);

- Gas: The price of gas is the value defined at the gas mine (VND/BTU).

- The constituent (dong/kWh) of the variable cost, which changes in accordance with the fluctuation of the price of the power plant's secondary fuel VC_b^{nlp}; shall be determined as follows:

$$VC_{bq}^{nlp} = HR_{bq}^{nlp} x P_b^{nlp}$$

In which:

HR_{bq}^{nlp}: Average net loss rate of the secondary fuel (oil), as negotiated by the parties on the basis of parameters defined by the manufacturer of the relevant equipment (kg/kWh);

P_b^{nlp}: Cost of the secondary fuel (oil), which consists of the freight rate and other charges as per regulations (VND/kg).

- Average net loss rate of primary and secondary fuels shall be defined by the single bulk buyer and shall accord with the coefficient of performance degradation. If the heat loss rate as defined in the contract is the heat loss rate averaged over the project's entire life, the coefficient of performance degradation shall not be considered. If the power purchase agreement or negotiation documents define characteristic curve of capacity loss only at load levels, the heat loss rate of generator sets shall be determined at the load level that corresponds with the average electric power output generated by the power plant in several years, as specified in the power purchase agreement.

If the power purchase agree or negotiation documents do not define data concerning the heat loss rate of thermoelectric generator sets, such rate in the power plan shall be the heat loss rate of a standard power plant in the same category of power generation technology and installed capacity. The operator of electricity systems and electricity markets shall be responsible for specifying the heat loss rate of the standard power plant;

- The coefficient of performance degradation of a thermoelectric generator set is defined by the single bulk buyer in the power purchase agreement or negotiation documents.

In case the power purchase agreement or negotiation documents provide the thermal power station with no data on the coefficient of performance degradation, such coefficient shall be that of a standard power station in the same category. The standard coefficient shall be determined by the Operator of electricity systems and electricity markets;

- The constituent (dong/kWh) of the variable cost, which changes in accordance with other variations of the power plant VC_b^k; shall be determined as follows:

$$VC_b^k = \frac{C_{vlp} + C_{kd} + C_k}{P_t x (1 - k_{cs}) x T_{\max}}$$

In which:

C_{vlp}: Total annual cost of secondary materials of the power plant, which is specified by the amount and unit price of secondary materials consumed for generation of electric power (VND);

C_{kd}: Total cost of the start-up process, which is composed of the fuel cost and other costs for starting up the device (VND);

C_k: Annual cost for regular repairs and maintenance, which is defined by the total investment capital for construction works and equipment of the power plant and the rate of regular repair costs as specified in Appendix 1 of the Circular No. 56/2014/TT-BCT dated December 29, 2014 by Minister of Industry and Trade on method for determination of electricity generation costs and sequence of inspection of power purchase agreements

P_t: Total net capacity of the power plant (kW);

k_{CS}: Rate of capacity degradation averaged over the entire economic life of the power plant, which is calculated according to Point c, Section 2, Article 5 of this Circular (%);

T_{max}: Duration of operations at maximum capacity averaged over several years throughout the entire life of the power plan (hour). This value is prescribed in Appendix 1 of the Circular No. 56/2014/TT-BCT dated December 29, 2014 by Minister of Industry and Trade on method for determination of electricity generation costs and sequence of inspection of power purchase agreements."

8. Point e is added to Section 1 of Article 18:

“e) If the annual electricity supply plan by the Ministry of Industry and Trade defines a electric power output of hydroelectric plants using regulation-capable reservoir(s) in over a week lower than 65% of the general output (GO) averaged over several years, such power plants' participation in the electricity market in the relevant year shall be bound by the model that apply to hydroelectric plants using regulation-capable reservoir(s) in less than 02 days as per this Circular.

If hydroelectric plants use power-generating reservoirs and competent government authorities have special requests, the Electricity Regulatory Authority shall be responsible for reporting to the Ministry of Industry and Trade for the latter's consideration of the model of such power plants' participation in the electricity market in the relevant year."

9. Section 1 of Article 22 is amended:

“1. The ceiling offer price of a thermoelectric generator set is determined by this formula:

$$P_{tr} = (1 + K_{DC}) \times (P_{NLC} \times HR_C + P_{NLP} \times HR_P)$$

In which:

P_{tr} : The ceiling offer price of the thermoelectric generator set (VND/kWh);

K_{DC}: Coefficient adjusting the ceiling price by classification of the thermoelectric generator set. For a base-load thermoelectric generator set K_{DC} = 0%; for an intermediate-load one K_{DC} = 5%; for a peak-load one K_{DC} = 20%;

P_{NLC}: Price of primary fuel for the thermoelectric generator set (VND/kCal or VND/BTU);

$P_{NLP:}$ Price of secondary fuel for the thermoelectric generator set (VND/kCal or VND/BTU);

HR_C: Heat rate of primary fuel consumed at the average load of the thermoelectric generator set (BTU/kWh or kCal/kWh)

HR_P: Heat rate of secondary fuel consumed at the average load of the thermoelectric generator set (BTU/kWh or kCal/kWh).”

10. Point a, Section 2 of Article 22 is amended:

“a) The ceiling offer price of a thermoelectric generator set is determined by this formula:

$$P_{tr} = (1 + K_{DC}) x P_{bd}^{CfD}$$

$P_{tr:}$ The ceiling offer price of the thermoelectric generator set (VND/kWh);

$K_{DC:}$ Coefficient adjusting the ceiling price by classification of the thermoelectric generator set. For a base-load thermoelectric generator set KDC = 0%; for an intermediate-load one KDC = 5%; for a peak-load one KDC = 20%;

P_{bd}^{CfD} : Variable price in year N as per the contract for difference of the power station (VND/kWh).”

11. Section 1 of Article 24 is amended:

“1. The best new power plant for year N must meet requirements in Section 1, Article 4 of this Circular to engage in the electricity market in year N and satisfy these criteria:

a) It initiated commercial operations and generated electric power at full installed capacity in year N-1;

b) It is a base-load power plant as classified under criteria in Section 3, Article 21 of this Circular;

c) It employs the coal-fired thermal power technology or gas turbine power technology;

d) It incurs the lowest average cost of full electricity generation per 01 kWh.”

12. Section 2 of Article 25 is rescinded.

13. Point b, Section 3 of Article 26 is amended:

"b) The capacity add-on price for each cycle of transaction in a subsequent year shall be determined by this formula:

$$CAN_i^t = MS^t x \frac{D_i^t}{Q_{BNE} x \sum_{i=1}^{I} D_i^t}$$

In which:

I: Total quantity of transaction cycles in month t;

i: Transaction cycle I in month t;

CAN_i^t : Capacity add-on price of transaction cycle i (VND/kW);

Q_{BNE}: Average available capacity of the best new plant in year N (kW);

MS^t : Shortage cost incurred by the best new power plant in month t (VND);

D_i^t : Load of the forecasting system for transaction cycle i as per the load profile of a typical day forecasted for month t according to Article 19 of this Circular (MW)."

14. Section 1 of Article 27 is amended:

"1. The constraint-based scheduling method shall be adopted for planning operations of the electricity system in the following year. Thermal power station's variable price and power plant's hydrographic values and technical parameters shall be the input data for planning operations of the electricity system in the following year."

15. Point a, Section 3 of Article 31 is amended:

a) The power plant's generation output estimated by simulation of the electricity market for each transaction cycle."

16. Section 2 of Article 35 is amended:

"2. The operator of electricity systems and electricity markets shall be responsible for announcing constituent parameters of the ceiling offer price of thermoelectric generator sets and the following month's ceiling offer price of thermoelectric generator sets according to the electricity market operation schedule as prescribed in Appendix 1 of this Circular."

17. Article 36 is amended:

"Article 36. Adjustment of monthly contractual output

1. The monthly contractual output may be adjustable if the power plant's schedule of repair and maintenance for month M deviates from the annual operation plan due to:

a) A request by the operator of electricity systems and electricity markets for electricity system security. Such request is not the consequence of any of the power plant's actions;

b) A request by a competent government authority, to which the Operator of electricity systems and electricity markets agrees to in accordance with actual operational conditions of the system.

2. The operator of electricity systems and electricity markets shall be responsible for adjusting the monthly contractual output in circumstances as defined in Section 1 of this Article in the following principle: Re-arrange the monthly output Qc among the months in proportion to the modified duration of repair in such a manner to keep the year's total Qc unchanged as per Electricity Regulatory Authority's guidelines for contractual output adjustment procedures.

If the last month's repair and maintenance schedule is modified, the value Qc in proportion to this month's duration of repair shall not be forwarded to the following year.

3. If the power plant's average water intake and generation output from January 01 of year N to the 20th of a month and the upstream water level estimated for the following month are much different from the water intake, the accumulated contractual output and the reservoir's water level at the beginning of the relevant month as defined in the annual plan, the electric power producer and the single bulk buyer shall be responsible for jointly verifying details with the Operator of electricity systems and electricity markets and for reporting to the Electricity Regulatory Authority for adjustment of the following year's values as per the Electricity Regulatory Authority's guidelines for contractual output adjustment procedures."

18. Section 3 and Section 6 of Article 37 are amended:

"3. If the power plant's contractual output in transaction cycle i exceeds such plant's highest generation output, the contractual output in such transaction cycle shall be equal to the power plant's highest generation output. The electric power producer shall notify the Operator of electricity systems and electricity markets of the power plant's highest generation output in a transaction cycle in proportion to the hourly output based on the capacity defined in the default quotation for the following month according to Point a, Section 3, Article 47 of this Circular.

6. The operator of electricity systems and electricity markets shall be responsible for informing the single bulk buyer and the electric power producer that engages directly in transactions of the preliminary hourly contractual output in a month before the 23rd of the month through the electricity market portal. The single bulk buyer and the electric power producer shall be responsible for cooperating with the operator of electricity systems and electricity markets to check errors in the calculation of the following month's hourly contractual output before the 25th of such month. The operator of electricity systems and electricity markets shall be responsible for providing the single bulk buyer and the electric power producer that engages directly in transactions with the official hourly

contractual output in a month by the schedule of electricity market operation as defined in Appendix 1 of this Circular."

19. Clause 37a is added to Article 37:

"Clause 37a. Adjustment of hourly contractual output

1. If the power plant's generator set(s) break(s) down, the plant's hourly contractual output (hourly Qc) shall be subject to following adjustment:

a) If the breakdown duration of the power plant's generator set(s) lasts in 72 hours or less (i.e. 72 transaction cycles): The contractual output (Qc) of the power plant remains unchanged;

b) If the breakdown duration of the power plant's generator set(s) exceeds 72 hours:

- From the beginning of the breakdown to the 72nd transaction cycle: the contractual output (Qc) defined for the power plant remains unchanged;

- From the 73rd transaction cycle until the generator set's recovery and availability:

+ If the plant's actual generation output at the delivery point (Qmq) is lower than its contractual output (Qc) for the duration, the hourly contractual output shall be equal to the value Qmq;

+ If the power plant's Qmq is equal to or higher than its Qc for the duration, Qc remains unchanged.

2. If the duration for repair of the power plant's generator set(s) exceeds that in the approved plan, which constituted to the calculation of the hourly contractual output, the plant's hourly contractual output in cycles affected by such extension of the repair duration shall be subject to following adjustment:

If the actual generation output at the delivery point (Qmq) in a cycle affected by extended repair time is lower than the plant's Qc, the hourly contractual output in such cycle shall be equal to the value Qmq.

3. The electric power producer engaging directly in transactions shall be responsible for cooperating with the Operator of electricity systems and electricity markets to verify breakdown incidents or repair time extension as per the Procedure for joint verification of incidents for market payments. Afterwards, the result of such verification shall be notified to the single bulk buyer and the electric power producer for adjusting the value Qc.

4. The single bulk buyer and the electric power producer engaging directly in transactions shall be responsible for signing a reconfirmation of the plant's monthly and hourly contractual output adjusted according to Section 1 and Section 2 of this Article."

20. Section 7 of Article 41 is amended:

"7. The operator of electricity systems and electricity markets shall calculate and schedule the expected output of hydroelectric plants, which violate the weekly water level limit in 02 consecutive weeks, for each transaction cycle of subsequent days."

21. Point d, Section 2 of Article 42 is amended:

"d) An electric power producer's quotation with increased output (except such quotation of a hydroelectric plant using regulation-capable reservoir(s) in less than 02 days) shall only be the quotation for scheduling subsequent hours upon output shortage warnings."

22. Section 3 is added to Article 44:

"3. Hydroelectric plants using regulation-capable reservoir(s) in less than 02 days can present a subsequent hour quotation with increased output according to their actual hydrographic situations."

23. Section 2 of Article 71 is amended:

"2. The operator of electricity systems and electricity markets shall be responsible for adjusting the following constituent values of the electric power output determined for market payments in transaction cycles according to Section 1, Article 70 of this Circular:

a) The hourly contractual output of the power plant in transaction cycle i (Q_c^i), which is specified as per Article 37 of this Circular;

b) The power plant's electric power output in transaction cycle i, to which the system marginal price applies (Qsmpi). The output is calculated as per Section 5, Article 70 of the Circular;

c) The power plant's electric power output metered in transaction cycle i (Qmq_i)."

24. Section 4, Section 5 and Section 7 of Article 80 are rescinded; Section 9 of Article 80 is amended:

"9. In case a wind turbine power plant temporarily and indirectly participates in the electricity market upon a request by the operator of electricity systems and electricity markets for the purpose of electricity system security, the price of such power plant's total generation output in relevant transaction cycles shall be subject to the power purchase agreement."

25. Section 5 is added to Article 83:

"5. Validation of a payment statement and incidents on the electricity market:

The electric power producer engaging directly in transactions, the single bulk buyer and the operator of electricity systems and electricity markets shall be responsible for using digital signatures to validate and release a statement of market payments and to affirm incidents that occurred on the electricity market. If digital signatures fails to work properly, the single bulk buyer and the operator of electricity systems and electricity markets shall be responsible for validating and releasing the statement of market payments and affirming incidents on the electricity market in a direct manner and reconfirm information upon the rectification of such failure."

26. Section 3 of Article 100 is amended:

"3. The electricity market operation report for a month shall be prepared and announced by the 20th of the following month."

27. Section 3 is added to Article 114:

"3. Establish and present regulations on electricity market participation for BOT power plants and industrial zones' power plants selling parts of their output to the national electricity system to the Minister of Industry and Trade for approval."

28. Section 1a is added to Section 1 of Article 115:

"1a. Establish, supplement and present the following procedures to the Electricity Regulatory Authority for issuance:

a) Procedures for training, inspection and certification of engineers who operate transactions on the electricity market;

b) Procedures for adjustment of contractual output."

Article 2. The following amendments are adopted to certain articles of the Circular No. 56/2014/TT-BCT dated December 29, 2014 by Minister of Industry and Trade on method for determination of electricity generation costs and sequence of inspection of power purchase agreements:

1. Section 8 of Article 2 is amended:

"8. Total investment level of a project initially approved refers to the total level of investments into the project as shown in the initial fundamental design that competent authorities have approved as per regulations."

2. Article 6 is amended:

"Article 6. Method for determination of the fixed cost of operation and maintenance in a thermal power station

The fixed operation and maintenance cost in the base year $FOMC_b$ (VND/kWh) is determined by this formula:

$$FOMC_b = FOMC_b^{scl} + FOMC_b^{nc}$$

In which:

$FOMC_b^{scl}$: Fixed operation and maintenance cost based on major repair cost and other expenses in the base year, which are specified according to Section 1 of this Article (VND/kWh);

$FOMC_b^{nc}$: Fixed operation and maintenance cost based on the labor cost in the base year, which is specified according to Section 2 of this Article (VND/kWh).

1. Fixed operation and maintenance cost based on major repair cost and other expenses in the base year $FOMC_b^{scl}$ (VND/kWh) is specified by the following formula:

$$FOMC_b^{scl} = \frac{TC_{scl}}{P_t x T_{\max} x(1-t_{td}) x(1-k_{cs})}$$

TC_{scl}: Total cost of major repairs and other expenses in the base year, which include major repair cost, secondary material cost, service outsourcing cost and other pecuniary expenses (VND). If the said formula fails to specify the total cost of major repairs and other expenses, the following formula shall determine the total cost of major repairs and other expenses TC_{csl} in the base year:

$$TC_{csl} = VDT_{XL+TB} \times k_{F,scl}$$

In which:

$VĐT_{XL+TB}$: Total investment capital for construction works and equipment of the thermal power station, which is based on the total level of investment for electricity pricing as per Section 2, Article 5 of this Circular (VND);

$k_{F,scl}$: Proportion of major repair cost and other expenses (%) in the thermal power station. $k_{F,scl}$ is defined in Appendix 1 of this Circular;

P_t: Generator set's terminal power as per the approved design, which is determined according to Point c, Section 2, Article 5 of this Circular (kWh);

T_{max}: Number of hours during which the plant operates at average maximum capacity, which is specified according to Point c, Section 2, Article 5 of this Circular (kWh);

t_{td}: Proportion of the plant's auxiliary power and losses, which is determined according to Point d, Section 2, Article 5 of this Circular (%);

k_{CS}: Rate of capacity degradation averaged over the entire economic life of the power plant, which is calculated according to Point c, Section 2, Article 5 of this Circular (%);

2. The fixed operation and maintenance cost by labor cost in the base year $FOMC_b^{nc}$ (VND/kWh) is determined by this formula:

$$FOMC_b^{nc} = \frac{TC_{nc}}{P_t x T_{\max} x(1-t_{td})x(1-k_{cs})}$$

In which:

TC_{nc}: Total labor cost in the base year, which includes salary, social insurance contribution, medical insurance contribution, labor union cost and allowances (VND) incurred by a power plant project that commenced construction works after February 03, 2015.

For power plant projects that commenced construction works before February 03, 2015: total labor cost TC_{nc} in the base year is based on the total cost of labor in the year of the project's commercial operation and is converted to the equivalent value in the base year in the following manner:

- If the salary rate for calculation of the labor cost in the year of the plant's commercial operation is equal to the region-based minimum wage level: The rate for conversion of value to the base year shall be based on the region-based minimum wage level;

- If the salary rate for calculation of the labor cost in the year of the plant's commercial operation is higher than the region-based minimum wage level: The rate for conversion of value to the base year shall be based on Vietnam Consumer Price Index (CPI) but shall not exceed 2.5% per year.

If such method fails to specify the total cost of labor: the following formula shall determine the total labor cost TC_{nc} in the base year:

$$TC_{nc} = VĐT_{XL+TB} \times k_{F,nc}$$

In which:

$VĐT_{XL+TB}$: Total investment capital for construction works and equipment of the thermal power station, which is based on the total level of investment for electricity pricing as per Section 2, Article 5 of this Circular (VND);

$k_{F,nc}$: Proportion of the labor cost (%) in the thermal power station. $k_{F,nc}$ is defined in Appendix 1 of this Circular;

P_t: Generator set's terminal power as per the approved design, which is determined according to Point c, Section 2, Article 5 of this Circular (kWh);

T_{max}: Number of hours during which the plant operates at average maximum capacity, which is specified according to Point c, Section 2, Article 5 of this Circular (kWh);

t_{td} : Proportion of the plant's auxiliary power and losses, which is determined according to Point d, Section 2, Article 5 of this Circular (%);

k_{CS}: Rate of capacity degradation averaged over the entire economic life of the power plant, which is calculated according to Point c, Section 2, Article 5 of this Circular (%);

3. Section 3 of Article 7 is amended:

"3. The constituent value of the variable cost, which changes in accordance with other variations of the power plant in the base year VC_b^k (dong/kWh); shall be determined as follows:

$$VC_b^k = \frac{C_{vlp} + C_{kd} + C_k}{P_t x(1-k_{cs})xT_{\max}}$$

In which:

C_{vlp}: Total annual cost of secondary materials of the power plant, which is specified by the amount and unit price of secondary materials consumed for generation of electric power in the base year (VND);

C_{kd}: Total start-up cost, which includes fuel cost and other expenses for start-up (VND). The number of start-ups is negotiated by the parties according to the electricity system's demands and operational traits of the power plant;

C_k: Annual cost for regular repairs and maintenance, which is defined by the total investment capital for construction works and equipment of the power plant and the proportion of regular repair costs as specified in Appendix 1 of this Circular (VND);

P_t: Total net capacity of the power plant (kW);

k_{CS}: Rate of capacity degradation averaged over the entire economic life of the power plant, which is calculated according to Point c, Section 2, Article 5 of this Circular (%);

T_{max}: Annual duration of operation at maximum averaged over several years in the entire life of the power plant (hour) as per Appendix 1 of this Circular."

4. Article 11 is amended:

"Article 11. Method for determination of the cost of operation and maintenance in a hydroelectric plant

The operation and maintenance cost in the base year (FOMCb) is determined by this formula (VND/kWh):

$$FOMC_b = FOMC_b^{scl} + FOMC_b^{nc}$$

In which:

$FOMC_b^{scl}$: Fixed operation and maintenance cost based on major repair cost and other expenses in the base year, which is specified according to Section 1 of this Article (VND/kWh);

$FOMC_b^{nc}$: Fixed operation and maintenance cost based on the labor cost in the base year, which is specified according to Section 2 of this Article (VND/kWh).

1. The operation and maintenance cost based on major repair cost and other expenses in the base year ($FOMC_b^{scl}$) is specified by the following formula:

$$FOMC_b^{scl} = \frac{TC_{scl}}{A_{bq} x (1 - t_{td})}$$

In which:

TC_{scl}: Total cost of major repairs and other expenses in the base year, which include major repair cost, secondary material cost, service outsourcing cost and other pecuniary expenses (VND). If the said formula fails to specify the total major repair cost and other expenses: the following formula shall determine the total cost of major repairs and other expenses TC_{csl}:

$$TC_{csl} = VĐT_{XL+TB} \times k_{scl}$$

In which:

$VĐT_{XL+TB}$: Total investment capital for construction works and equipment of the hydroelectric plant, which is based on the total level of investment for electricity pricing as per Section 2, Article 10 of this Circular (VND);

k_{scl}: Proportion of major repair cost and other expenses (%) in the hydroelectric station. k_{scl} is defined in Appendix 1 of this Circular;

A_{bq}: Average electric power generated annually at the generator set's terminal, which is determined according to Point al Section 2, Article 10 of this Circular (kWh);

t_{td} : Proportion of auxiliary power and losses concerning the plant's step-up transformer, which is determined according to Point a, Section 2, Article 10 of this Circular (%);

2. The operation and maintenance cost by labor cost in the base year ($FOMC_b^{nc}$) is determined by this formula:

$$FOMC_b^{nc} = \frac{TC_{nc}}{A_{bq} x (1 - t_{td})}$$

In which:

TC_{nc}: Total labor cost in the base year, which includes salary, social insurance contribution, medical insurance contribution, labor union cost and allowances (VND) incurred by a power plant project that commenced construction works after February 03, 2015.

For power plant projects that commenced construction works before February 03, 2015: total labor cost TC_{nc} in the base year is based on the total cost of labor in the year of the project's commercial operation and is converted to the equivalent value in the base year in the following manner:

- If the salary rate for calculation of the labor cost in the year of the plant's commercial operation is equal to the region-based minimum wage level: The rate for conversion of value to the base year shall be based on the region-based minimum wage level;

- If the salary rate for calculation of the labor cost in the year of the plant's commercial operation is higher than the region-based minimum wage level: The rate for conversion of value to the base year shall be based on Vietnam Consumer Price Index (CPI) but shall not exceed 2.5% per year.

If such method fails to specify the total cost of labor: the following formula shall determine the total labor cost TC_{nc} in the base year:

$$TC_{nc} = VĐT_{XL+TB} \times k_{nc}$$

In which:

$VĐT_{XL+TB}$: Total investment capital for construction works and equipment of the hydroelectric plant, which is based on the total level of investment for electricity pricing as per Section 2, Article 10 of this Circular (VND);

k_{nc}: Proportion of the labor cost (%) in the hydroelectric station. k_{nc} is defined in Appendix 1 of this Circular.

A_{bq}: Average electric power generated annually at the generator set's terminal, which is determined according to Point al Section 2, Article 10 of this Circular (kWh);

t_{td} : Proportion of auxiliary power and losses concerning the plant's step-up transformer, which is determined according to Point a, Section 2, Article 10 of this Circular (%);

5. Point b, Section 2 of Article 14 is amended:

"b) The constituent value of the fixed operation and maintenance cost by labor cost in month t, year j ($FOMC_{j,t}^{nc}$) is determined as follows:

- If the salary rate as defined in the electricity pricing plan is equal to the region-based minimum wage level, the following formula shall specify the constituent value of the fixed operation and maintenance cost by labor cost:

$$FOMC_{j,t}^{nc} = FOMC_{b}^{nc} x \frac{L_{\min,j,t}}{L_{\min,b}}$$

In which:

$FOMC_{b}^{nc}$: Fixed operation and maintenance cost based by labor cost in the base year, which is specified according to Section 2, Article 6 of this Circular (VND/kWh);

$L_{min,\ j,t}$: Region-based minimum wage level at the time of payment in month t, year j (VND/person/month);

$L_{min,b}$: Region-based minimum wage level in the base year (VND/person/month).

- If the salary rate as defined in the electricity pricing plan is higher than the region-based minimum wage level or the total labor cost TC_{nc} is based on the proportion of the labor cost in the power plant, the following formula shall specify the constituent value of the fixed operation and maintenance cost by labor cost (VND/kWh):

$$FOMC_{j,t}^{nc} = FOMC_{b}^{nc} x(1+i)^{I-1}$$

In which:

$FOMC_{b}^{nc}$: Fixed operation and maintenance cost based on the labor cost, which is specified according to Section 2, Article 6 of this Circular (VND/kWh);

i: Slippage rate of the constituent value of the operation and maintenance cost based on Vietnam Consumer Price Index (CPI), which does not exceed 2.5% per year;

I: Ordinal number of the payment year from the base year (I = 1 in the base year)."

6. Point b, Section 2 of Article 15 is amended:

“b) The constituent value of the fixed operation and maintenance cost by labor cost in month t, year j ($FOMC_{j,t}^{nc}$) is determined as follows:

- If the salary rate as defined in the electricity pricing plan is equal to the region-based minimum wage level, the following formula shall specify the constituent value of the fixed operation and maintenance cost by labor cost (VND/kWh):

$$FOMC_{j,t}^{nc} = FOMC_{b}^{nc} x \frac{L_{\min,j,t}}{L_{\min,b}}$$

In which:

$FOMC_{b}^{nc}$: Fixed operation and maintenance cost based on the labor cost, which is specified according to Section 2, Article 11 of this Circular (VND/kWh);

$L_{min,j,t}$: Region-based minimum wage level at the time of payment in month t, year j (VND/person/month);

$L_{min,b}$: Region-based minimum wage level in the base year (VND/person/month).

- If the salary rate as defined in the electricity pricing plan is higher than the region-based minimum wage level or the total labor cost TC_{nc} is based on the proportion of the labor cost in the power plant, the following formula shall specify the constituent value of the fixed operation and maintenance cost by labor cost (VND/kWh):

$$FOMC_{j,t}^{nc} = FOMC_{b}^{nc} x(1+i)^{I-1}$$

In which:

$FOMC_{b}^{nc}$: Fixed operation and maintenance cost based on the labor cost, which is specified according to Section 2, Article 11 of this Circular (VND/kWh);

i: Slippage rate of the constituent value of the operation and maintenance cost based on Vietnam Consumer Price Index (CPI), which does not exceed 2.5% per year;

I: Ordinal number of the payment year from the base year (I = 1 in the base year).”

7. Section 2a is added to Section 2 of Article 28:

“ 2a. In case a power plant project commences construction works before February 03, 2015, its pricing of electricity may adopt the total level of investment approved by competent authorities and activated upon the construction of the power plant in lieu of the total level of investment initially approved. If the total level of investment for electricity pricing upon the construction of the power plant is unspecified, the Electricity of Vietnam and the electric power producer shall report to the Ministry of Industry and Trade for consideration of actual situations and determination of the total level of investment for electricity tariff negotiations and the power purchase agreement.”

8. Section 4, Article 3, Appendix 3 of Circular No. 56/2014/TT-BCT with regard to the template of a power purchase agreement:

“4. During the intermission of the electricity market or before the power plant's participation in the electricity market: the payables for the amount of electric power at the delivery point during the interruption of market-related activities or before the plant’s participation in the electricity market shall be subject to the contract price as defined in Clause I, Appendix V of the contract.”

Article 3. Effect

1. This Circular comes into force as of January 01, 2016.

2. Head of Electricity Regulatory Authority, Chief of Office of the Ministry, Chief of the Inspectorate of the Ministry, Heads of relevant Departments, Bureaus and General Departments under the Ministry, entities concerned and participants in the electricity market shall be responsible for implementing this Circular./.

PP MINISTER
DEPUTY MINISTER