

**DECISION**

**on the**

**Approval of the Revised National Power Development Master Plan for the 2011-2020  
Period with the Vision to 2030**

**PRIME MINISTER**

Pursuant to the Law on Organization of the Government dated 19 June 2015;

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

Pursuant to the Government's Decree No. 137/2013/ND-CP dated 21 October 2013 stipulating the detailed implementation of several articles of the Electricity Law and the Law on the Amendment of and Supplement to the Electricity Law;

In response to the MoIT's Submission Letter No. 13649/TTr-BCT dated 31 December 2015, MoIT's Official Letter No. 1703/BCT-TCNL dated 29 February 2016 and comments/feedback from various Ministries on the Revised National Power Development Master Plan for the 2011-2020 Period with the Vision to 2030,

**DECIDES:**

**Article 1.** To approve the Revised National Power Development Master Plan for the 2011-2020 Period with the Vision to 2030 (referred to as the Revised Master Plan VII) with the following main contents:

1. Perspectives for development:

a) The power development shall be in one step ahead in order to ensure adequate power supply, thus satisfying the requirements for socio-economic development and power demand for people's daily lives;

b) Domestic sources for primary energy shall be efficiently utilized in couple with the rational import of electricity and fuel with a view to diversifying primary energy sources for power production. Priorities shall be given to renewable power sources, hence bringing a breakthrough for national energy security, contributing to the conservation of energy resources and minimizing negative environmental impacts as caused by electricity production activities;

c) Power sources and grids shall be synchronously expanded on the basis of available resources and socio-economic development needs; the investment in the development of power sources and power demand shall be balanced across areas/regions on the basis of rational and efficient use of primary energy resources in each area/region;

d) 220kV and 500kV transmission grids shall be expanded in the national electricity

system to guarantee the power transmission from power centers to load centers in safe, reliable and cost-saving manners; at the same time, small-scale renewable power sources shall be established and connected to distribution grid(s), thus contributing to reduced power losses;

dd) The quality of electricity shall be gradually improved for provision of better electricity services. The electricity sale prices shall be driven by the market mechanism, aiming at encouraging investments in the development of electricity sector; and electricity conservation and efficiency shall be promoted;

e) The competitive electricity market shall be established in accordance with the approved roadmap so as to diversify various methods of electricity investment and trading. The State shall only maintain its monopoly of electricity transmission grid(s) in order to ensure the national energy security.

## 2. Objectives

### a) General objectives:

Mobilize all national and international resources for power development to ensure adequate power supply with increasing quality and reasonable electricity price for the country's socio-economic development; utilize primary energy sources for electricity production in diverse and efficient manners; promote the exploitation and use of renewable sources for electricity production, and steadily increase the proportion of renewable electricity for the purpose of reduced dependence on imported coal-fired electricity thus contributing to national energy security, climate change mitigation, environmental protection and sustainable socio-economic development; formulate and promote the smart electricity system which can integrate a high RE proportion.

### b) Specific objectives:

- Provide adequate electricity for domestic demands hence addressing the country's socio-economic development objectives with average GDP growth of approx. 7.0%/year in the period 2016-2030:

+ Commercial electricity: approx. 235-245 billion kWh in 2020; approx. 352-379 billion kWh in 2025; approx. 506-559 billion kWh in 2030;

+ Electricity to be produced and imported: approx. 265-278 billion kWh in 2020; approx. 400-431 billion kWh in 2025, and approx. 572-632 billion kWh in 2030;

- Prioritize the exploitation of renewable sources for electricity production; increase the share of electricity produced from these sources (excluding large- and medium-scale and pumped-storage hydropower) to 7% in 2020 and over 10% in 2030.

- Establish an electricity grid system which is operationally flexible and highly automated from transmission to distribution stages; set up fully- and semi-automated transformer stations for higher labor productivity in the electricity sector.

- Accelerate the electrification program in rural and mountainous areas, ensuring that most of rural households will have access to and utilize electricity by 2020.

### 3. National Power Development Master Plan

#### a) Master plan for the development of power sources:

##### - Development orientations:

+ Ensure the balanced capacity of power sources in each region: northern, central and southern, ensuring the reliability of electricity supply in each regional electricity system so as to reduce losses of transmissions, share the electricity yield and efficiently exploit hydropower plants in rainy and dry seasons.

+ Rationally develop regional power centers together with the expansion of small- and medium-scale power sources in various areas/regions nationwide, aiming to ensure reliable electricity supply on site and reduce losses in the national electricity system as well as to guarantee the economics of projects, thus contributing to the socio-economic development in each region and the whole country.

+ Exploit new power sources in couple with intensive investment and technological renovation in operating power plants; respect environmental standards; and apply modern technologies to new power plants.

+ Diversify forms of investment in the development of power sources in order to strengthen competition and improve economic efficiency.

##### - Master plan for the development of power sources

+ Accelerate the expansion of renewable power sources (hydro, wind, solar, biomass power, etc.), and gradually increase the share of renewable electricity in the structure of power sources.

. Prioritized development of hydropower sources, especially multi-purpose projects (for flood control, water supply, electricity production); carrying out research studies on putting pumped-storage hydropower plants into operation in conformity with the development of national electricity system, aiming to improve the operational efficiency of the system. The total capacity of hydropower sources (including small and medium, and pumped-storage hydropower) shall increase from less than 17,000 MW at present to approx. 21,600 MW in 2020, approx. 24,600 MW in 2025 (1,200 MW for pumped-storage hydropower) and approx. 27,800 MW in 2030 (2,400 MW for pumped-storage hydropower). The electricity produced from hydropower sources shall account for approx. 29.5% in 2020, approx. 20.5% in 2025 and approx. 15.5% in 2030.

. Bringing the total wind power capacity from current 140 MW to approx. 800 MW in 2020, approx. 2,000 MW in 2025 and approx. 6,000 MW in 2030. The wind power shall make up approx. 0.8 % in 2020, approx. 1% in 2025 and approx. 2.1% in 2030.

. Development of biomass power sources: applying cogeneration method in sugar mills and food/foodstuff processing plants; co-combustion of biomass and coal in coal-fired power plants; electricity generation from solid wastes, etc. The share of electricity produced from biomass sources shall reach approx. 1% in 2020, approx. 1.2% in 2025 and approx. 2.1% in 2030.

. Accelerated development of solar power, including large ground-mounted and small rooftop systems: Bringing the total solar power capacity from the current negligible level up to approx. 850 MW in 2020, approx. 4,000 MW in 2025 and approx. 12,000 MW in 2030. The share of solar power sources shall account for approx. 0.5% in 2020, approx.1.6% in 2025 and approx. 3.3% in 2030.

+ Develop a rational number of thermal power plants in consistency with the supply and distribution of fuel sources:

. Thermal power plants using natural gas and liquefied natural gas (LNG): In 2020, the total capacity shall be approx. 9,000 MW, generating about 44 billion kWh of electricity and accounting for 16.6% of electricity production; in 2025, the total capacity shall be approx. 15,000 MW, generating about 76 billion kWh of electricity and accounting for 19% of electricity production; in 2030, the total capacity shall be approx. 19,000 MW, generating about 96 billion kWh of electricity and accounting for 16.8% of electricity production.

For South East Region: Ensuring a stable gas supply for power plants in: Phú Mỹ, Bà Rịa and Nhơn Trạch.

For South West Region: from 2020, urgently bringing ashore gas from Block B for power plants in the power centers of Kiên Giang and Ô Môn with a total capacity of approx. 4,500 MW.

For Central Region: It is expected that power plants shall be developed after 2020 with a total capacity of approx. 3,000 MW - 4,000 MW, consuming approx. 3.0 to 4.0 billion m<sup>3</sup> gas per year.

The LNG-imported storage/port system shall be established in Sơn Mỹ (Bình Thuận Province) to supply more gas to the power centers of Phú Mỹ and Nhơn Trạch in the context of declining natural gas in South East Region; options shall be considered for additional gas supply to the power centers of Cà Mau and Ô Môn via the gas pipeline linking gas systems in South East and South West Regions.

. Coal-fired thermal power: Maximum exploitation of domestic coal resources shall be ensured for the development of thermal power plants, with priorities given to the use of domestic coal by Northern thermal power plants. In 2020, the total capacity shall be approx. 26,000 MW, generating about 131 billion kWh of electricity (i.e. about 49.3% of electricity produced) and consuming approx. 63 million tons of coal; in 2025, the total capacity shall be approx. 47,600 MW, generating about 220 billion kWh of electricity (i.e. about 55% of electricity produced) and consuming approx. 95 million tons of coal; in 2030, the total capacity shall be approx. 55,300 MW, generating about 304 billion kWh (i.e. about 53.2% of electricity produced) and consuming approx. 129 million tons of coal. Due to limited source of domestic coal, it shall be needed to build up some imported coal-fired thermal power plants in power centers of Duyên Hải, Long Phú, Sông Hậu, Long An, etc.

+ Develop nuclear power plants so as to ensure future stable power supply when domestic primary energy sources become depleted: Put the first nuclear power generation unit into operation in 2028; in 2030, the nuclear power capacity shall reach 4,600 MW, generating about 32.5 billion kWh i.e. 5.7% of electricity production.

+ Electricity export/import: Perform efficient power exchanges with regional countries, ensuring the interests of parties involved, strengthening exchanges for better electricity system safety, and fostering import activities in hydropower-potential regions, primarily South East Asian (ASEAN) and Great Mekong sub-region (GMS) countries.

- Structure of power sources:

+ In 2020:

. The total capacity of power plants shall be approx. 60,000 MW, of which: approx. 30.1% for large, medium and pumped storage hydropower, approx. 42.7% for coal-fired thermal power; 14.9% for gas-fired thermal power (including LNG); 9.9% for renewable sources (including small hydropower, wind power, solar power, biomass power); and 2.4% for imported power.

. The electricity to be produced and imported shall be about 265 billion kWh, of which: approx. 25.2% for large, medium and pumped storage hydropower; approx. 49.3% for coal-fired thermal power; 16.6% for gas-fired thermal power (including LNG); 6.5% for renewable sources (including small hydropower, wind power, solar power, biomass power); and 2.4% for imported power.

+ In 2025:

. The total capacity of power plants shall be approx. 96,500 MW, of which: approx. 21.1% for large, medium and pumped storage hydropower, approx. 49.3% for coal-fired thermal power; 15.6% for gas-fired thermal power (including LNG); 12.5% for renewable sources (including small hydropower, wind power, solar power, biomass power); and 1.5% for imported power.

. The electricity to be produced and imported shall be about 400 billion kWh, of which: approx. 17.4% for large, medium and pumped storage hydropower; approx. 55% for coal-fired thermal power; 19.1% for gas-fired thermal power (including LNG); 6.9% for renewable sources (including small hydropower, wind power, solar power, biomass power); and 1.6% for imported power.

+ In 2030:

. The total capacity of power plants shall be approx. 129,500 MW, of which: approx. 16.9% for large, medium and pumped storage hydropower, approx. 42.6% for coal-fired thermal power; 14.7% for gas-fired thermal power (including LNG); 21% for renewable sources (including small hydropower, wind power, solar power, biomass power); 3.6% for nuclear power; and 1.2% for imported power.

. The electricity to be produced and imported shall be about 572 billion kWh, of which: approx. 12.4% for large, medium and pumped storage hydropower; approx. 53.2% for coal-fired thermal power; 16.8% for gas-fired thermal power (including LNG); 10.7% for renewable sources (including small hydropower, wind power, solar power, biomass power); 5.7% for nuclear power; and 1.2% for imported power.

The list and commissioning schedule of power source projects can be found in Appendix I to this Decision.

b) Master plan for the development of power grids:

- Development orientations:

+ Establish and upgrade power grids, and steadily satisfy technical standards as set for the transmission grid; by 2020, the transmission grid shall reach the reliability standard N-1 for key equipment items and meet quality standards as stipulated in legal regulations.

+ Address overload/congestion incidents and low voltage quality of the transmission grid; ensure the higher-reliable power supply to load centers.

+ The 500kV transmission grid shall be built for electricity transmission from large power centers to load centers, ensuring on-going connections among regional power systems and power exchanges with other countries in the region.

+ The 220 kV transmission grid shall be constructed using the double-circuit structure; transformer stations in heavy-load density areas shall be properly designed for flexible operations. Considerations shall be taken into the construction of GIS, 220/22 kV, underground and fully-automated transformer stations in load centers. The smart grid technologies shall be applied in the

power transmission process.

- The quantity of transmission grids to be built by each phase can be found the Table 1 below:

Table 1. Quantity of transmission grids to be built up to 2030

Item	Unit	2016 - 2020	2021 - 2025	2026 - 2030
500 kV stations	MVA	26,700	26,400	23,550
220 kV stations	MVA	34,966	33,888	32,750
500 kV lines	km	2,746	3,592	3,714
220 kV lines	km	7,488	4,076	3,435

- Key grid projects for 2016 – 2020, of which the proper progress shall be made to ensure the required power supply to southern provinces, shall include:

+ 500 kV projects: Project for Upgrading 500 kV Capacitors across the entire 500 kV North-Central-South Line; Project for Constructing 500 kV lines, namely: Vĩnh Tân - Rẽ Sông Mây - Tân Uyên, Duyên Hải - Mỹ Tho - Đức Hòa, Long Phú - Ô Môn, and Sông Hậu - Đức Hòa; Project for Building Pleiku 2 500 kV Transformer Station (to be operational in 2016).

+ 220 kV projects: Hà Tĩnh - Đà Nẵng Project (to be operational in 2017); Bình Long - Tây Ninh Project (2016 - 2017); Vĩnh Tân - Tháp Chàm - Nha Trang Project và Vĩnh Tân - Phan Thiết - Hàm Tân - Tân Thành Project.

The list and schedule of transmission grids projects, which are to be upgraded and invested, can be found in Appendix II to this Decision.

c) Grid connectivity with regional countries:

- Continue the collaborative research and grid interconnections with ASEAN and GMS countries.

- Ensure the grid connectivity with Laos by utilizing the 220 kV lines for electricity import from hydropower plants in Southern and Central Laos.

- Sustain the grid connectivity with Cambodia via current 220 kV lines; investigate the possibility of strengthened grid connectivity between Vietnam and Cambodia via bilateral and multilateral cooperation programs.

- Maintain the power trading between Vietnam and China at the current voltage levels of 220 kV and 110 kV; seek for solutions to non-synchronous interconnections among power systems via DC-AC transformer stations. Keep on considering the possibility of power exchanges with China via the 500 kV interconnected grid.

d) Power supply to rural and mountainous areas, and islands:

Carry on the implementation of the Program for power supply to rural and mountainous areas, and islands as stipulated in the Prime Minister’s approved Decision; supply power from the national grid in couple with from renewable sources to rural and mountainous areas, and islands; make sure that most of rural households shall have electricity by 2020.

dd) Funding requirements:

The total investment in power sources and grid expansion (excluding BOT-driven power sources) in 2016 - 2030 period shall be approx. VND 3,206,652 billion (USD 148 billion equivalent), divided by phase as follows:

- 2016 - 2020 period: approx. VND 858,660 billion (nearly USD 40 billion equivalent, USD 7.9 billion/year on average), of which 75% for power sources and 25% for grid development.

- 2021 – 2030 period: approx. VND 2,347,989 billion (USD 108 billion equivalent, over USD 10.8 billion/year on average), of which 74% for power sources and 26% for grid development.

#### 4. Solutions to master plan implementation

##### a) Solutions to national energy security:

- The Electricity of Vietnam (EVN), Vietnam Oil and Gas (PVN) and Vietnam Coal - Mineral Corporation (Vinacomin) shall take key responsibilities for the development of power sources. The National Power Transmission Corporation shall be responsible for national transmission grid development.

- Diversify fuel and primary energy sources, which are to be supplied for electricity production.

- Take relevant measures for higher share of renewable power sources: Establish mechanisms, policies and legal documents embedded with proper incentives to accelerate the development of renewable power sources, emphasizing on support price mechanisms for projects using wind, solar, biomass, geothermal energy, etc.

- Strictly carry out the nuclear power development plan in compliance with legal provisions and ensure the fulfillment of topmost objectives, which are safety and efficiency. Coordinate with other countries and international organizations to speed up the use of nuclear energy; gradually master relevant technologies and develop nuclear power for peace purposes.

- Put financial incentives into practice and expand international cooperation for the purposes of strengthened exploration/surveys, improved reserves and exploitability of coal, natural gas and renewable energies, and guaranteed fuel/energy supply security for electricity production.

- Actively seek for the replacement of gas sources which shall be declined and depleted in the near future. Accelerate the negotiations with relevant countries and come up with stable and long-term contracts for imported coal supply to thermal power plants.

- Concentrate on the establishment of regionally-based coal transshipment ports for optimal costs of coal imports; accelerate the surveys/negotiations on stable and long-term coal/LNG import opportunities, which are to ensure secure fuel supply to power plants.

##### b) Solutions to investment capital generation for power sector development:

- Enhance the equitization of power generation corporations/companies which are under the management of EVN, PVN and Vinacomin.

- Gradually improve the financial mobilization capacity among power sector's enterprises with the following strategies: strengthen their efficiency/performance; guarantee their capital accumulation; ensure the equity ratio which satisfies the requirements by national and international financial institutions; and come up to the point when their self-accumulated capital shall be the main funding source for power projects.

- Establish the power sector's financially-credible corporations/companies, which shall bring about the reduced capital-raising costs for power projects and no dependence on the Government's guarantee by way of self-funding activities.

- Mobilize more funds by issuing bonds in domestic and overseas markets to finance power projects and take measures for turning domestic savings into investment capital for infrastructure items. In the initial phase, the State shall guarantee the issuance of bonds for key/urgent power projects.

- Encourage domestic and foreign joint ventures in order to attract domestic and foreign investors who shall take part in the development of power projects, and construction of coal-import transshipment ports and infrastructure items for LNG development projects.

- Go ahead with the equitization of the power sector's SOEs in which the State's 100% capital ownership shall not be needed.

- Attract more foreign direct investment (FDI) capital for the development of power projects. Give priorities to FDI projects, which can perform settlements in local currency or in barter without government's guarantees required.

- Bring together more foreign capital sources, including: preferential and non-preferential ODA, foreign commercial loans, etc. for the development of power projects.

c) Solutions to electricity price:

- Apply the State-regulated market electricity price, ensuring the harmony between the State's political, economic and social objectives, and production/business and financial autonomy goals as set for the power sector's enterprises. The price level should be high enough to promote the power development, create an attractive environment for investments and encourage the competition in the production, transmission, distribution, retail and use of electricity.

- The electricity price should ensure cost recovery and reasonable profits (for reproduction/expansion investments) so that the financial autonomy shall be sustained among the power sector's enterprises.

- Continue to improve the current electricity tariff according to the following directions:

- + The electricity selling price shall be adjusted according to the fluctuations of fuel price, exchange rate, structure of power generation output and market price.

- + The cross-subsidy mechanism shall be gradually removed among different consumer categories and regions; seasonal and regional tariffs shall be considered and put in place.

- + Two additional components shall be incorporated in the electricity tariff, namely capacity price and power price which shall be initially applied to large customers.

- The electricity selling price should take into account the typical regional and population characteristics of borders, islands, rural/mountain areas, etc., in couple with regulated price/tax subsidies which are necessary to narrow the gaps on electricity benefits, socio-economic development and urbanization among regions and population segments, between mountainous and delta areas, as well as between rural and urban areas.

- The electricity price shall be gradually adjusted to reach the long-term marginal cost of the power system, ensuring the power sector's sustainable development and fulfillment of its investment needs for system development.



- The electricity pricing should target on energy conservation, no extravagance of non-renewable energy sources, rational use of energy, domestic energy use and less dependence on imported energy.

d) Solutions to renovated organization/management and improved efficiency of electricity activities:

- Investigate and put in place suitable models for power sector management, aiming at higher labor productivity, fast-track investment in power projects and higher reliability of power system operations.

- Perform the sector restructuring for steady development of a healthy competitive electricity market, based on guaranteed electricity supply security, reduced costs, improved efficiency of electricity production/business activities; turn on the price signals in open and transparent manner in order to attract investment and maintain the sector's sustainable development.

dd) Solutions to environmental protection:

- Realize various legal regulations on the project-related environmental impact assessment and (master) plan-related strategic environmental assessment.

- Enhance/consolidate environmental management organization by the State management agencies for environment and businesses operating in the power sector.

- Make use of the ash/slag produced by coal-fired thermal power plants for building material manufacturing and other industries in order to reduce, in accordance with regulations, the waste disposal areas in these plants.

- Properly perform the monitoring, observation, measurement and management of environmental indicators; inspect/check the implementation of environmental protection regulations by the power sector's enterprises.

- Effectively carry out electricity efficiency programs and improve the performance of production, transmission, distribution and electricity utilization.

- Ensure the coordination between power development and environmental protection:

- + The State shall introduce investment/tax support policies to encourage the development of various energy forms, which bring minimum impacts and contribute to improving the environment: new and renewable energies; utilization of agricultural/forestry residues and municipal wastes for electricity generation, etc.

- + Strict management of power generation technology from the environment perspective. The selected technologies must be advanced, good-performing and environmentally safe.

- Establish financial regulations on the power sector-related environment, and properly/adequately incorporate environment costs into the electricity investment/final price.

- Encourage large energy producers/energy-intensive enterprises to enhance their cooperation in Clean Development Mechanism (CDM) with various countries, in forms of: development of new and renewable energy sources; improved energy efficiency and development of energy conservation projects.

e) Solutions to and policies for scientific-technological development:

- Optimize, modernize and renovate electrical technology/equipment for energy development in the immediate and long term.
- Work out appropriate models and roadmaps for power-source technologies and grids, ensuring stable development and suitability for Vietnam's conditions in terms of resource potential, investment capacity, reasonable price and environmental protection.
- Newly-constructed power projects shall be required to apply modern technologies, which are suitable for Vietnam's economic conditions; gradually upgrade and refurbish existing facilities to ensure the fulfillment of technical, economic and environmental standards.
- Combine the application of new/modern technologies and calibration/improvement of existing technologies for the purpose of higher performance and energy savings.
- Encourage the application of new technologies in thermal power plants: combustion chamber, fluidized bed, supercritical/post-supercritical steam parameters, combined gas turbine cycle; and advanced waste treatment technologies, etc. for higher performance, environmental protection and smaller area for ash/slag disposal sites.
- Refurbish, upgrade and modernize the electricity transmission and distribution grids for reduced losses and guaranteed safety/reliability.
- Modernize the system for dispatch, operation, communication, control and automation for the purpose of national grid dispatches and regional connectivity.
- Gradually take measures for volunteer and mandatory technological/equipment innovation by power-intensive industries (steel, cement, chemical industries); limited and upcoming banned import of used/low-performing equipment in power production and use.

g) Solutions to human resource development:

- For activities: Set up electricity-specialized training institutions and seek to establish some institutions of international standards; and design standardized training programs for specialized disciplines.
- Put emphasis on for key industries in the areas of electricity production, transmission and distribution. Focus on training of technical workers and skilled professional staff who are capable of understanding and mastering the use of technical devices and modern technologies. Organize the training and re-training of technical workers and managers, and steadily bring training quality up to regional and international levels.
- Renovate human resource training program(s) for the power sector, diversify forms of training and ensure the concerted training and real practice; concentrate on staff recruitment and sending scientists/managers for overseas training programs in key areas. Provide additional and pioneer training for sub-sectors, which are still encountering problems of lacking and under-qualified staff, especially nuclear power and new energy sub-sectors. Introduce appropriate incentive mechanisms for attracting high-quality human resources.
- Reorganize the production model in rational and logical manner, and ensure effective labor use and better labor productivity.

h) Establishment and development of electrical engineering and localization:

- Enhance the investment in and diversification of capital sources, and attract foreign

participation in the research, design and manufacture of electrical equipment and spare parts. The producers of electrical equipment and spare parts shall strive to bring their products up to international standards.

- Formulate several complexes of research, design and manufacture of electrical equipment with mechanical manufacturing plants as key players.

- Establish modern repair/maintenance centers, which shall be capable of performing electrical equipment repair/inspection.

- Modernize the existing electrical engineering plants, expand joint ventures, construct new plants and establish the electrical equipment manufacturing zones.

i) Solutions to electricity efficiency and conservation:

- Strengthen the propaganda, dissemination and implementation of the Law on Energy Efficiency and Conservation to ensure the improved efficiency of energy in general and electricity in particular in business/production and consumption among households.

- Carry out extensively and improve the efficiency of the National Target Program for Energy Efficiency and Conservation, which targets on commercial electricity savings of more than 10% of total power consumption for 2016 - 2020 period.

**Article 2.** Responsibilities of line Ministries, localities and relevant agencies:

1. The Ministry of Industry and Trade shall:

- a) Provide periodic directions/inspections, and monitor investors/contractors and other relevant units with regard to the good progress and effectiveness of projects as approved in this Decision; report for the Prime Minister's consideration and measures for the delayed projects, which may bring substantial impacts on electricity supply.

- b) Closely monitor the electricity supply-demand and implementation schedule of power source and grid projects in order to either make decisions on the adjusted schedule of those projects that are included in the approved (master) plans or review and report for the Prime Minister's approval of incorporating new projects into the approved (master) plans or remove unnecessary projects from the approved (master) plans in accordance with the actual requirements of socio-economic development in each period.

- c) Provide guidance on the formulation, evaluation and approval of site and detailed planning for coal- and gas-fired thermal power centers, hydropower projects and terraced hydropower systems so as to call for the participation of domestic and foreign investors. Give instructions on the development and import of natural gas, LNG and coal for power generation, industrial production and other needs.

- d) Provide guidance on the establishment of coal transshipment ports and LNG-related infrastructure system, and review proposed solutions to mobilizing domestic and foreign private investment in these projects.

- dd) Take lead and coordinate with relevant line Ministries and localities in formulating and finalizing incentive mechanisms/policies for investments in the development of renewable energy projects.

- e) Take lead and coordinate with relevant line Ministries in negotiations/agreements on Vietnam's cooperation, power exchanges with neighboring countries and participation in the power connectivity system among GMS countries.

g) Give directions and push localities/investors for proper implementation of projects for power source development and grids (including rural electric grids) in accordance with the approved plan and schedule.

h) Promote the formulation and completion of necessary conditions (legal, technical infrastructure etc.) for the development of the wholesale and retail electricity market as stipulated in the approved roadmap.

i) Provide instructions on the domestic research/manufacturing of equipment items for coal-fired thermal, nuclear and hydro power projects.

k) Review and promulgate the regulations on imported coal categories and technologies applicable to coal-fired thermal power plants, thus ensuring the fulfillment of environmental standards and reduced CO<sub>2</sub> emissions.

l) Take lead and coordinate with relevant line Ministries in carrying out the 2016-2020 Program for Energy Efficiency.

m) Work with the People's Committees of provinces and centrally-run cities to reach agreements on the land fund for power projects, making sure the proper progress of these projects as indicated in the approved plan.

n) Continue with addressing various issues on: short-circuit in the electrical system; strengthened transmission grid connectivity using AC or DC transmission methods; N-1 criterion applicable to the transmission grid and proposed coverage of N-2 criterion; and enhance the angle, frequency and voltage stability of the national electrical system.

o) Promulgate the mechanism for delayed power projects.

p) Take lead in the review/proposed amendment of legal normative documents and authorization/decentralization mechanisms, and subsequent submission for the Prime Minister's decision thus facilitating the proper progress of power projects.

q) Review the trends for grid interconnections with other regional countries on the basis of higher power system reliability.

r) Organize the planning of power centers of Long An, Tân Phước and Bạc Liêu, and confirm the feasibility and necessity of power plants in these power centers.

2. The Ministry of Planning and Investment shall: develop mechanisms/policies for investment mobilization and rational use of ODA sources to facilitate the synchronous, rational, logical and sustainable development of the electricity sector.

3. The Ministry of Finance shall: take lead and coordinate with relevant line Ministries in establishing the mechanisms for investment capital mobilization for power development hence fully addressing, in timely manner, the electricity needs of the entire society in accordance with the approved Revised Master Plan VII.

4. The State Bank of Vietnam shall: provide domestic commercial banks with its guidance on the capital balance and possible loans to be granted for power project investors according to project-specific actual requirements, thus ensuring the fulfillment of the power sector's sustainable development targets.

5. The Electricity of Vietnam shall:

a) Take its key role in sustaining the stable/safe power supply for socio-economic

development cause. Carry out power source projects according to the assigned tasks; make investment in the development of synchronized power grid projects for better investment efficiency.

b) Take measures for further reduced power losses; and the electricity conservation programs in production and consumption activities.

c) Continue with better labor productivity, aiming to optimize costs in the process of electricity generation, transmission, distribution and trading.

d) For some key grid projects, ask the investors to perform the corridor demarcation as long as the project feasibility study report has been approved.

6. Vietnam Petroleum Cooperation shall:

a) Take lead in reviewing the plans for gas exploitation in Blue Whale and Block B Reserves and for rational and efficient LNG import; and report to the Ministry of Industry and Trade for consideration and subsequent submission to the Prime Minister. Make investments in power source projects according to the assigned tasks.

b) Coordinate with domestic and foreign private investors in the construction of LNG-import infrastructure.

7. Vietnam Coal - Mineral Corporation shall:

a) Take its key role in the coal supply from domestic and imported sources for power generation and other needs of the national economy. Make investments in power source projects according to the assigned tasks.

b) Coordinate with domestic and foreign private investors in the construction of LNG- coal transshipment ports.

8. The People's Committees of provinces and centrally-run cities shall:

a) Take lead in and closely coordinate with the investors in site clearance, compensation, immigration and resettlement for power source and grid projects as regulated.

b) Update and incorporate the land funds for approved power projects in the land-use planning, and disclose this information.

c) Consolidate the land management to avoid disputes/complaints which may cause prolonged confirmation of land origin, inventory, compensation plan preparation/approval, site hand-over to the investors for works construction; accelerate the schedule of surveys, preparation of unit prices and approval of compensation unit prices, thus ensuring the compensation plan approval progress and compensation payment to households.

d) Provide the relevant units with timely regulations and guidance; put in place strict penalties in case of deliberate construction/extension of houses and architectural items, tree-planting in the approved corridor for compensation purpose or refusal to compensation payment as indicated in the approved plan.

**Article 3.** This Decision shall take effect from the date of signature and replace the Prime Minister's Decision No. 1208/QĐ-TTg dated 21 July 2011 approving the National Power Development Master Plan for the 2011-2020 Period with the Vision to 2030.

**Article 4.** Ministers, Heads of Minister-level agencies, Heads of Government-dependent

agencies; Chairpersons of the People's Committees of provinces and centrally-run cities; Chairpersons of Board Members/Presidents of the Electricity of Vietnam, Vietnam Oil and Gas and Vietnam Coal - Mineral Corporation; and relevant agencies shall be responsible for executing this Decision./.

**PRIME MINISTER**

***Recipients:***

- Central Communist Party Secretariat;
- Prime Minister, Deputy Prime Ministers;
- Ministries, Ministerial-level agencies, Government-dependent agencies;
- People's Councils and Committees of provinces and centrally-run cities;
- Central Office and Committees of the Communist Party;
- Party General Secretary Office
- State President Office;
- Ethnic Minority Council and National Assembly Committees;
- National Assembly Office;
- People's Supreme Court;
- People's Supreme Procuracy;
- State Audit;
- Central Committee of Vietnam Fatherland Front;
- Central Agencies of Mass Organizations;
- General Directorate for Energy – Ministry of Industry and Trade;
- Electricity of Vietnam; Vietnam Oil and Gas and Vietnam Coal - Mineral Corporation
- National Power Transmission Corporation
- State-owned Corporation;
- Government Office: Minister-Chairperson, Vice Chairpersons, Prime Minister's Assistant, E-Portal Director, dependent Departments, Official Gazette;
- For filing: Clerical section, KTN (3 copies).

**Nguyễn Tấn Dũng**

GLZ translation for reference