

DECISION

**APPROVING THE DETAILED DESIGN OF VIETNAM'S COMPETITIVE WHOLESALE
ELECTRICITY MARKET**

THE MINISTER OF INDUSTRY AND TRADE

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

Pursuant to the Law on Electricity dated December 3, 2004 and the Law on Revision of certain articles of the Law on Electricity dated July 1, 2013;

Pursuant to the Prime Minister's Decision No. 63/2013/QĐ-TTg dated November 8, 2013 prescribing the electricity-industry roadmap, conditions and structure for the purpose of creating and developing levels of Vietnam's electricity market;

Pursuant to the Decision No. 6463/QĐ-BCT of the Ministry of Industry and Trade dated July 22, 2014 on approving the general design of Vietnam's competitive wholesale electricity market;

At the request of the Director of Electricity Regulatory Authority of Vietnam,

HEREBY DECIDES:

Article 1. to approve the detailed design of Vietnam's competitive wholesale electricity market, including the following main contents:

1. Title

- Vietnamese title: Vietnam wholesale electricity market;
- English title: Vietnam Wholesale Electricity Market;
- Abbreviated title: VWEM.

2. Wholesale electricity market participants

- a) The seller, including:

- The generator owning a power plant having the installed capacity of more than 30 MW directly participates in the electricity market. Any hydropower plant having the installed capacity of 30 MW or less is given the option of participating in the electricity market when fully meeting infrastructure requirements;

- A power plant under a Build – Operate – Transfer (BOT) participates in the competitive wholesale electricity market in one of the following models: i) Direct market participation; ii) Indirect market participation through its offering agent affiliated to the Vietnam Electricity Corporation. Either a BOT power plant upon its direct market participation or an offering agent acting on its behalf shall fully exercise or implement responsibilities, rights and obligations of a seller, make a price offer for total power generation or an excess part of generation specified in an offtake agreement (as prescribed by the BOT contract) in accordance with regulations on the competitive wholesale electricity market issued by the Ministry of Industry and Trade. Where neither of the aforesaid models applies, the Vietnam Electricity Corporation shall calculate and request the electricity system and market operator to publicly announce in advance the chart of proposed power mobilization in accordance with power market regulations;

- Strategic and multi-target hydropower plants participate in the competitive wholesale electricity market in one of the following models: i) Direct market participation; ii) Indirect market participation through its offering agent affiliated to the Vietnam Electricity Corporation. Strategic and multi-target hydropower plants shall, irrespective of whether they participate in the competitive wholesale electricity market in the model of direct market participation or indirect market participation through their agents acting on their behalf to make an offer, fully implement and exercise responsibilities, rights and obligations assigned by the seller in accordance with regulations on the competitive wholesale electricity market issued by the Ministry of Industry and Trade.

- Power plants which do not participate in the competitive wholesale electricity market shall include:

i) With regard to those that import power sources, the Vietnam Electricity Corporation shall calculate and request the electricity system and market operator to publicly announce in advance the chart of proposed power mobilization in accordance with power market regulations;

ii) With respect to those fueled by wind, solar or geothermal energy, regardless of their installed capacity, and hydropower plants having the installed capacity of 30 MW or less, shall not be allowed to participate in the competitive wholesale electricity market, the electricity system and market operator shall set the mobilization schedule and mobilise these power plants in accordance with regulations on the competitive wholesale electricity market, regulations on operation and dispatch of power system and other relevant regulations issued by the Ministry of Industry and Trade.

b) The buyer, including:

- 5 Electricity Corporations located in the North, South, Central Coast, Hanoi capital and Ho Chi Minh city (hereinafter referred to as Electricity Corporation);

- Large customers that buy electricity at the minimum voltage level of 110 kV which is directly connected with the transformer station transmitting electricity at the voltage level of 220 kV and meet requirements under the regulations issued by the Ministry of Industry and Trade shall be given the option of participating in the competitive wholesale electricity market. When infrastructure requirements are satisfied, it is likely to consider allowing more large customers to participate in the competitive wholesale electricity market;

- New electricity wholesalers shall be allowed to participate in the competitive wholesale electricity market when meeting requirements set out in regulations issued by the Ministry of Industry and Trade.

c) The Electricity Trading Company (as a subsidiary of the Vietnam Electricity Corporation) shall perform the task of purchasing electricity from power plants that do not participate in the competitive wholesale electricity market and selling these electricity quantities of these power plants to Electricity Corporations in accordance with regulations issued by the Ministry of Industry and Trade.

d) The service supplier

- The electricity system and market operator is the National Load Dispatch Center which is a subsidiary of the Vietnam Electricity Corporation. In the competitive wholesale electricity market, the National Load Dispatch Center will be transformed into a financially autonomous entity of the Vietnam Electricity Corporation;

- The electricity transmission unit is the National Power Transmission Corporation which is a subsidiary of the Vietnam Electricity Corporation.

- The electricity distributor, including 5 Electricity Corporations located in the North, South, Central Coast, Hanoi capital and Ho Chi Minh city, shall perform its distribution grid management functions;

- Entities providing services such as acquiring and managing power measurement data shall perform the following functions in the competitive wholesale electricity market: i) collecting power measurement data shown on power meters and storing them in the computer system; ii) transmitting these data to the center for management of power measurement data; iii) storing, administering and processing the received data used in the electricity market. Functions and/or duties of these data collection and administration service suppliers shall be covered by regulations on power measurement practices in the electricity system and regulations on the competitive wholesale electricity market. Costs of collection and management of power measurement data must be kept separate from those paid for other functions or services in the same accounting unit.

3. Spot market

a) Market model: the model of price offered based on predetermined variable costs (Cost-based Pool) shall be applied;

b) Trading interval: 30 minutes;

c) Dispatch interval: 30 minutes;

d) Price offering

- Price offering interval: Within the day D-1, the generator shall prepare the price schedule for 48 trading intervals within the day D and address it to the electricity system and market operator. Within the day D, the generator shall receive an updated price schedule sent back by the operator within 6 hours before the operation time;

- Offering of the price of power generation: The generator shall offer the price within the range between floor and ceiling prices for all available capacity of power generating sets. The ceiling price specified in the price offer schedule which is applied to power generating sets shall be calculated in accordance with regulations on the competitive wholesale electricity market. It varies depending on the water pricing carried out by the electricity system and market operator. The price schedule of the generator shall include a maximum of 10 pairs including the price offered (VND/kWh) relative to the generating capacity (MW) of a power generating set within a single trading interval;

- Load-side price offering: Special subjects-matter eligible for participating in this offer include i) pumped-storage hydroelectricity plants, ii) interruptible loads of which prices are offered to supply emergency standby services.

dd) Water pricing: The electricity system and market operator shall calculate value of water on a weekly basis used in hydropower plants within the same electricity system, and publicly announce the ceiling prices set forth in the price offer schedules of hydropower plants. The generator shall carry out the water pricing in order to develop their appropriate offer strategies. The electricity system and market operator shall release input data and water pricing results to power market members. Tools and software used for calculation of value of water by the electricity system and market operator shall be externally and independently audited in accordance with regulations on the competitive wholesale electricity market;

e) Operation scheduling shall be subject to regulations on the competitive wholesale electricity market, including the following main contents:

- Year-ahead operation schedule: The electricity system and market operator shall set the year-based (12-month) power market operation schedule, draw up the plan for electricity system operation, measure and assess the electricity system security. The year-based operating schedule shall be updated on a quarterly basis and maintain valid in the year ahead as well as the successive year. Quantity results of the year-based operation schedule include mobilised capacity, estimated generation quantity of generating sets, proposed market prices and other necessary parameters;

- Month-ahead operation schedule: The electricity system and market operator shall set the month-based power market operation schedule. The month-based operation schedule shall be set

in the same manner as the year-based operation schedule, updated with input data and shall remain valid in the next month;

- Week-ahead operation schedule: The electricity system and market operator shall set the week-based power market operation schedule, and set out procedures for assessment of short-term (weekly) system security within a 14-day interval according to baseline, low or high load scenarios;

- Day-ahead operation schedule: The electricity system and market operator shall receive updated data and offer schedules for the day ahead from power generating or transmission units, and set its day-ahead operation schedule.

g) Scheduling of mobilization of generating sets: The electricity system and market operation shall be responsible for setting the schedule of mobilization of generating sets according to the principle of simulated scheduling of optimal mobilization taking into account binding conditions for electricity system security. The simulation model of electricity system with 3 nodes or zonal hubs (North, Central Coast and South) must be applied in power mobilization and dispatch scheduling;

h) Determination of market price: Applying the mechanism for determining the spot price identically to the entire system and determining the ex-post price.

4. Contract regime

Contract mechanisms existing in the competitive wholesale electricity market, including i) Vesting contracts; ii) Bilateral contracts; iii) Centralized exchange contracting, shall be subject to the following specific regulations:

a) Vesting contract mechanism: Vesting contracts for differences (CfD) between the generator and the Vietnam Electricity Corporation shall be transformed into vesting CfD contracts between the generator and Power Corporations according to the following principles:

- Average costs incurred from purchase of input electricity under terms and conditions of vesting contracts of Power Corporations are equivalent to each other;

- Contractual price and quantity should be measured to be consistent with the load projection of customers of these Power Corporations; in conformity with binding requirements set out by the generator.

- Commitments between the generator and a Power Corporation must be maximally maintained;

- These contracts shall enter into force from the time of official operation of the competitive wholesale electricity market.

b) Bilateral contracts: The seller and the buyer shall, of their own free will, negotiate, agree on the price and quantity, sign a bilateral contract in a form of a CfD, and execute this contract as from the time of official operation of the competitive wholesale electricity market;

c) Centralized exchange contracting mechanism: Entities involved in contractual quantity offers or bids on the pool shall be subject to regulations on the competitive wholesale electricity market. This regime is aimed at dealing with differences (surpluses or deficits) between contract quantities and load demands or actual generation capabilities of these entities.

5. Mechanism for provision of ancillary services

a) Frequency control service (including regulating reserve and spinning reserves): Purchase these services on the spot market. Upon application of the ex-ante pricing, the mechanism for co-optimization of energy and frequency control service shall be implemented;

b) With respect to other ancillary services required to maintain operation of the electricity system, the electricity system and market operator shall contract service providers by implementing the competitive bidding or bid appointment procedures.

6. Payment mechanism

a) Payment made on the spot market

- The electricity system and market operator shall calculate payments and make such payments to spot market participants in accordance with regulations on the competitive wholesale electricity market.

- Buyers of electricity purchased on the spot market shall be responsible for implementing regulations on guarantee for payment of power bills on the spot market. In the event that buyers are in breach of regulations on payment of power bills, the electricity system and market operator shall be entitled to use monetary amounts given as such guarantee to make payment in accordance with power market regulations.

b) Settlement of contracts: The seller and the buyer shall directly make payment under terms and conditions of the power purchase agreement between the seller and the buyer.

c) Payment of service costs arising in the competitive wholesale electricity market:

- The electricity system and market operator shall collect the fee for dispatch and operation of the electricity system and the fee for management of transactions occurring on the electricity market, and ensure that these fee amounts can cover its costs of investment in infrastructure facilities and operating expenditures;

- The National Power Transmission Corporation can receive payment subject to electricity transmission price regulations issued by the Ministry of Industry and Trade, and ensure its full

recovery of costs incurred and acceptable profitability level in order to be capable of investing in development of the transmission grid as stated in the specified plan.

7. Disclosure of market information: The electricity system and market operation shall be responsible for punctually disclosing all information and data necessary for market participants in accordance with regulations on the competitive wholesale electricity market.

8. Mechanism for cross-subsidization between Power Corporations

a) Cross-subsidization purposes: Handling the difference in costs of power distribution and structure of customers between Power Corporations;

b) The Vietnam Electricity Corporation shall be responsible for cross-subsidization between Power Corporations in accordance with regulations issued by the Ministry of Industry and Trade, and the Ministry of Finance.

9. When satisfying requirements concerning infrastructure facilities used for operation of the electricity system and market, the Electricity Regulatory Authority shall be responsible for considering and sending the Ministry of Industry and Trade the request for permission to:

- Regulation interval: reduce the reoffer interval to less than 30 minutes;

- Reoffer interval: reduce the reoffer interval to less than 6 hours;

- Scheduling of mobilization of generating sets: apply the simulation model of the entire transmission grid;

- Market price determination: change to the mechanism for determination of prices based on 3 nodes or zonal hubs standing for 3 regions (North, Central Coast and South), and then step-by-step add more nodes or hubs to the model of calculation of market price. The ex-ante pricing mechanism identically associated with the mechanism for scheduling co-optimization of energy and frequency control service shall be applied. Entities involved shall be allowed to apply the Financial Transmission Rights mechanism for risk management.

10. The Electricity Regulatory Authority shall assume responsibility for considering and sending the Ministry of Industry and Trade the request for permission to: i) change the cost-based pool model to the price-based pool model when meeting prerequisites; ii) implement the following mechanisms in the price-based pool:

a) The generator can offer the price according to its offer strategy, depending on the generation capacity and balance between power demand and supply of the electricity system that may vary over specific trading intervals; does not apply regulations on the ceiling price in the offer schedule as referred to in Point d Clause 3 of this Article;

b) Water valuation: The electricity system and market operator shall calculate value of water during its operation schedule. Generators shall, on its own, value water to make its offer.

Article 2. Plan to develop the competitive wholesale electricity market

1. The stage of preparation for the competitive wholesale electricity market expected to take place by the end of 2015

a) Complete and submit to the Prime Minister the proposal to restructure the electricity sector with the aim of developing the competitive wholesale electricity market;

b) Prepare a complete proposal to develop information technology facilities for operation and oversight of the competitive wholesale electricity market for submission to the Ministry of Industry and Trade to obtain its approval;

c) Design and release the outline of contents of training or capability improvement training activities for power market participants.

2. The stage of first-step pilot operation of the competitive wholesale electricity market expected to take place in 2016 (all calculations and simulated operations will be sketched out on paper and actual payments do not occur).

a) First-step pilot operation of the competitive wholesale electricity market: Continue to operate the competitive power generation market in reality. Mechanisms of the competitive wholesale electricity market (such as vesting, settlement or cross-subsidization) will be presented through calculation or simulation carried out on paper;

b) Establishment of the legal documentation system: Issue the Circular on operation of the competitive wholesale electricity market; begin to make relevant regulations in order to develop the competitive wholesale electricity market;

c) Restructure the electricity sector according to the proposal and roadmap which have been approved by the Prime Minister;

d) Begin to invest in the infrastructure system according to the approved proposal of the Ministry of Industry and Trade;

dd) Hold basic and advanced training courses attended by all power market participants;

e) Review and assess the pilot operation of the competitive wholesale electricity market carried out on paper, and consider revising any mechanism for the second-step operation of the competitive wholesale electricity market.

3. The stage of second-step pilot operation of the competitive wholesale electricity market expected to take place in the period of 2017 - 2018.

a) Test mechanisms for realistic operation of the competitive wholesale electricity market;

b) Update and improve regulations on operation of the competitive wholesale electricity market and other relevant ones;

c) Restructure the electricity sector according to the proposal already approved by the Prime Minister; finish transforming the National Load Dispatch Center into an entity with the independent accounting regime affiliated to the Vietnam Electricity Corporation by 2017;

d) Invest in information technology facilities according to the proposal already approved by the Ministry of Industry and Trade; complete and test operation of the Market Management System (VWEM MMS);

dd) Continue and finish training courses attended by market participants;

e) Review and assess the second-step pilot operation of the competitive wholesale electricity market carried out on paper, and consider revising the mechanism for the complete operation of the competitive wholesale electricity market (where necessary).

4. The stage of the complete operation of the competitive wholesale electricity market expected to take place from 2019.

Article 3. Implementation

1. The Electricity Regulatory Authority shall assume the following responsibilities:

a) Establish and improve the proposal to restructure the electricity sector to support development of the competitive wholesale electricity market for submission to the Ministry of Industry and Trade and then the Prime Minister in December of 2015;

b) Prepare an outline of contents of training in the competitive wholesale electricity market and implementation plan, and submit that outline to the Ministry of Industry and Trade for its publication in December of 2015;

c) Develop and improve the legal documentation system necessary for each stage of development of the competitive wholesale electricity market;

d) Prepare the plan for pilot operation of the competitive wholesale electricity market in 2016 for submission to the Ministry of Industry and Trade before being released in December of 2015;

dd) Continue to study and suggest measures to handling issues that may arise in the competitive wholesale electricity market, including:

- Roadmap for transformation into the price-based pool and mechanism for capacity adequacy of the electricity system;

- Assign vesting contracts to Power Corporations;

- Conduct research in development of the mechanism for cross-subsidization between Power Corporations or for separation of power distribution costs (prices) arising in power distribution and retail activities of Power Corporations;
 - Specify ancillary services, technical standards and mechanisms for purchase or mobilization of ancillary services in the competitive wholesale electricity market;
 - Develop the mechanism for trade in and mobilization of power sources that do not participate in the power market, such as imported power sources and power sources derived from new energy, etc.
 - Establish the mechanism for payment of power bills on the spot market, and calculation of taxes existing in the competitive wholesale electricity market;
 - Establish the centralized exchange contracting and financial transmission right mechanism.
- e) Undertake and collaborate with the Vietnam Electricity Corporation and its affiliates participating in the market in training or capability improvement training courses attended by these entities, and in satisfaction of demands of the competitive wholesale electricity market.

2. The Vietnam Electricity Corporation shall assume the following responsibilities:

- a) Promptly prepare a complete proposal to develop information technology facilities for operation and oversight of the competitive wholesale electricity market to meet requirements for operation of the competitive wholesale electricity market, particularly those set out in Clause 9 Article 1 of this Decision, and submit it to the Ministry of Industry and Trade for its approval in December of 2015;
- b) Promptly prepare a complete proposal to improve capacity of market participants and submit it to the Ministry of Industry and Trade for its approval in the fourth quarter of 2015;
- c) Develop the proposal to make multi-target strategic hydropower plants participate in the power market according to the approved detailed design of the competitive wholesale electricity market, submit it to the Ministry of Industry and Trade for its approval in September of 2015. Direct these plants to make preparation for participation in the competitive wholesale electricity market according to the plan approved by the Ministry of Industry and Trade;
- d) Study and recommend the mechanism for reducing the offtake rate during the process of negotiating a contract with a BOT investor and counsel the Ministry of Industry and Trade to give the incentive policy to BOT power plants wishing to participate in the competitive wholesale electricity market;
- dd) Invest in infrastructure facilities necessary for operation of the power market which are used by its affiliates so that they can perform their duties in the competitive wholesale electricity market and used by the Electricity Regulatory Authority to facilitate its supervisory operations;

- e) Hold training sessions to improve capacity of power market participants;
- g) Hire external and independent auditors to audit tools and software used for assisting in operation of the competitive wholesale electricity market;
- h) Send a quarterly report to the Electricity Regulatory Authority on preparations for operation of the competitive wholesale electricity market.

3. Generators, Power Corporations, National Power Transmission Corporation, National Load Dispatch Center and Electric Power Trading Company shall assume the following responsibilities:

- a) Invest in and improve facilities and equipment necessary for participation in the competitive wholesale electricity market according to the design already approved within their jurisdiction, and ensure these facilities and equipment are compatible with information technology system for the competitive wholesale electricity market which have already been approved;
- b) Set up the training plan according to the content outline released by the Ministry of Industry and Trade, provide adequate funds and employees for implementation of the training plan issued by the Ministry of Industry and Trade;
- c) Ensure sufficient personnel and actively participate in the training program and provide funds for capability improvement training courses attended by their affiliates to meet requirements for participation in the competitive wholesale electricity market on schedule;
- d) Finish making preparations for participation in operation of the competitive wholesale electricity market ahead of December of 2015 in order to participate in official operation of the power market according to the plan referred to in Article 2 hereof.

Article 4. Director of the Electricity Regulatory Authority, Chief of the Ministry Office, Chief Ministry Inspector, Directors or Directors General of relevant Departments or Authorities affiliated to Ministries, Director General of the Vietnam Electricity Corporation, generators, organizations, or individuals concerned, shall be responsible for implementing this Decision./.

**PP. THE MINISTER
THE DEPUTY MINISTER**

Hoang Quoc Vuong

*This translation is made by **LawSoft** and for reference purposes only. Its copyright is owned by **LawSoft** and protected under Clause 2, Article 14 of the Law on Intellectual Property. Your comments are always welcomed*

Unofficial Translation - For Reference Only