

Department of Energy Policy and Planning
Ministry of Energy and Mines
Lao People's Democratic Republic

**Project for the Improvement of the
Governance Mechanism for Sustainable
Power Development Planning**

**Final Report
Appendix**

June 2013

Japan International Cooperation Agency

**Chubu Electric Power Co., Inc.
Electric Power Development Co., Ltd.**

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Appendix I



Lao People's Democratic Republic
Peace, Independence, Democratic Unity and Prosperity

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Ministry of Energy and Mines

Ref. No. : 0542/EM
Vientiane Capital City, date : 10/05/2012

Administration Decision

Minister of Energy and Mines on the Establishment and Activities of the Department of Energy Policy and Planning

- Referring to the Prime Minister Decree No. : 372/PM, dated: 21/10/2011 concerning establishment and activities of Ministry of Energy & Mines.
- Referring to the Personnel Department Application No. : 259/EM.PD, dated 08/05/2012.

Minister of Energy and Mines has issued the Administrative Decision:

Part I Location and Roles

Article 01 : Location and Roles

Department of Energy Policy and Planning (DEPP) is one of the technical departments under the organization system of the Ministry of Energy and Mines, has the role to assist the Minister of Energy and Mines in the field of policy and planning nation-wide.

Part II

Duties and Rights

Article 02 : Duties

- 2.1 Study, research and draft policy and energy development plan or amend the policy and the existing energy development plan such as: the policy and the total energy plan, which consists of the electricity energy, gasoline energy (oil, coal, gas), the renewable energy and others for middle and long term period in order to propose to the Government for consideration.
- 2.2 Disseminate policy and energy plan and environmental engineering task.
- 2.3 Study, research and draft policy concerning sustainable development of the environmental engineering for energy projects.
- 2.4 Collect, consolidate, analyze and draft statistics reports, usage, export and import of each type of energy to or from Lao PDR regularly by classification of source of production, countries that export or import, and energy volume for each usage and in each sector such as: industry, communication, agriculture, accommodation and others up to the present and in the future.
- 2.5 Study, research and propose the structure and unit price of the energy.
- 2.6 Monitor and make reports to the high level regularly and closely pay attention to supply situation where world oil price varies, especially in the Lao PDR market that is closely related to trade and in import of oil.
- 2.7 Analyze the trend and forecast oil and gas consumption demand each year.
- 2.8 Draft policy related to national oil reserve.
- 2.9 Study price structure, set oil and gas price policy that is suitable to economic conditions in each period for the country and corporate with the concerned parties of the Ministry of Industry and Trade.
- 2.10 Contact, cooperate with various organizations both domestic and international concerning oil and gas.
- 2.11 Study master plan and set feasible policy to develop nuclear energy in the future for Lao PDR. Follow-up, analyze and make a report of nuclear energy development situation in areas and regions to the high level regularly and clearly. As its duties make or become the coordination point with international organizations such as ASEAN concerning nuclear energy task.
- 2.12 Study and forecast energy demand outlook for each economic sectors of the country with being classified by periods for the future in order to make annual reports. In addition, disseminate the said forecast energy demand to various parties.
- 2.13 Set up energy balance table between supply and usage of each type of energy in each sector of the economy.

- 2.14 Coordinate all parties who have investment intension, survey and develop energy resources including transmission line and power stations for serving domestic demand and for connecting with neighboring countries.
- 2.15 Play the role of coordination point for cooperation with international energy organizations such as GMS, ASEAN, the Economic Cooperation Organization of Eravady River, the Chao Paya River and Mekong and other parties concerning the policy, strategy and the energy development plan.
- 2.16 Consolidate, report and draw-up work plans for the department for each period.
- 2.17 Forecast the future energy demand of the country.
- 2.18 Collect, consolidate and make the production statistic report on usage, export and import of each type of coal by calorific value nation-wide regularly.
- 2.19 Draft policy and mechanism to promote hydropower.
- 2.20 Draft master plan and conduct study on the feasibility of hydropower project, coal-fired power project and power projects by other sources.
- 2.21 Inspect and accept the economic and technical aspects of hydropower feasibility study report.
- 2.22 Research, give technical comments on application for, and the extension of, MOU.
- 2.23 Research, give technical comments on application for, and the extension of PDA.
- 2.24 Coordinate with the Lao National Mekong River Secretariat and the International MRC for implementing notice procedures for, and advance consultation of various agreements, especially the NPPCA in accordance with MRC Agreement in 1995.
- 2.25 Coordinate usage of water source of various rivers in Lao PDR with various parties that are involved with using the water sources.
- 2.26 Cooperate with Chinese Drawing Design Institute to set up the experiment laboratory, to make small duplicate model before actual construction of dam to supply data for construction of each dam as reference.
- 2.27 Study and draft master plan for transmission line and power station.
- 2.28 Draft and disseminate the sustainable hydropower development policy.
- 2.29 Study and find solution concerning change of water flow course, resettle fish to minimize the impact on environment and society as much as possible.
- 2.30 Study climate changes that may have impact on construction of hydropower dams.
- 2.31 Support, promote and supervise and inspect the environmental engineering of energy enterprise operators.
- 2.32 Research and give technical comments on the environmental impact assessment, the initial Environmental assessment of energy source development and the high voltage of transmission line.
- 2.33 Research structure and electricity unit price for electricity for each type of consumers.

Article 03 : Rights.

- 3.1 Set duties of each task, rights and detailed responsibility for each division of the department.
- 3.2 Propose to improve regarding the personnel structure. Propose the appointment of the head and deputy head of the division, appointment and reshuffle of duties of working units within the department.

- 3.3 Study, train, strengthen, supervise, follow-up, and inspect staff within the department. Make proposal to give praise to outstanding staff that had outperformed others and put on measure to those who violate the regulations.
- 3.4 Sign invitations that call internal meetings regarding policy and energy plans. Sign all corresponding letters directly with developers, investors and various consultants related to policy task and energy plan. Besides, has further right to sign other documents in accordance with the regulation or as assigned by the Minister of Energy and Mines
- 3.5 Call, invite and arrange meetings for consultation and solving problems regarding education tasks, survey for source, plan and energy policy with various parties both domestic and overseas.
- 3.6 Monitor and make reports to the high level regularly and closely on supply situation and change of world oil price, especially the trade market that Lao PDR has imported the oil from.
- 3.7 Analyze trend and estimate the usage of oil and gas demand each year.
- 3.8 Draft policy concerning the national oil reservation.
- 3.9 Disseminate, give advice on various policies that are involved in the energy section, the strategic energy development plan, the energy development for each period, including the national development of transmission line, the transmission line connection with domestic system and the friendly countries and others in various forms in accordance with the regulation.
- 3.10 Provide outsiders with energy data source and take charge to propose the exclusive right for projects to develop energy source.
- 3.11 Propose to improve polices that are related to energy sector, the strategy energy development plan of the sector, the energy development source for each period, master plan of energy development sources in accordance with the regulation.
- 3.12 Contact, cooperate with both internal and international organizations concerning oil and gas.
- 3.13 Study master plan and set feasible policy to develop nuclear energy in the future for Lao PDR. Follow-up, analyze and report nuclear energy development situation of areas and regions to the higher level regularly and clearly. As the duty become the coordination center point in contacting international organizations such as ASEAN concerning nuclear task.
- 3.14 Study and disseminate to project the energy demand outlook of each economic sector of the country at each period for the future as a report each year.
- 3.15 Disseminate and provide the energy balance table between the energy supply and consumption of each type in each sector of the national economic sector.
- 3.16 Draft policy and responsibility on environmental engineering and sustainable development of energy sector in coordination with various parties both domestic and overseas.

- 3.17 Collect, consolidate, supply and report production statistics, usage, export and import of coal for each type including the calorific value within the nation regularly.
- 3.18 Propose to give support to energy development source in consistency with coordination with usages of energy sources to yield the highest benefits and minimize the impact on the environment and society.
- 3.19 Proposed to the Energy and Mines Committee to consider various measures, to those companies that carry out study, survey and collection of data of energy sources as well as to those who violated the law, the articles and the regulations of energy sector.
- 3.20 Contact and coordinate with internal and international organizations concerning policy tasks and energy plans at the department level in accordance with the regulation or as assigned by the Minister of Energy and Mines.
- 3.21 Play the role of coordination center place of energy sector with international organizations such as: GMS, ASEAN, ADB, WB, JICA, IEA and others concerning drafting strategy plan, policy and energy development plan.
- 3.22 Do coordination between various users of various rivers in Lao PDR with other parties that are involved with using water sources.
- 3.23 Issue certificates of accepting the feasibility study reports.
- 3.24 Participate in negotiation of the memorandum of understanding, project development agreement, power purchase agreement and concession agreement of energy development projects with the developer both domestic and foreign in accordance with the regulation or as assigned by the Minister of Energy and Mines.
- 3.25 Participate in and follow up inspection of energy development project during construction period, and operation in accordance with the regulation or as assigned by the Ministry of Energy and Mines.
- 3.26 Coordinate and cooperate and work with international organizations in accordance with the regulation or as assigned by Minister of Energy and Mines.
- 3.27 Report to and seek directive advice and work authorization regarding policy and energy plan directly from the Minister of Energy and Mines.
- 3.28 Implement other rights as assigned by the Minister of Energy and Mines.
- 3.29 Propose the structure and electricity unit price for each type of consumers to the higher level for its consideration.

Part III

Organizational Structure and Personnel

Article 04 : Personnel structure.

- 4.1 Department of Energy Policy and Planning consists of Director General that is appointed to or dismissed from its position by the Prime Minister in accordance with proposal of the Central Party Committee based upon unanimous agreement with the Minister of Energy and Mines.
Director General of the Department has the direct responsibility to the Minister of Energy and Mines for success or failure in implementing its rights and duties as set forth in Article 2 and 3 of these articles.
Director General of the Department who sign all departments' documents, in case of absence, Director General of the Department shall temporary assign any deputy to act on his behalf.
- 4.2 Department of Energy Policy and Planning consists of some deputies who are appointed to or dismissed from position by the Minister of Energy and Mines in accordance with proposal by the Personnel Department, and based upon unanimous agreement with the Central Party Committee. Deputies are responsible for assisting Director General of the Department in advising, leading all tasks of the department and deeply responsible for certain tasks as assigned by Director General of the Department.
- 4.3 Department of Energy Policy and Planning consists of head of divisions, some Deputies which have been appointed or dismissed by the Minister of Energy and Mines, in accordance with proposal by and unanimous approval between the Department of Energy Policy and Planning and the Personnel Department, and also consists of technical staff and some administrative staff as appropriate.

Article 05 : Organizational Structure.

Department of Policy and Energy Planning consists of 5 divisions as:

- 5.1 Administration Division.
- 5.2 Energy Policy Division.
- 5.3 Electricity Generation Planning Division.
- 5.4 Power System Planning Division.
- 5.5 Environmental Engineering Division.

Article 06 : Detailed Duties of Each Division.

6.1 Administration Division

- 6.1.1 Draft annual budget plan, monitor budget spending of the department in order to make proposal to the Cabinet Office of the Ministry of Energy and Mines.
- 6.1.2 Carry out the personnel administration tasks, and receive, dispatch, manage, distribute and follow-up documents, and monitor number of personnel.
- 6.1.3 Manage and propose a personnel training plan in accordance with regulation and policy set forth by the high level.
- 6.1.4 Arrange and administer office supplies, material assets and other supplies of the department.
- 6.1.5 Carry out protocol duties and administer services as official task of the department.
- 6.1.6 Consolidate plans and make weekly, monthly, semester and annual summary reports of the department.
- 6.1.7 Draft and process documents that are related to the personnel of the department traveling to perform duty both domestically and abroad.
- 6.1.8 Contact and coordinate with regard to administration and management with various divisions of the department and outside organizations as assigned by the department.
- 6.1.9 Provide facilities and give advice to all parties that come in to contact the department.
- 6.1.10 Contact and coordinate with the locals in facilitating high authority, such as various ministry staff and all energy development project developers that implement their official task at locality.
- 6.1.11 Carry out its management task and closely follow-up usage of loan and technical assistance grant in accordance with regulations.
- 6.1.12 Collect and consolidate energy data both internal and foreign and make advice on and propaganda of various data of the department.
- 6.1.13 Establish and manage database.
- 6.1.14 Summarize activities of work, and make monthly, semester and annual budget usages reports to the Ministry regularly.
- 6.1.15 Implement other tasks as assigned by the department.

6.2 Energy Policy Division.

- 6.2.1 Study master plan and set policy of usage and development of each type of energy such as: electricity, oil, gas, coal, wind energy, solar energy and nuclear energy, in aiming to guarantee that sufficient energy is sustainable and

effective for the national economy and society for each period and has good benefits to the social-environment.

- 6.2.2 Collect, consolidate, analyze and make reports on production statistics, usage, export-import of energy of each type in Lao PDR regularly by classification of: production source, all countries that Lao has export-import relationship with and energy volume of each sector such as: industry, communication, agriculture, accommodation and others.
- 6.2.3 Follow-up and make a report to the high level regularly and closely pay attention to supply and price fluctuation of world oil, especially markets that Lao trades with.
- 6.2.4 Analyze the trend and assess the oil and gas demand each year.
- 6.2.5 Draft annual policy on the national oil reserve.
- 6.2.6 Study price structure, set oil and gas price policy as appropriately suitable with economic conditions in each period of the country, by coordination with various parties of Ministry of Industry and Trade.
- 6.2.7 Contact and cooperate with various organizations both domestic and international concerning oil and gas.
- 6.2.8 Collect, consolidate and make statistics reports regularly on nation-wide production, usage, export and import of each type of coal with information on calorific heat value of coal.
- 6.2.9 Study economic-technical feasibility study reports on survey of coal reservoir, study master plan and set policy on coal development industry, in corporation with the concerned sectors.
- 6.2.10 Study master plan and set feasible policy to develop nuclear energy in the future in Lao PDR. Follow-up, analyze and make a report on nuclear energy development situation in areas and regions to the high level regularly and clearly. Have duties to play the role of coordination place with the international organizations such as ASEAN on nuclear tasks.
- 6.2.11 Study and forecast the national energy demand outlook for each economic sector of the country for each period for the future, in order to make annual reports. At the same time, should disseminate the said forecast of the national energy demand outlook plan to various parties.
- 6.2.12 Draft energy balance table between energy supply and consumption of each type in each economic sector.
- 6.2.13 Research and make a proposal of structure and unit price of electricity for each type of electricity for the high level's consideration and acceptance.

6.3 Electricity Generation Planning Division.

- 6.3.1 Draft master plan and study feasibility of power projects
 - * Map study.

- * Meteorology and climate study.
 - * Geological study on dam base foundations.
 - * Design of projects.
 - * Economic and financial assessment of projects.
 - * Build duplicate model, CAD operation and energy simulation.
- 6.3.2 Carry out examination on feasibility study reports
- * Total volume and peak volume of water usage.
 - * Dam stability with geological conditions.
 - * Power outputs.
 - * Project costs.
 - * Comments on the feasibility study report.
 - * Issuance of a certificate for economic-technical feasibility study report.
 - * Coordination with the National Mekong River Committee, the Mekong River Committee to establish the NPPCA in accordance with the 1995 Agreement.
 - * Coordination with other parties that are related to use of water, land and other resources of project.
 - * Coordination with Chinese Design Institute to build the experiment room, duplicate dam model prior to the actual construction of dam and as a reference for providing technical data for each dam.
 - * Other implementation as assigned by the department.
 - * Technical comments on application or extension of MOU.
 - * Provision of data on technical aspect in application and extension of PDA

6.4 Power System Planning Division

- 6.4.1 Collect and analyze the concerned data
- * Collect and analyze of data and increase of population and the National GDP.
 - * Collect and analyze investment data with aiming at various economic sectors such as: industry, mines, services, agriculture, communication, accommodation and others.
 - * Forecast electricity demand of each sector as mentioned above and the gross national production for each period
- 6.4.2 Study and draft the national transmission line and station
- * Study the laneway and location of the station.
 - * Load flow analysis.
 - * Dynamic analysis.
- 6.4.3 Cooperate with GMS and ASEAN.
- * Be a member of the Working Group of GMS and ASEAN.
 - * Play the role of coordination place for RPTCC in the GMS.

- * Coordinate plan to connect the transmission line with GMS Region.
- * Improve transmission line master plan connected with GMS and ASEAN

6.5 Environmental Engineering Division.

- 6.5.1 Draft, disseminate sustainable electricity development policy.
- 6.5.2 Study, give comment on management of reservoirs of various hydropowers in Lao PDR.
- 6.5.3 Study and search for solution concerning change of water flow and transfer of fish in order to reduce impact to the environment.
- 6.5.4 Study climate change that may make impact on development of dam.
- 6.5.5 Give advice on, disseminate and expand content of regulation, and the standards regarding the environmental engineering of energy development project.
- 6.5.6 Support, promote and supervise and follow-up the environmental engineering for energy enterprise operator.
- 6.5.7 Research and give technical comment on the energy source development of IEE, EIA, including the high voltage transmission line project.
- 6.5.8 Participate in and join implementation of the energy development project in the community.
- 6.5.9 Implement other tasks as assigned by the department.

Part IV **Work Method**

Article 07: Work Method.

- 7.1 Implement one chief regime principle in accordance with diversification of management system based upon Central-Democracy principle, lead by group of committee, individuals responsible for clearly dividing work and responsibility, and assigning rights to solve problem at each level, to each individual clearly with dividing them appropriately.
- 7.2 Activity should strictly follow the directive policy of the Party, the strategy for energy development plan of the Ministry of Energy and Mines to make detailed plan of each project and orderly work plan, concentrate and learn from the past lesson.
- 7.3 Implement report regime, consultation meeting regime, inspection regime regularly, and give feedback to and seek the advice from the high level regularly.

- 7.4 Coordinate various departments under the Ministry of Energy and Mines and various organizations concerned in accordance with its responsibility to ensure that energy plan of energy sector are implemented soundly and effectively.
- 7.5 Accepted weekly feedback and hold monthly meetings within the department.

Part V

Final Provisions

Article 08: Department of Energy Policy and Planning has its own seal to serve official tasks.

Article 09 : Department of Energy Policy and Planning with all concerned parties shall acknowledge and implement these articles strictly.

Article 10 : these articles are effective immediately after duly signed and replaces all earlier agreements and decision that contradicts with these articles.

The Minister of Energy and Mines

Signed and Sealed

Soulivong Daravong



Lao People's Democratic Republic
Peace, Independence, Democratic Unity and Prosperity

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Ministry of Energy and Mines

Ref. No. : 0515/E.M
Vientiane Capital City, date : 04/05/2012.

Administration Decision

Minister of Energy and Mines on the Establishment and Activities of Department of Energy Business

- Referring to the Prime Minister Decree of No. : 372/PM, date 21/10/2011 on establishment and activities of the Ministry of Energy and Mines.
- Referring to proposal of Personnel Department No. : 246/EM.SO, date 30/04/2012.

Minister of Energy and Mines has issued the Administration Decision:

Part I General Provision

Article 01 : Objective.

This Administration Decision details a set of the concerned establishment, the roles, duties, rights, the structure and work method of the Department of Energy Business, as reference to juristic act on establishment and activities of the Department of Energy Business in aiming to defend and follow-up all of investment in all economic sectors legally implemented by energy business project in consistence with Party's Policy, regulation and law and the state strategy that are set forth from time to time.

Article 02 : Location and Roles.

Department of Energy Business (DEB), is the technical department underneath the mechanism structure of the Ministry of Energy and Mines, plays the role as the chief of staff for the Minister of Energy and Mines in administering energy business development tasks nation-wide.

Part II

Duties and Rights

Article 03 : General Duties.

- 3.1 Support various energy business investment projects that are invested by the state and private sectors both domestic and foreign as set forth in the role of the Ministry of Energy and Mines.
- 3.2 Supply and spread information and data on various projects, technical research concerning investment, analysis of benefits from economic-financial, buying-selling and energy marketing standpoints in accordance with duties and responsibilities of the Ministry of Energy and Mines.
- 3.3. Revise and give comment from technical points of view on feasibility study reports including study or study report on social-environmental, economic-technical and financial aspects including other documents that are concerned with all the entire energy business projects as set forth in the role of the Ministry of Energy and Mines.
- 3.4 Study, research and be fully in-charge of negotiation and bargaining tasks for the state benefits on energy business development projects by the state or/and private sector based upon implementation of the state policy, the regulations and laws that are laid down from time to time.
- 3.5 Research and give comments on law and agreement's obligations for investment authorization in energy business sector. Draft, negotiate and co-sign agreement of various energy business projects and then report to the high authority for directive advice or apply for authorization to the said party that has power to sign the agreement.
- 3.6 Corporate with the concerned sectors of the Ministry of Finance, Ministry of Planning and Investment and the other concerned sectors in calculating or proposing tax and tariff rate and set appropriation fees in accordance with the policy in aiming to promote energy business development in consistence with the regulation and law, and the capacity of various conditions for searching fund for each project and then report to the concerned organizations who have the right to sign the agreement.
- 3.7 Corporate with the concerned ministries and various organizations for comment to improve the law, the regulation that are related to development of energy business so that the law or the regulation will be compact, tight and transparent with aiming to attract more investments in energy sector and to persuade more fund into investment in form of using projects as guarantee.
- 3.8 Give consultation on law, finance, banking and various services system of financial institutions to the people and businessmen for correct and effective development of energy development projects.

- 3.9 Administrate and follow-up construction operation of energy business project and then submit summary of the reports to high authority from time to time concerning implementation of various signed project agreements.
- 3.10 Be the permanent secretariat for the specific committees such as: the Electricity Development Cooperation Committee, the Advisory Committee on implementation of any energy business project in each case and as the representative unit for the state in corporation with developer on the energy business project.
- 3.11 Carry out various state's rights including those in the memorandum of understanding that the Government had in relation to the developer of the energy business projects.
- 3.12 Reshuffle, train, build-up and administer the Department of Personnel in accordance with the regulations.
- 3.13 Implement other duties in accordance with the regulations and law and in accordance with assignment from high authority.

Article 04 : Rights.

- 4.1 Negotiate for the best benefit for the state from energy business development projects, based upon strict implementation of the regulations and policy set forth by the state from time to time.
- 4.2 Sign invitations to call meetings with both internal and with foreign participants, attestation letters, notify to or be notified by the co-signatory of concession agreement and sign all the corresponding letters directly with the developers, investors, contractors, lenders and various consultants. Besides, have the right to sign other documents as well as assigned by the Minister of Energy and Mines.
- 4.3 Has the full rights to make direct contact with the concerned state enterprise for facilitating of implementation task on various energy business projects.
- 4.4 Invite developers, investors, consultants, co-signed state parties with the government, international organizations to come in to explain, give data, give report, consultation and do negotiation when necessary. Accelerate the co-signed party to implement agreement and be informed of progress report of the project. Give advice to Government representative as the co-signed party for implementing the measures in amending of the agreement or/and the operation of the termination procedure as stated in the agreement.
- 4.5 Support to each project developer, cooperate with the concerned state organizations on the issue of using natural resources to the upmost and long lasting benefits to reduce the impact to the social-environment to the minimum level.
- 4.6 Enforce implementation of agreement obligation on both state and the project developer, issue acceptance documents concerning energy business project under rights and duties as stated in the agreement.

- 4.7 Represent the Ministry of Energy and Mines as witness at the memorandum of understanding signing ceremony and other agreements that are involved with the state in energy development project.
- 4.8 Corporate and work with international cooperation organizations such as: ASEAN Organization and the Lower Mekong River Committee in searching for solution method to problems that occurred during project development and then report to the high authority for approval.
- 4.9 Report to, seek directive advice from and apply for various authorizations of implementation directly to the Minister of Energy and Mines.
- 4.10 Draft and submit to the Minister of Energy and Mines for approval or give directive advice in the case of violating the agreement, law and various state regulations that are set forth from time to time.
- 4.11 Issue regulations and order to be used internally in the Department of Energy Business.
- 4.12 Implement other rights in accordance with articles set forth in the law and regulation or as assigned by the Minister of Energy and Mines.

Part III

Organizational Structure and the Personnel

Article 05 : Personnel Structure.

- 5.1 Department of Energy Business is composed of the Director General that is appointed or dismissed by the Prime Minister in accordance with proposal of the Central Party Committee based upon the fundamental agreement with the Minister of Energy and Mines. The Director General has direct responsibility to the Minister of Energy and Mines, for success or deficiency in rights and one's duties in implementation as set forth in Article 03 and Article 04 of this Administrative Decision, the Director General who sign all the various Department's documents, in case there is an obstacle or the Director General is on duty traveling far to a distant place, the Director General must assign temporarily any deputies to act on his behalf.
- 5.2 The Department of Energy Business consists of some deputies that are appointed or dismissed from position by the Minister, with proposal of the Personnel Department and base upon agreement with the Director General and also be approved by the Central Party Committee. Deputies are responsible for assisting the Director General in advising, leading all the general works of the department and specifically responsible for any task as assigned by the Director General.
- 5.3 The Department of Energy Business is also composed of division heads, some deputies of heads which are appointed and dismissed from position by the Minister in accordance with proposal of the Personnel Department, based upon agreement with the Director General.

- 5.4 Department of Energy Business is also composed of technical personnel, some administrative staff to assist administration task in accordance with the necessity demand of the task.

Article 06 : Organizational Structure.

Department of Energy Business consists of 4 Divisions such as:

- 6.1 Administration Division
- 6.2 Contraction Division
- 6.3 Project Development Division
- 6.4 Project Monitoring Division

Article 07 : Detailed duties of each division

7.1 Administration Division

- 7.1.1 Plan, arrange and administer the state annual budget, office-supply of the Department including keeping the fixed asset account.
- 7.1.2 Record income and expenditure for Department of Energy Business.
- 7.1.3 Arrange the public meetings, round-table meetings, cerebation and various seminars under the responsibility of Department of Energy Business.
- 7.1.4 Arrange schedule and consolidate all the minutes of meetings that Department of Energy Business is in charge.
- 7.1.5 Obtain traveling visa to/from abroad and ticket reservation for receiving and dispatching Lao high level officials who travel abroad and return from meetings or negotiation.
- 7.1.6 Facilitate, assist and advise investors or developers or contractors to receive the authorization or certificate of master list of import-export materials, machinery equipment, tools and the necessity of labors for implementation of project agreement between the concerned ministries and sectors.
- 7.1.7 Inspect, file, administer and make account-keeping for various imported materials, equipment, machineries, vehicles, labors and others that are concerned with construction of projects in consistence with import plan and in accordance with the actual needs from time to time.
- 7.1.8 Consolidate and writ reports on all activities of the Department of Energy Business on weekly, six months and annual basis.
- 7.1.9 Consolidate all tasks concerned with recruiting new personnel, propose promotion, raise salary, praise and make penalties.
- 7.1.10 Implement other tasks as assigned by the Department.

7.2 Agreement Division.

- 7.2.1 Give Advice on procedure of energy development projects in Lao PDR to those who visit the Department of Energy Business.

- 7.2.2 Analyze financial proposal, electricity price and various investment measures of energy business projects including benefits from the project for the Government and the society, assumption, project cost, interest rate, structures for consideration of authorization.
- 7.2.3 Propose tax rate, tariff, commission fee by reference to various appropriate promotion policies in aiming to promote investment in energy business in accordance with the Government's benefits.
- 7.2.4 Draft and negotiate the memorandum of understanding, project development agreement, concession agreement and various specific authorization for giving the organization rights to negotiate and to sign or accept.
- 7.2.5 Draft invitation letters in order for the Director General to sign to developers, investors, off-takers and other concerned parties who come in to explain or to negotiate various procedures that lead to drafting of the project agreement.
- 7.2.6 Make brief summary and analysis of all agreements and propose to the internal meetings with the concerned sectors of the Government for research, preparation, negotiation with the investors. Prepare agreement contents, points of view and reasons to defend during negotiation with investor, and documents, handouts, brief summaries and the official documents to be distributed to those who attend internal meetings and meetings with investors.
- 7.2.7 As for agreement of Lao Government or the representative of Lao Government as one party:
 - (i). Corporate with other sections and assist the Director General in negotiating with developers and investors. Inform the co-signatory each time after negotiation done and agreement amended.
 - (ii). After successful negotiation write summary reports and apply for approval from the high authority in order to give the organization power to sign agreement at appropriate time.
 - (iii). If it is necessary take signed agreement to apply for acceptance, apply for exception from National Assembly and various ministries and make explanation to the various concerned parties and follow-up the acceptance or exception from various parties.
- 7.2.8 As for agreement to which Lao Government or the representative of Lao Government is not co-signatory but which need the Government's acceptance:
 - (i). Attend meetings, discussion and negotiation with off-takers, lenders, banks, international finance institutes, consultants, contractors and independent inspectors that are related to project in each case.
 - (ii). After completion of each negotiation, make reports to the high authority for directive for the next negotiation or consideration to authorize for acceptance case by case.
- 7.2.9 Revise the harmony and the inconsistency with the Lao Government's co-signatory and with other agreements such as: power purchase agreement,

construction agreement and various financial agreements prior to proposing to the high authority to accept those agreements.

- 7.2.10 Follow-up the implementation of agreements and evaluation of meanings of signed agreements, for giving technical comments on them for the high level to consider the extension, and accelerating, re-negotiating and amending or canceling case by case.
- 7.2.11 Gather all project documents and collect all law articles, decree of the establishment of implementation on law, solution, decision, regulation of Lao PDR, the regulatory principles of the energy sector, business, finance, banking and the various governance of the surrounding countries and the international organizations as reference to obligations of law with regard to the state and private investment both domestic and foreign, the off-takers and the lenders to the projects.
- 7.2.12 Conduct operational tasks of law, agreement, juristic acts and others in accordance with advice and directive advice of the Director General.

7.3 Project Development Division.

- 7.3.1 Contact and cooperate with the local authorities to facilitate the leader level, ministry's staff, those who are interested in project development and those who are interested in construction by visit and field works.
- 7.3.2 Study and revise feasibility study reports and social-environmental impact as reference to prepare various project documents under responsibility of the Department.
- 7.3.3 Participate with technically responsible parties, social-environmental and the other concerned parties in going to the field and collecting data for project development in field during research on social-environment impact assessment.
- 7.3.4 Give comments on technical documents, social-environment documents, development documents in relation to projects for the developers and the responsible parties under the state management.
- 7.3.5 Cooperate with companies and the concerned sector to spread various project contents which are necessary for the sector, local and general community to be aware of, understand and cooperate, facilitate, support and assist for establishment of the implementation of project development plan prior to and after signing of concession agreement.
- 7.3.6 Cooperate with the various state consultation companies, make summary reports and various proposals of consultant companies for the high authority to acknowledge it or give directive advice to implement the next step.
- 7.3.7 Cooperate with other parties to assist the local organizations at the project site to solve various issues that occurred in project development such as: tasks to establish the Mobilize Settlement Committee, tasks of solving impact on social-environment aspects, prepare and resettle people and others concerning related tasks in accordance with advice or as assigned by the Director General.

- 7.3.8 Be fully in charge of drafting the schedule, contents and for the specific meeting committee (Project Advisory Committee) regularly, in three months, six months, nine months and annually.
- 7.3.9 Attend various meetings concerned with project development such as: the mobilization of resettlement committee meeting, environmental management meeting, reservoir management or meetings for water source of forest and water management, and various technical inspection committees on asset to be return back to the Government's use.
- 7.3.10 Ask for periodical reports concerning various development activities of various projects, already based on signed project memorandum of understanding, development agreement and concession agreement between the Government and developer to be used as reference writing progress reports for each project regularly, monthly, in three months, six months and annually for the Department.
- 7.3.11 Follow-up field works during construction period from time to time and regularly.
- 7.3.12 Implement other tasks and attend various negotiation meetings in accordance with assignment by the Director General.

7.4 Project Monitoring Division

- 7.4.1 Follow-up implementation of various projects that have been officially constructed during the entire concession operation period.
- 7.4.2 Follow-up and create the harmonized statistics among design, implementation stage of operation, mobilization and arrangement for training of new job for those who are affected from the project.
- 7.4.3 Consolidate and build up the database for each project such as: volume of fuel that is used each year, power generation in each season, precipitation, water discharge from reservoir, collected revenue for each project, and follow-up the power sales for each season's generation.
- 7.4.4 Create and improve database, website system of the Department and the various publicity tasks.
- 7.4.5 Corporate with project companies operating power stations for monitoring and write report for the improvement of operation and maintenance of the projects.
- 7.4.6 Persuade those responsible parties in the task of solving environment problems, and develop new occupations for those who are affected in the protect areas.
- 7.4.7 Make the field visit to the project sites periodically.
- 7.4.8 Corporate with the concerned state parties and project companies to set up technical meetings to discuss, consult in case where there is a problem that occurred during project operation in order to seek a way to solve or propose to the high level for consideration based upon the articles in the agreements.

- 7.4.9 Corporate with international organizations that are involved in projects in order to follow-up activities including those who are not under the Government's responsibility in order to report to and inform the high authority regularly.
- 7.4.10 Join cooperative activities with sub-region countries of the Lower Mekong River, the ASEAN Communities and corporate similarly for bilateral tasks with more parties including international organizations.
- 7.4.11 Implement other tasks in accordance with the regulations and laws or as assigned by the Department.

Part IV

Work Method

Article 08 : Work Method.

- 8.1 Implement one chief regime principle in accordance with diversification of management system based upon Central-Democracy principle, lead by group of committee, individuals responsible for clearly dividing work and responsibility, and assigning rights to solve problem at each level, to each individual clearly with dividing them appropriately.
- 8.2 Activity should strictly follow the directive policy of the Party, the strategy for energy development plan of the Ministry of Energy and Mines to make detailed plan of each project and orderly work plan, concentrate and learn from the past lesson.
- 8.3 Implement report regime, consultation meeting regime, inspection regime regularly, and give feedback to and seek the advice from the high level regularly.
- 8.4 Coordinate various departments under the Ministry of Energy and Mines and various organizations concerned in accordance with its responsibility to ensure that energy plan of energy sector are implemented soundly and effectively.
- 8.5 Accept weekly feedback and hold monthly meetings within the department.

Part V

Final Provisions

Article 09 : Department of Energy Business has its own stamp to serve official purposes.

Article 10 : Department of Energy Business with all concerned parties shall acknowledge and implement these articles strictly.

Article 11 : This Decree is effective from the day duly signed onward and replaced the Decree No. : 396/EI, dated 19/09/2006.

The Minister of Energy and Mines

Signed and Sealed

Soulivong Daravong



Lao People's Democratic Republic
Peace, Independence, Democratic Unity, and Prosperity

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Ministry of Energy and Mines

Ref. No. : 0641/EM
Vientiane Capital City, date : 10/05/2012

Administrative Decision

Minister of Energy and Mines on the Establishment and Activities of the Department of Energy Management

- Referring to the Prime Minister Decree No. : 372/PM, dated 21/10/2011 on the Establishment and Activities of the Ministry of Energy and Mines
- Referring to the Personnel Department's application No. 219/EM.PD, dated 08/05/2012.

Minister of Energy and Mines has issued the Administrative Decision:

Part I Location and Roles

Article 01 : Location and Roles

Department of Energy Management is the technical department under the mechanism system of the Ministry of Energy and Mines, and is hereinafter referred to as Department of Energy Management (DEM) and plays the role of responding to questions by the Minister of Energy and Mines about state management concerning the energy industry sector. The Department of Energy Management is responsible for, in accordance with its duties and rights, implementation of the macro-economic level state management such as management, monitoring, inspection and examination of the energy business and energy activities, as an engineer to follow-up and inspect construction and operation of energy development projects, promotion and management of supply, distribution, services and energy utilization in consistent with the

technical standards, effectiveness, saving and safety in accordance with the laws and regulations concerned.

Part II

Duties and Rights

Article 02 : General Duties

In the administration and management for examination, inspection, support and promotion to the energy development projects, the Department of Energy Management has the following duties:

- 2.1 Study, research and draft energy law, improve or build regulations, technical standards, safety rules, efficiency and energy conservation standard, and other rules, guidelines and regulations that are related to the administration and management of generation, transmissions, distribution, usage and services, competition and others in relation to the energy business operations.
- 2.2 Study, formulate and improve electricity tariffs structure on generation, transmission, distribution, electricity services and electrical equipments.
- 2.3 Promote and monitor supply, distribution, services and energy usages in accordance with the technical standards, effectiveness, energy saving and safety.
- 2.4 Manage, monitor and inspect the energy enterprise operator including state and private's activities who must act in conformity with the rules and regulations concerned.
- 2.5 Be a member of the Administration Committee and the Advisory Committee for Energy Development during construction and operation stage of projects.
- 2.6 As the GOL engineers in administration and management, monitor and inspect energy development operations including the both state enterprises and private sector; and dispatch technical engineers to the sites during the construction stage of the electricity development project.
- 2.7 Study and research regulations formulation in the electricity generation about various kind of dams that shares water utilization in order to guarantee electricity generation during both the dry and rainy seasons.
- 2.8 Manage, monitor, inspect and test electricity appliances and electrical facilities produced domestically or imported from abroad.
- 2.9 Manage, monitor, and inspect energy usage in order to praise outstanding energy enterprises, factories and buildings that use energy effectively and save energy.
- 2.10 Inspect technical check of qualification of oil and gas that are imported or produced in Lao PDR.
- 2.11 Research and give comment to the feasibility study of power project

- 2.12 Accept design and issue completion certificate to construction of electricity projects that serve for domestic and export purposes in conformity with the Lao Electric Power Technical Standards
- 2.13 Research, consider and examine proposal to develop electricity generation projects, monitor and inspect production of electricity, transmission line, substation, distribution lines and electrical equipment in consistence with the technical standard and safety.
- 2.14 Issue licenses, extend, suspend, and stop energy business operation.
- 2.15 Play a role of coordinator of regulation, management and energy efficiency and conservation with international organizations such as ASEAN, GMS, WB and ADB.
- 2.16 Jointly negotiate the Memorandum of Understanding, Project Development Agreement, Power Purchase Agreement, Concession Agreement and other agreements concerning the energy development project both domestically and abroad in accordance with duties and rights or as assigned by the Minister of Energy and Mines.
- 2.17 Participate in signing of the agreement or represent GOL to sign agreement with energy project developers for the transmission line extension projects, distribution line projects, transformer projects, low-voltage and substation projects in accordance with rights and duties or as assigned by the Minister of Energy and Mines.
- 2.18 Contact and coordinate parties concerned, both domestically and abroad concerning task of administration and management of energy enterprise for seeking fund to develop legislation for energy management.
- 2.19 Take the initiative or coordinate the others concerned to carry out study, aiming to solve various business operation issues and energy consumer issues.
- 2.20 Establish database and energy management.
- 2.21 Give technical comments, technology services and necessary data and information concerning energy management in accordance with the relevant regulations.
- 2.22 Make propaganda for and disseminate the legislation concerned to the individuals or legal entities to manage, support and promote energy development in various forms.
- 2.23 Draw-up plan, budget managerial expenditure and supervise assets of the department.
- 2.24 Assign, reshuffle, train, build up and supervise staff personnel of the department in accordance with the relevant regulations.
- 2.25 Make summary report concerning the department's activities in each period to the Ministry regularly.
- 2.26 Implement other task as assigned by high level personnel.

Article 03 : Right

In administering, managing, monitoring inspecting, controlling, supporting and promoting the energy development project, the Department of Energy Management has the primary rights as below:

- 3.1 Set various duties, tasks, rights and detailed responsibilities to each division within its department.
- 3.2 Propose to improve, restore the personnel structure of the department, and propose to appoint division heads and deputies, appoint and reshuffle duties of units within the department.
- 3.3 Study, strengthen, supervise and use staff-personnel within the department, monitor, research and propose to give praise to those who showed outstanding performance in management of energy or put discipline on those who violated the regulations.
- 3.4 Sign official documents that are related to management, monitoring and inspection of energy activities in accordance with its right and role, or as assigned by the Minister of Energy and Mines.
- 3.5 Call, invite developers both from domestically and abroad including state, state enterprise and private enterprise for consultation and arrange a meeting concerning management and solution of various issues related to energy business operations.
- 3.6 Issue licenses, extend, suspend, stop carrying out the energy business operation in accordance with the regulations and the law set forth.
- 3.7 Disseminate, advice on legislations, procedure, articles and regulations that are related to the managing energy activities.
- 3.8 Propose to improve the law, technical standard, procedure, articles, regulations that are related to management of energy activities.
- 3.9 Support, promote and monitor those who are related to energy project development such as: producer, deliverer, distributor and energy consumer to make them closely cooperate with each other for sustainable development.
- 3.10 Propose to the Ministry of Energy and Mines to consider using various measures, toward those various business operators and energy consumer that violated the law, articles and various regulation of the energy sector or to those who do not implement in accordance with their right that are set forth in various agreements concerning survey, design, construction, installation, generation, transmission, distributions, services and energy consumers.
- 3.11 Contact and coordinate parties both domestic and foreign concerning management at its level in accordance with regulations or as assigned by the Minister of Energy and Mines.
- 3.12 Research and give technical comment on the draft of project development agreement, power purchase agreement, concession agreement or other agreements concerning energy development project both domestic and foreign.

- 3.13 Participate in negotiation of the memorandum of understanding, project development agreement, power purchase agreement, concession agreement and others concerning energy development project both domestic and foreign in accordance with its rights and duties or as assigned by the Minister of Energy and Mines.
- 3.14 Attend signing of agreement or as a representative sign agreement with energy project developer with regard to high voltage transmission lines, medium voltage, transformers, low voltage transformers and substation project in accordance with its rights and duties or as assigned by the Minister of Energy and Mines.
- 3.15 Research and give technical comments on feasibility study reports.
- 3.16 Issue acceptance certificate for basic design of the electricity development projects, issue project completion certificate on the electricity development projects to serve domestic and export demand in accordance with procedure and the Lao Electric Power Technical Standard.
- 3.17 Participate in as a member in Administrative Committee during project construction and operation stage.
- 3.18 Manage, monitor, construct, inspect and operate energy development projects including state projects, state enterprise and private enterprise projects and dispatch technical staff to the project site during the construction period.
- 3.19 Research and consider proposal of development of, and monitor and inspect construction of dams for hydropower generation, power plants, transmission lines, substations, distribution lines and electrical equipment in accordance with electricity technical standards and safety standards.
- 3.20 Research and establish regulations on energy generation from dams whose water is jointly used in order to guarantee energy generation during dry and rainy seasons.
- 3.21 Corporate with regard to regulation, management and energy efficiency and conservation with the international organizations such as: ASEAN, GMS WB and ADB.
- 3.22 Manage, monitor, inspect and test power facilities or electricity compliances that are produced domestically or imported from abroad.
- 3.23 Examine, inspect technical quality of oil and gas that are imported or produced in the Lao PDR.
- 3.24 Promote and manage supply, distribution, services and energy consumption to make them comply with technical standards, safety, effectiveness and energy saving.
- 3.25 Issue certificate to administrators or managers of factories or buildings that use energy effectively, save energy, and issue trade-mark for energy saving.
- 3.26 Manage, monitor, inspect and check usage of energy in order to give award for outstanding energy saving to enterprises, factories or buildings that use energy effectively and save energy.
- 3.27 Coordinate or work with international organizations in accordance with its rights and duties or as assigned by the Minister of Energy and Mines.

- 3.28 Report, seek directive advice and apply for work authorizations concerning management of energy activities.
- 3.29 Appoint or propose to appoint personnel within the department to carry out task in accordance with rights that are within its responsibilities.

Part III

Organizational Structure and Personnel

Article 04 : Personnel Structure.

- 4.1 Department of Energy Management consists of the Director General who is appointed or dismissed from its position by Prime Minister in accordance with proposal of Central Party Committee based upon the unanimous agreement with the Minister of Energy and Mines.
Director General of the Department is responsible directly to the Minister of Energy and Mines for successful or fairer implementation of its rights and duties that are set forth in Article 2 and 3 of these articles.
Director General of the Department who signs all departments' documents, in case of absence, Director General of the Department shall temporary dedicates its power to any deputy who acts on his behalf.
- 4.2 Department of Energy Management consists of some deputies that are appointed or dismissed from its position by the Minister of Energy and Mines in accordance with the Personnel Department's proposal, based upon unanimous agreement with Central Party Committee. Deputies are responsible for assisting the Director General of the Department in advising and leading all general tasks of the department and is deeply responsible for any particular task as assigned by the Director General of Department.
- 4.3 Department of Energy Management consists of heads of divisions, their deputies who are appointed or dismissed by the Minister of Energy and Mines in accordance with proposal of Personnel Department, and also consists of staff and some administrators as appropriate.

Article 05 : Organizational Structure.

- 5.1 Administration Division.
- 5.2 Energy Enterprise Management Division
- 5.3 Power Export Project Management Division
- 5.4 State-Owned Enterprises Management Division

Article 06 : Detailed duties of each division

6.1 Administration Division.

- 6.1.1 Draft annual budget plan, monitor budget spending of the department in order to make proposal to the Cabinet Office of the Ministry of Energy and Mines.
- 6.1.2 Carry out the personnel administration tasks, and receive, dispatch, manage, distribute and follow-up documents, and monitor number of personnel.
- 6.1.3 Manage and propose a personnel training plan in accordance with regulation and policy set forth by the high level.
- 6.1.4 Arrange and administer office supplies, material assets and other supplies of the department.
- 6.1.5 Carry out protocol duties and administer services as official task of the department.
- 6.1.6 Consolidate plans and make weekly, monthly, semester and annual summary reports of the department.
- 6.1.7 Draft and process documents that are related to the personnel of the department traveling to perform duty both domestically and abroad.
- 6.1.8 Contact and coordinate with regard to administration and management with various divisions of the department and outside organizations as assigned by the department.
- 6.1.9 Provide facilities and give advice to all parties that come in to contact the department.
- 6.1.10 Contact and coordinate with the locals in facilitating high authority, such as various ministry staff and all energy development project developers that implement their official task at locality.
- 6.1.11 Carry out its management task and closely follow-up usage of loan and technical assistance grant in accordance with regulations.
- 6.1.12 Collect and consolidate energy data both internal and foreign and make advice on and propaganda of various data of the department.
- 6.1.13 Establish and manage database.
- 6.1.14 Summarize activities of work, and make monthly, semester and annual budget usages reports to the Ministry regularly.
- 6.1.15 Implement other tasks as assigned by the department.

6.2 Energy Enterprise Management Division.

- 6.2.1 Study, research, establish or improve the articles and various regulations that are related to management of private enterprise's tasks.

- 6.2.2 Study, research, and make manual, advice, article, regulations and various technical standards concerning equipment, electrical appliance and effective usage of energy, energy saving, safety exactly in accordance with the technical standard.
- 6.2.3 Manage, follow up and inspect those who operate energy enterprise of private sector with regard to whether it is consistent with the set article and various regulations concerning energy enterprise operations of the energy sector.
- 6.2.4 Research, consider and issue authorization and extend, suspend, stop energy business operations.
- 6.2.5 Research and give technical comments on electricity network expansion of the medium and low voltage system, including follow-up inspection of construction of electricity network system of the private companies with regard to whether it correctly follows electricity technical standard.
- 6.2.6 Manage, monitor, inspect and test power facilities and electricity compliances that are produced domestically or imported from abroad.
- 6.2.7 Examine, inspect technical quality of oil and gas that are imported or produced in the Lao PDR.
- 6.2.8 Promote, follow-up, inspect and check saving and effective usage of energy for the industries, buildings, household and others.
- 6.2.9 Coordinate with concerned parties to set the middle price of various electrical appliances appropriated between supplier and consumer.
- 6.2.10 Play a role of the coordination point on regulations, management and energy efficiency and conservation with various international organizations such as: ASEAN, GMS, WB and ADB.
- 6.2.11 Participate in negotiation of the memorandum of understanding and other agreements concerning expansion of electricity network system in accordance with regulations or as assigned by the department.
- 6.2.12 Implement propaganda, technical training and various regulations that are related to administration, management of energy business and more efficient energy usage, energy saving and safely usage of energy in factories, buildings and accommodations.
- 6.2.13 Research and consider on issue of trade-stickers on the electrical equipment and factories, buildings and accommodations that use energy efficiently and save energy.
- 6.2.14 Coordinate with the concerned sectors for researching and considering solving various problems in operating of energy enterprise of private sector.
- 6.2.15 Report to seek advice and apply for authorization from the department for all works concerning administration and management of private sector.
- 6.2.16 Implement other tasks as assigned by the department.

6.3 State Owned Enterprises Management Division.

- 6.3.1 Study, research, improve or set articles and various regulations that are related to administration and management of state owned enterprises.
- 6.3.2 Study, research, improve and give advice on or set articles, regulation or the standards of energy management in such fields as: generation, transmission, distribution, services and energy use.
- 6.3.3 As GOL engineer in administration-management, make follow up inspection of construction and operation of energy development project of state owned enterprises and the private energy development projects that serve internally in accordance with its level and in accordance with regulations or as assigned by the department.
- 6.3.4 Assign staff to the project site during construction period of the electricity development project.
- 6.3.5 Manage, follow up, or inspect whether energy enterprise operation of state owned enterprise is consistent with articles and various regulations concerning energy enterprise operation of the energy sector.
- 6.3.6 Promote, manage, follow up, inspect and check generation, transmission, distribution, services and energy usage correctly in accordance with the technical standard, efficiency, energy saving and safety.
- 6.3.7 Research and give technical comment on proposal of construction of transmission lines system, substation, in medium and low voltages including inspection of construction by state owned enterprises or private enterprises in accordance with the electric power technical standard.
- 6.3.8 Support, manage, follow up, inspect on demand side management.
- 6.3.9 Research, give technical comment on, follow up construction and issue certificate for basic design before construction project development and issue certificate of completion of construction prior to generation and management for operation of the state owned enterprises and private projects that supply domestically.
- 6.3.10 Study, research and give technical comments concerning the draft of the Project Development Agreement, the Concession Agreement and other agreements concerning energy development project of state owned enterprises and private electricity projects that serve internally in accordance with regulation or as assigned by the department.
- 6.3.11 Participate in negotiation of memorandum of understanding, project development agreement, concession agreement and others concerning energy development projects of state owned enterprises and private projects that serve internally in accordance with regulation or as assigned by the department.

- 6.3.12 Play a role of coordinator as a regulator with international organizations such as: ASEAN, GMS, WB, ADB.
- 6.3.13 Contact and coordinate all parties concerning task of the management of state owned enterprises, private enterprises to seek of fund in accordance with regulations or as assigned by the department.
- 6.3.14 Coordinate the concerned sectors in order to research, considering solving problems in operations of state owned energy enterprises, private and energy consumers.
- 6.3.15 Support, promote the state owned enterprises of energy development project such as: producer, deliverer, distributor and energy consumer for sustainable development.
- 6.3.16 Study, research and set regulations on electricity generation from the dams which water is used jointly to ensure energy generation in both dry and rain seasons.
- 6.3.17 Advise on, disseminate guidelines, regulations and technical standards in managing energy and using energy safely and effectively, and saving energy.
- 6.3.18 Build technical database concerning generation and operation project development that serve internally.
- 6.3.19 Report for seeking directive advice and apply for authorization from the department for various work authorization concerning management of state owned enterprises and private projects that serve internally.
- 6.3.20 Implementation of other task as assigned by the department.

6.4 Power Export Project Management Division

- 6.4.1 Study, research, establish and improve the Lao Electric Power Technical Standards (LEPTS) and regulations in order to be involved in management and inspection of energy development projects for export.
- 6.4.2 As the GOL Engineer in order to manage and inspect construction and operations of energy development project for export in accordance with regulations and assigned by the department.
- 6.4.3 Provide technical staff to the project site during construction period of the project development.
- 6.4.4 Research, provide technical comments on the feasibility study report and issue certificate of acceptance for the basic design of project development of private sector for export in accordance with the Lao Electricity Technical Standards as set forth.
- 6.4.5 Research and provide technical comments and issue completion certificate for construction of the electricity development project of private sector for

- exporting in accordance with procedure of the Lao Electricity Power Technical Standards as set forth.
- 6.4.6 Research and provide technical comment on transmission lines system and substation projects in order to monitor and inspect the electricity project for exporting in accordance with the technical standards.
 - 6.4.7 Coordinate the concerned sectors to study, consider solving problems in private enterprise operation for export.
 - 6.4.8 Contact and coordinate internal and foreign enterprises concerning private management for export in accordance with regulations or as assigned by the department.
 - 6.4.9 Study, research and provide technical comment concerning the Project Development Agreement, the Concession Agreement and other agreements concerning private energy development project for exporting in accordance with regulations or as assigned by the department.
 - 6.4.10 Participate in negotiation of Memorandum of Understanding, Project Development Agreement, Concession Agreement and other agreements concerning private energy development project for export -in accordance with regulation or as assigned by the department.
 - 6.4.11 Study, research and set regulation on electricity generation from dams which water are jointly used in order to ensure electricity generation in both dry and rainy seasons.
 - 6.4.12 Establish technical database in generation and operation of electricity development project for export.
 - 6.4.13 Disseminate guidance, rules, regulations and procedures related to private management for export.
 - 6.4.14 Coordinate and closely cooperate with international organizations in accordance with regulations or as assigned by the department.
 - 6.4.15 Report on seeking advice and apply for authorization of implementation of tasks concerning private management for export
 - 6.4.16 Implementation of other tasks as assigned by the department.

Part IV

Work method

Article 07 : Work Method.

- 7.1 Implement one chief regime principle in accordance with diversification of management system based upon Central-Democracy principle, lead by group of committee, individuals responsible for clearly dividing work and responsibility, and

assigning rights to solve problem at each level, to each individual clearly with dividing them appropriately.

- 7.2 Activity should strictly follow the directive policy of the Party, the strategy for energy development plan of the Ministry of Energy and Mines to make detailed plan of each project and orderly work plan, concentrate and learn from the past lesson.
- 7.3 Implement report regime, consultation meeting regime, inspection regime regularly, and give feedback to and seek the advice from the high level regularly.
- 7.4 Coordinate various departments under the Ministry of Energy and Mines and various organizations concerned in accordance with its responsibility to ensure that energy plan of energy sector are implemented soundly and effectively.
- 7.5 Accept weekly feedback and hold monthly meetings within the department.

Part V

Final Provisions

Article 08 : Department of Energy Management has its own stamp to serve official purposes.

Article 09 : Department of Energy Management with all concerned parties shall acknowledge and implement these articles strictly.

Article 10 : These articles are effective immediately after duly signed and replaces all earlier agreements and decision that contradicts with these articles.

The Minister of Energy and Mines

Signed and Sealed

Soulivong Daravong



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Ministry of Energy and Mines

Ref. No. : 0543/EM
Vientiane Capital City, date : 10/05/2012

Administration Decision

Minister of Energy and Mines on the Establishment and the activities of the Institute of Renewable Energy Promotion

- Referring to the Prime Minister Decree No. : 327/PM, date 21/10/2011 on the establishment and the activities of the Ministry of Energy and Mines
- Referring to the Personnel Department's application proposal No.: 270/EM.PD, date : 08/05/2012

Minister of Energy and Mines has issued the Administration Decision:

Part I Location and Role

Article 01 : Location and Roles.

Institute of Renewable Energy Promotion (**IREP**) is the institute for promotion and technology management in the established system of the Ministry of Energy and Mines that has the role to assist the Minister of Energy and Mines at the area of promotion, development of renewable energy, energy saving and effective use of energy nationwide.

Part II

Duties and Rights

Article 02 : General Duties.

- 2.1 Implement the strategy of Lao Renewable Energy Policy and make it become reality in accordance with the Government as set forth in directive.
- 2.2 Promote and Develop renewable energy:
 - 2.2.1 Promote and develop small electricity productions for connection with transmission line network or for specific usage that has installed capacity equal to or less than 15 MW.
 - 2.2.2 Promote and develop heat energy for industry, community and family use.
 - 2.2.3 Promote and develop bio-diesel, biogas and others.
 - 2.2.4 Establish the experiment and learning center and services to the people and implement pilot projects of renewable energy.
 - 2.2.5 Give advice, make manuals about production and usage, give trainings and strengthen staff concerning renewable energy.
- 2.3 Promote and develop Rural Electrification:
 - 2.3.1 Build, improve and implement master plan for rural electrification projects.
 - 2.3.2 Promote, develop, monitor, inspect and manage off-grid projects.
 - 2.3.3 Promote, develop, monitor, inspect and manage rural electrification projects, including operations of pilot projects in rural areas.
 - 2.3.4 Create manuals and give advice on electricity usage safety.
 - 2.3.5 Give training on how to use and maintain various types of small electricity system in rural areas.
- 2.4 Promote to conserve energy and save energy:
 - 2.4.1 Build and develop regulations, advisory, manual concerning conservation and energy saving with regard to non-hydropower energy (heat energy from sun, biomass and others).
 - 2.4.2 Promote usage of effective and safe stove, and develop production of such stove.
 - 2.4.3 Build and implement pilot projects for energy conservation.
 - 2.4.4 Contact and join together with other concerned parties both domestic and international, in order to promote clean development mechanism and climate change adaptation.
 - 2.4.5 Give training and build awareness concerning energy conservation.
- 2.5 Management, Administration, Information, Data on Renewable Energy
 - 2.5.1 Build and improve database on renewable energy and rural electrification.

- 2.5.2 Strengthen the locality in collecting data and building database.
 - 2.5.3 Build database network on renewable energy and rural electrification.
 - 2.5.4 Search for fund for usage and sound management of rural electrification effectively.
 - 2.5.5 Execute, document and draw-up plan, budget and materials for the management of the institute.
 - 2.5.6 Submit summarize reports concerning work activities of the institution from time to time to the Ministry of Energy and Mines regularly.
- 2.6 Other Miscellaneous.
- 2.6.1 Participate and join together with concerned parties in research, and set price policy of the renewable energy such as solar energy price, wind energy price, bio-fuel price and biomass price.
 - 2.6.2 Give comments for improving of policy and strategy, develop renewable energy plan, law, procedures and so forth, various regulation of energy division and others in order to promote investment in the renewable energy, promote rural electrification and promote energy conservation and efficiency.
 - 2.6.3 Contact and join together with ministries, organizations and the concerned localities for following up and inspecting development of renewable energy projects, promoting rural electrification and the energy saving in accordance with the set forth regulation or as assigned by the Minister of Energy and Mines.
 - 2.6.4 Give technical comments on investment, analyze benefits on feasibility study, environment, finance and domestic energy market, promote and develop renewable energy, rural electrification and energy saving in accordance with the regulations.
 - 2.6.5 Study, collect data and build database, disseminate and give advice on the concerned data, information, news on renewable energy, promotion and development of rural electrification and energy saving.
 - 2.6.6 Contain, reshuffle, train, replenish and manage staff personnel of the institute in accordance with the regulations.
 - 2.6.7 Provide technical services and some necessary information concerning renewable energy task, renewable energy to serve rural areas and energy saving in accordance with the regulations.
 - 2.6.8 Join in and cooperate with international financial organizations on the renewable energy, selected energy, rural electrification development, and be the central contact point for renewable energy, energy saving and others as assigned by the Minister of Energy and Mines.
 - 2.6.9 Implement other tasks as assigned by the high level.

Article 03 : Rights.

- 3.1 Set various work duties, rights and detailed responsibilities of various divisions of the institution.
- 3.2 Propose to improve established mechanism of the institute, propose to appoint division heads and deputy division heads, and appoint and reshuffle duties at each level starting from working units within the institution.
- 3.3 Train, replenish, supervise and manage staff personnel within the institution. Monitor, inspect and research policy on praising those staff that show outstanding performances and put on discipline those who commit wrongdoing in accordance with the regulations.
- 3.4 Sign all official documents, give notice and collect data concerning promotion of renewable energy development, renewable energy to serve rural areas and energy saving in accordance with its role or as assigned by the Minister of Energy and Mines.
- 3.5 Disseminate and advice on data, news, various activities, procedures, other regulations and so forth that are related to administration and management of renewable energy to serve rural areas and energy saving.
- 3.6 Propose to improve various activities, technical standard, procedures, various regulations and so forth and that are related to management of usage of renewable energy to serve rural areas and energy saving.
- 3.7 Give support to investors in renewable energy development projects, renewable energy to serve rural areas and energy saving that have incorporated usage together with resources up to the most benefits, along with minimizing impact to environment and society to the best minimized level.
- 3.8 Propose to the Energy and Mines Committee to consider various measures, to those companies that operate renewable energy projects to serve rural areas and energy saving as well as those who had violated the regulations and law and so forth, various regulations of the energy division or neglect to implement their duties as set forth in the various agreements.
- 3.9 Contact jointly with various concerned parties, both domestic and foreign that are related to work of renewable energy development, promote development of rural electrification to serve rural areas and energy saving at the institution level in accordance with the regulations or as assigned by the Minister of Energy and Mines.
- 3.10 Visit the field and give technical advice to the renewable energy development projects to serve rural areas and energy saving during the implementation of pilot projects until the operation period starts.
- 3.11 Incorporate and make cooperation work with international organizations in accordance with the regulation or as assigned by the Minister of Energy and Mines.
- 3.12 Report, seek advice and apply for authorization to implement various tasks concerning administration and management of renewable energy to serve rural areas and energy saving to or from the Minister of Energy and Mines.

Part III

Organizational Structure and Personnel

Article 04 : Personnel Structure.

4.1 The Institute of Renewable Energy Promotion consists of the Director General that is appointed or dismissed by the Prime Minister in accordance with proposal of Central Party Committee, based upon unanimous agreement with the Minister of Energy and Mines.

Director General is responsible directly to the Minister of Energy and Mines for successful or fairer implementation of its rights and duties that are set forth in Article 2 and 3 of these articles.

Director General who signs all departments' documents, in case of absence, Director General shall temporarily dedicate its power to any deputy who acts on his behalf.

4.2 The Institute of Renewable Energy Promotion consists of some deputies that are appointed or dismissed from its position by the Minister of Energy and Mines in accordance with the Personnel Department's proposal, based upon unanimous agreement with Central Party Committee. Deputies are responsible for assisting the Director General in advising and leading all general tasks of the department and is deeply responsible for any particular task as assigned by the Director General.

4.3 The Institute of Renewable Energy Promotion consists of heads of divisions, their deputies who are appointed or dismissed by the Minister of Energy and Mines in accordance with proposal of Personnel Department, and also consists of staff and some administrators as appropriate.

Article 05 : Establishment of Structure.

The Institute of Renewable Energy Promotion consists of 4 divisions as :

- 5.1 Administration Division
- 5.2 Renewable Development Division
- 5.3 Rural Electrification Division
- 5.4 Energy Efficiently and Conservation Division

Article 06 : Detailed Duties of each Division.

6.1 Administration Division

- 6.1.1 Draw up annual budget, monitor, manage and use the institute's budget to be submitted to the Administration Office of the Ministry of Energy and Mines.

- 6.1.2 Carry out the personnel administration tasks, and receive, dispatch, manage, distribute and follow-up documents, and monitor number of personnel.
- 6.1.3 Manage and propose a personnel training plan in accordance with regulation and policy set forth by the high level.
- 6.1.4 Arrange and administer office supplies, material assets and other supplies of the department.
- 6.1.5 Carry out protocol duties and administer services as official task of the department.
- 6.1.6 Consolidate plans and make weekly, monthly, semester and annual summary reports of the department.
- 6.1.7 Draft and process documents that are related to the personnel of the department traveling to perform duty both domestically and abroad.
- 6.1.8 Facilitate and give advice to those who contacted with the institute about its work.
- 6.1.9 Contact and coordinate with the locals in facilitating high authority, such as various ministry staff and all energy development project developers that implement their official task at locality.
- 6.1.10 Contact and cooperate with the concerned parties related to the institution both domestic and abroad in accordance with the regulations or as assigned by the high level.
- 6.1.11 Carry out its management task and closely follow-up usage of loan and technical assistance grant in accordance with regulations.
- 6.1.12 Consolidate renewable energy statistic data, renewable energy to serve the rural areas, rural electrification and the country energy saving plan and advice, disseminate and provide the various data services of the institution.
- 6.1.13 Make summary reports concerning activities of the institution from time to time to the Ministry regularly.
- 6.1.14 Play a role of the Secretariat Office for fund according to the assigned task:
 - * Build and set actual documents and mechanism for setting up the Renewable Energy Fund.
 - * Study activities plan, annual income-expenditure plan and technical standards, to propose to the Consultation Counsel Fund Committee and the Broad of Executive Fund Managers Committee for consideration and approval.
 - * Execute the fund in accordance with the procedure as set forth in various regulations that the institute has officially authorized.
 - * Prepare all documents concerning agreements and signed project documents on various projects prior to proposal to the Broad of Executive Fund Managers Committee to sign, together with Electricite Du Laos and

other individuals in accordance with approval of the Consultation Fund Counsel.

- * Implement tasks, follow-up and monitor for collecting fund to the institute.
- * Prepare monthly, bi-annual and annual reports to the Executive Manager of Fund Committee and the Fund Consultation Counsel.
- * Carry out other tasks as assigned by the institution.

6.2 Renewable Energy Division.

- 6.2.1 Draft and amend laws on renewable energy, technical standards, procedure, regulations and various advices that are involved with renewable energy to propose to the institution for consideration.
- 6.2.2 Study and draft work plan and projects for developing renewable energy for each type in accordance with the strategy development plan as set forth by the state.
- 6.2.3 Study and propose pilot projects of renewable energy and various experimental projects that are related to renewable energy sector that lead to implementation and commercialization.
- 6.2.4 Promote the renewable energy especially on bio-fuel, biomass and various small size electricity businesses for them to be self-sufficient and connected to the Electricite Du Laos system.
- 6.2.5 Take charge of, and cooperate with the concerned divisions to study and promote, selected type of energy for transportation sector.
- 6.2.6 Study and give technical advice in relation to investment, analysis of the benefits on the economic technology, finance, buying-selling and the country's marketing in the promotion tasks and the renewable energy development in accordance with the regulations.
- 6.2.7 Study, collect data and build database, disseminate and give advice on the concerned data and information on renewable energy such as: small hydropower equal to or less than 15 MW, solar power, wind power, biomass, and waste from city, industry factories and others.
- 6.2.8 Monitor and follow-up, give advice and training on how to use and maintain renewable energy system at the locality.
- 6.2.9 Contact and cooperate with ministries, organizations, localities and other concerned parties for follow-up and inspection of renewable energy development projects in accordance with the regulation or as assigned by the institution.
- 6.2.10 Promote the development of electrification by renewable energy projects in supporting the local development.
- 6.2.11 Implement other tasks as assigned by the institution.

6.3 Rural Electrification Division

- 6.3.1 Study, prepare, improve and give advice on the technical regulation for off-grid system procedures and various regulations that are related to management of the usage of the off-grid system.
- 6.3.2 Study and prepare plan, work plan and projects for developing and the rural electrification extension.
- 6.3.3 Research and propose pilot projects of rural electricity extension and other pilot projects that are related to rural electrification for the commercial practices.
- 6.3.4 Draft and improve master plan concerning rural electrification.
- 6.3.5 Research and give technical advice on funds, analysis of benefits on economical technology, finance, buying-selling and the country's domestic energy market in promoting and developing off-grid electrification system in accordance with the regulations.
- 6.3.6 Study, collect data and build-up database, disseminate and give advice concerning various data and information on off-grid electrification system in accordance with the regulation.
- 6.3.7 Monitor and establish implementation of rural electrification in accordance with the plan of project supported by the international organizations.
- 6.3.8 Follow-up, inspect, give advice and train how to use and maintain off-grid electrification system at the locality and rural areas.
- 6.3.9 Contact and corporate with ministries, organizations and the concerned locality in order to monitor and inspect rural electrification projects in accordance with the regulation or as assigned by the institution.
- 6.3.10 Carry out other task as assigned by the institution.

6.4 Energy Efficiency and Conservation Division

- 6.4.1 Study and draft policy, strategy on energy conservation.
- 6.4.2 Set procedures, regulations and give various advices on energy conservation.
- 6.4.3 Study and draft work plan and project for developing and promoting to energy conservation.
- 6.4.4 Research proper energy saving and conservation of various experimental energy projects concerning conservation and effective use of energy in order for them to reach the stage of commercialization.
- 6.4.5 Research and give technical advice concerning the funds, analysis of the economical technology, finance, buying-selling and the domestic electricity market in the field of the promotion tasks for energy conservation.
- 6.4.6 Study, collect data and set up database, disseminate, give advice and provide data services concerning the energy conservation.
- 6.4.7 Monitor, inspect and give advice on the usage and maintenance of energy conservation system for all sectors that use the said energy.

- 6.4.8 Promote the energy efficient stoves and development of the production.
- 6.4.9 Contract and corporate with ministries, organizations, the localities and concerned parties in order to monitor and inspect energy conservation projects in accordance with the regulations or as assigned by the institution.
- 6.4.10 Contact and corporate with all concerned parties both domestic and international for promoting and implementing clean development mechanism and climate change adaptation.
- 6.4.11 Train and build awareness, and disseminate energy conservation and saving.
- 6.4.12 Implement other tasks as assigned by the institution.

Part IV

Work Method

Article 07 : Work Method.

- 7.1 Implement one chief regime principle in accordance with diversification of management system based upon Central-Democracy principle, lead by group of committee, individuals responsible for clearly dividing work and responsibility, and assigning rights to solve problem at each level, to each individual clearly with dividing them appropriately.
- 7.2 Activity should strictly follow the directive policy of the Party, the strategy for energy development plan of the Ministry of Energy and Mines to make detailed plan of each project and orderly work plan, concentrate and learn from the past lesson.
- 7.3 Implement report regime, consultation meeting regime, inspection regime regularly, and give feedback to and seek the advice from the high level regularly.
- 7.4 Coordinate various departments under the Ministry of Energy and Mines and various organizations concerned in accordance with its responsibility to ensure that energy plan of energy sector are implemented soundly and effectively.
- 7.5 Accept weekly feedback and hold monthly meetings within the institute.

Part V

Final Provision

Article 08 : Institute of Renewable Energy Promotion has its own stamp to serve official purposes.

Article 09 : The Institute of Renewable Energy Promotion with all concerned parties shall acknowledge and implement these articles strictly.

Article 10 : These articles are effective immediately after duly signed and replaces all earlier agreements and decision that contradicts with these articles.

The Minister of Energy and Mines

Signed and Sealed

Soulivong Daravong

Appendix II

Technical Assistance for Capacity Building in the Hydropower and Mining Sectors
prepared by the World Bank

<p>Component 1. Joint Hydropower and Mining Learning Program. (US\$ 2.26 million)</p> <p>This component aims to build critically needed capacity and generate public awareness across the hydropower and mining sectors. The provision of adequate skills and training for government staff and the next generation of leaders for the two sectors would remove critical bottlenecks to the development of both sectors.</p>	
<p>Subcomponent a. Continuing Learning Program for Sector Professionals.</p>	<ul style="list-style-type: none"> • To provide for learning in cross-cutting issues as well as training specific to the two sectors, the project will fund higher-level courses of a continuing-education nature (such as contract management, financial appraisal, project supervision, environmental and social management, etc.), as well as sector-specific hands-on training on technical issues. • The continuing-learning program will target government staff and public/private sector practitioners at three levels: <ul style="list-style-type: none"> (i) senior management to be equipped with skills necessary for strategic vision and planning for both sectors; (ii) mid-level staff charged with analytical responsibilities in terms of economic, financial and technical assessments of proposals; and (iii) provincial level staff whose capacities for follow-up on the field level are to be improved. MEM will make use of existing facilities to carry out the training programs.
<p>Subcomponent b. Education Sector Support.</p>	<ul style="list-style-type: none"> • This component will support advanced formal education at the National University of Lao PDR (NUOL) and selected technical colleges, to assist development of the next generation of hydropower and mining engineers and a skilled labour force. • The support of the Project for these educational institutions will supplement programs funded from other donors and sources (the ADB, for example) but with specific application to the academic disciplines required for training in the hydropower and mining sectors. • Subcomponents include: <ul style="list-style-type: none"> (i) support to the NUOL to develop the technical engineering curricula for recently established hydropower and mine engineering degrees (in connection to the environmental and social education programs to be supported by a sub-grant under the LEnS Additional Financing as well as the ADB/AusAID-supported Integrated Water Resources Management Project; promote professor and student exchange programs with universities in the region; and upgrade library, laboratory, and teaching resources; and (ii) technical training programs for skilled workers, through two established technical colleges specializing in hydropower, and one college charged with education of mine professionals. All of these institutions are in urgent need of upgrading their curricula and teaching facilities and equipment.
<p>Subcomponent c. Outreach and Information Sharing for Stakeholders.</p>	<ul style="list-style-type: none"> • This component will entail the establishment of a small library at the MEM where information may be made available for public awareness, as well as outreach programs which will be used and be adapted to the existing procedures at the central and provincial levels for dissemination of information. • In addition to the library, the component will support upgrading of the MEM's centralized web-site for on-line publication of sector documents and information. • The outreach strategy also entails systematic translation into the Lao language so as to be comprehensible to all stakeholders. • The library will also serve as a legislation register that will house and keep track of changes to relevant government legislative instruments. • Five pilot information centers, located within the provincial department for Energy and Mines, are proposed: Vientiane, Odomxay, Louangphabang, Khammoune and Champasack. • The planned information centers will be established within existing ministry premises and will not entail land acquisition. These information centers will also conduct outreach activities with communities in areas that are particularly impacted by hydro and mining investments.
<p>Component 2: Hydropower Sector Development. (US\$ 2.71 million)</p> <p>The hydropower component aims at capacity building in support of sustainable hydropower development in Lao PDR. Activities will cover the entire value chain, from planning, concessioning, construction, and operation to revenue management.</p>	

<p><i>Subcomponent a. Hydropower Planning.</i></p>	<ul style="list-style-type: none"> • This component will assist the government agencies to: <ul style="list-style-type: none"> (i) review the economic benefits and financial returns of potential hydropower sites, and update the least-cost system expansion plan (2005) for hydropower development, taking into account potential environmental and social costs and benefits, in the context of power trade with GMS countries, and meet domestic load growth, including assessment of the benefits and costs of hydropower construction on the Mekong River; (ii) develop the Planning for a National Hydrological Data Collection and Processing System to support hydropower development planning and optimization, including installation of critical gauge stations along the Nam Ou River to provide input data; and (iii) update the existing models developed under various projects by the Mekong River Commission (MRC) and ADB for cascaded hydropower development planning, and apply the planning tools on the Nam Ou River and conduct training programs to build up knowledge and capacity in the MEM and associated government agencies to promote integrated river basin planning practice in the country, taking into consideration of environmental and social requirements, benefits and impacts.
<p><i>Subcomponent b. Hydropower Concession Management.</i></p>	<ul style="list-style-type: none"> • This component will provide technical assistance to the Department of Energy Promotion and Development (DEPD) on project supervision to ensure project construction and operation complying with the CA signed. • In particular, consulting services will be provided to help DEPD in <ul style="list-style-type: none"> (i) Capacity building institution which is to focus on establishment of systems and manpower requirements within the DEB (ii) Capacity building on technical aspect which is to focus on the monitoring of implementation and other related technical issues of Concession Agreement (iii) Capacity building on financial aspect which is to focus on financial modeling and monitoring (iv) Capacity building on legal aspect which is to focus on the contractual aspects of Concession Agreement
<p><i>Subcomponent c. Hydropower management and implementation of the NPSH.</i></p>	<ul style="list-style-type: none"> • This component will provide technical assistance to the DOE to: <ul style="list-style-type: none"> (i) adjust the NPSH in line with the new ESIA Decree and the recent institutional restructuring and develop/update operational regulations and procedures to enable effective implementation of the NPSH; (ii) update and implement the MEM's internal guidelines, technical standards and administrative procedures to facilitate effective enforcement and monitoring of the NPSH; and (iii) support the DOE and selected PDEMs in three to four key provinces (Attapeu/Chamapasak, Vientiane, and Bolikhamxay) for implementation of the Action Plan developed under LEnS to forge effective implementation of the NPSH.
<p><i>Component 3. Mining Sector Development.</i> (US\$ 2.31 million) The project will provide funding for three subcomponents pertaining to the mining sector.</p>	
<p><i>Subcomponent a. Improvement of Sector Governance and the Enabling Environment.</i></p>	<ul style="list-style-type: none"> • Clear laws and regulations for the mining sector, along with internationally competitive taxation, are the key to developing the sector. While the Government has made considerable progress in these areas, including adoption of a new Minerals Law in December 2008, the legislative and regulatory framework needs to be completed. • The project will provide legal advisory support to: <ul style="list-style-type: none"> (i) completion of the on-going legislation process by providing funding for senior legal advisors to draft detailed mining regulations covering several aspects of mine title issuance and registry, occupational health and safety, artisanal and small scale mining, environmental and social protection, classification of mineral resources and reserves, guidelines for prospecting and exploration, and the use and commercialization of mineral products; (ii) develop a national mining development policy; (iii) prepare a standard mineral development agreement which can be used by investors, and (iv) promote models for corporate social responsibility, and risk mitigation and community benefit-sharing approaches (such as community development funds). • The Project will support the dissemination of the Minerals Law and regulations through funding of printing, translation, and other expenses related to public information and awareness-raising, including in impacted communities. In addition,

	<p>the project will provide funding for the Government to commission a study on the financial flows of mining companies, with a view to improving reporting and accuracy. The study will also provide a means for the consultants to train the MOF staff in analysis of company profit and loss statements in order to improve tax administration.</p>
<p><i>Subcomponent b. Strengthening of Government Oversight Capacity.</i></p>	<ul style="list-style-type: none"> • To support implementation of the new laws, regulations, and taxation instruments by the relevant sector agencies—principally within the MEM and the MOF—the project will fund technical assistance and logistical support to: <ul style="list-style-type: none"> (i) provide training on the use of a monitoring and evaluation (M&E) template, which was developed under a previous Institutional Development Fund (IDF) grant; (ii) reinforce the mine inspection functions within the MEM, to ensure compliance with relevant occupational health and safety, environmental and social safeguards, and production requirements, as per the new Minerals Law and regulations; (iii) elaborate a community consultation and disclosure program, to promote understanding of the legal rights and obligations of local communities and developers in the mining sector; and (iv) reinforce the mine cadastre and mine title registry functions of the Department of Mines (DOM), specifically to provide the hardware and software required for transition from the present coordinate reporting system to a block reporting system.
<p><i>Subcomponent c. Program to Promote Minerals Development.</i></p>	<ul style="list-style-type: none"> • In order to attract and retain new minerals investment, Lao PDR needs to develop and upgrade its geological information base. The provision of adequate and accurate data, information, and maps of the geology and earth system of the country is essential to assist new exploration for mineral deposits and to help the Government with better land use planning. This information will be regularly updated and made publically available at no or nominal cost to any interested party. • The project will provide funding for consultancy services and logistical support to: <ul style="list-style-type: none"> (i) provide geological and mineralogical inputs to the current modernization and upgrade of the existing geographical information systems (GIS), and widely disseminate the information they collect; (ii) provide field training in applied geological mapping at a 1:200,000 scale covering the mineral potential of a portion of Savannakhet province; and (iii) acquire and provide training in the use of laboratory and field equipment, including geo-chemical testing and analytical equipment, to enable the Department of Geology (DGEO) to test for the quality and quantity of minerals produced and exported by developers. • The funding provided by the Project for the upgrading of the geological database and promotional activities will be enhanced by parallel funding of the Finland government through which technical assistance will be provided by the Finnish Geological Survey.
<p><i>Component 4. Project Administration and Management.</i> (US\$ 0.72 million)</p> <p>The project will support consultancy services for the Project Secretariat established within the MEM for coordination and management of project implementation, and acquisition of logistical and equipment support necessary for its smooth functioning.</p>	

Source: The World Bank (2010), Project Appraisal Document—Technical Assistance for Capacity Building in the Hydropower and Mining Sectors (Report No: 50918-LA), January 12, 2010, Washington, DC

Ongoing projects of the Asian Development Bank

Small and Mini Hydroelectric Development Program	
Type of assistance	Technical assistance
Schedule	Approval: 14 January 2009 Signing: 9 February 2009 Effectively: 9 February 2009 Closing: 31 December 2012
Fund source	Total: US\$1,880,000- Technical Assistance Special Fund: US\$600,000- ATF – Finnida Grant: US\$1,000,000- Counterpart: US\$280,000
Description	<ul style="list-style-type: none"> • The Project proposes to assist the MEM in: <ul style="list-style-type: none"> (v) preparing a policy for implementing sections of the amended Electricity Law related to tariff setting, to encourage development of medium to mini hydroelectric power projects to provide electricity from a clean and renewable source of energy for domestic use, and to allow the Government to approve such development proposals; (vi) after screening and ranking identified projects, prepare a feasibility study of one or two small or mini hydropower (with an installed capacity of up to 5 MW each) projects that would benefit from the work under (i); and (vii) preparing the necessary documentation for Clean Development Mechanism (CDM) registration that would serve as a model for replication by other small-scale hydroelectric power project developments. • This is in line with the ADB's Strategy 2020 and the country strategy and program for Lao PDR, which encourages the development of environmentally friendly generating facilities to tackle climate change and promote clean energy, and is also consistent with the government's energy sector plan to provide electricity to 90% of the population by 2020, and the EDL's energy strategy and road map on power generation.
Greater Mekong Subregion Northern Power Transmission Project	
Type of assistance	Grant
Schedule	Approval: 26 January 2010 Signing: 24 February 2010 Effectively: 23 November 2010 Closing: 30 June 2014
Fund source	Total: US\$27,435,000- Asian Development Fund: US\$20,000,000 Counterpart: US\$7,435,000
Description	<ul style="list-style-type: none"> • The project will: <ul style="list-style-type: none"> (i) construct 398 kilometers (km) of 115-kilovolt (kV) transmission lines with associated 115/22 kV substations, and erect about 1,100 km of new 22 kV medium- and low-voltage distribution lines to expand access to grid electricity to consumers in western Vientiane, Xaignabouli, and Phongsali provinces of the Lao PDR; (ii) provide no interest credit to poor households in the project areas to help them connect to the distribution grid; and (iii) provide consulting services, including a project implementation consultant to the EDL and advisory services to the Ministry of Energy and Mines (MEM). • The construction of the transmission and distribution facilities comprises three modules. The ADB will finance module 1, and Korea Eximbank will finance modules 2 and 3. • Module 1 consists of: <ul style="list-style-type: none"> (i) approximately 98 kilometers single circuit on double circuit towers transmission line from Paklay to Nonhai; (ii) a 20 mega volt ampere (MVA) new substation in Paklay; (iii) the extension of an existing substation in Nonhai; and (iv) the extension of an existing substation in Xayabury; • Module 2 consists of: <ul style="list-style-type: none"> (i) approximately 122.74 kilometers single circuit on double circuit towers transmission line from Paklay to Xayabury; (ii) approximately 74.6 kilometers single circuit on single circuit tower 115kV transmission line from Paklay to the Lao-Thai border near Kenthao for

	<ul style="list-style-type: none"> (iii) connection with the Thali substation located in the territory of Thailand; approximately 263 km 22 kV feeders from the Paklay substation, 156 km 22 kV feeders from the Nonhai substation, and 336 km 22 kV feeders from the Xayabury substation, all for related medium and low voltage distribution; and (iv) necessary connection from the Xayabury substation to 7,020 households, from the Nonhai substation to 7,553 households, and from the Xayabury substation to 1,541 households. • Module 3 consists of: <ul style="list-style-type: none"> (i) approximately 102.4 km single circuit on double circuit towers transmission line from Namto to Boun Neua; (ii) a 20 mega volt ampere new substation (transformer feeder) in Boun Neua; (iii) a new 115kV switching station in Namto; (iv) approximately 361 km 22 kV feeders from the Boun Neua substation for related medium and low voltage distribution; and (v) necessary connection from the Boun Neua substation to 2,645 households. • The consulting services will be financed by ADB.
Renewable Energy Development in Remote Communities Project	
Type of assistance	Technical assistance
Schedule	Approval: 9 September 2011 Signing: 11 November 2011 Effectively: 11 November 2011 Closing: 31 May 2014
Fund source	Total: US\$1,000,000- Japan Fund for Poverty Reduction: US\$1,000,000-
Description	<ul style="list-style-type: none"> • The proposed Project will implement 5.5 Mega Watts (MW) of distributed off-grid capacity with (i) solar photovoltaic (PV) home systems; and (ii) mini-grids powered by RETs (PV, micro/pico-hydro and mini-wind). • It will also include institutional and beneficiary capacity building in procurement, operation and maintenance (O&M), and monitoring.
Greater Mekong Subregion Nam Ngum 3 Hydropower Project	
Type of assistance	Loan / technical assistance
Schedule	Approval: Loan 2818, Loan 2819 and TA on 3 November 2011 Signing: TA on 9 January 2012 Effectively: TA on 9 January 2012 Closing: Loans 2818 and 2819 on 30 June 2019, and TA on 31 December 2017
Fund source	
Description	<ul style="list-style-type: none"> • The ADB will provide two project loans to the Government of the Lao PDR to support the development of the Nam Ngum 3 Hydropower Project and associated dedicated transmission facilities in the Lao PDR for exporting electricity to Thailand. • The government will use the funds for its equity share in the 440-megawatt (MW) build-own-operate transfer Nam Ngum 3 hydropower plant (NN3). • The proposed project will: <ul style="list-style-type: none"> (i) potentially provide revenue flows to the government in the form of taxes, royalties, and dividends currently estimated at \$771 million over the 27 year concession period; (ii) increase regional cooperation in the Greater Mekong Subregion (GMS); (iii) promote economic growth in the Lao PDR through private sector investment, technology transfer, employment generation, and local infrastructure development; and (iv) ensure sustainable development in northeast Thailand by achieving energy security and reducing greenhouse gas emissions. • The Nam Ngum 3 Power Company (NN3PC) will sell to the Electricity Generating Authority of Thailand (EGAT) on average 2,072 gigawatt-hours (GWh) annually from NN3, which, if generated by the Thai power system, would annually create 1 million tons of carbon-dioxide emissions. • The proposed NN3 would be the second large-scale hydropower plant to receive ADB financing in the Lao PDR, following Nam Theun 2, which was approved in 2005.

Source: ADB

Appendix III

List of required competency

List of competency necessary for assuming the role of secretariat
Drafting
Promote compliance with legislations in the power sector as well as other related sectors. It includes demonstrating compliance with legislation and related public sector guidelines and procedures and encouraging and assisting others:
to comply with uniformity in drafting style, and to make the resulting statutes clear, simple and easy to understand and use; and
to use and apply useful legal information about current legislation of the power sector.
Organization
Effective management, organization and prioritization of office functions as well as the workday/week/month for people, management and other stake-holders.
Sample competency includes:
to develop and use systems to organize and keep track of information or work progress;
to identify what needs to be done and takes action before being asked or required to;
to organize information or materials for others;
to prepare carefully for meetings, travel, and conferences for others;
to prioritize tasks to meet deadlines even in a fast paced, and changing environment through frequent interruptions;
to review and check carefully the accuracy of information in work reports provided by management, or other individuals; and
to carefully track, monitor and purchase office necessities and inventory to ensure the committee activities functionality.
Communication
Clearly conveying and receiving messages to meet the needs of others. This involves listening, interpreting and delivering verbal, non-verbal, written and electronic messages
Sample competency includes:
to listen attentively to ideas and concerns of others;
to speak clearly and can be easily understood;
to demonstrate ability to provide explanation and/or options to resolve difficult or confrontational situations;
to express ideas clearly and concisely in writing;
to use appropriate business style writing;
to be able to explain issues clearly and accurately, policies, procedures and other pertinent information to others;
to compose/ proofread/ edit clearly and concisely documents such as letters, memos and e-mail;
to demonstrate correct use of grammar, spelling and punctuation in all produced documents;
to be able to relay/redirect complete and accurate messages to appropriate persons/departments; and
to keep his/her manager informed about progress and problems; avoid surprises.
Service Delivery
Understanding and meeting the needs of clients. Clients include members of the Steering Committee, Taskforces and other concerned parties related to preparation of the NPDP.
Sample competency includes:
to be able to explain issues clearly and accurately, policies, procedures and other pertinent information to others;
to be able to relay/redirect complete and accurate messages to appropriate persons/departments;
to compose/ proofread/ edit clearly and concisely documents such as letters, memos and e-mail;
to demonstrate ability to provide explanation and/or options to resolve difficult or confrontational situations;
to demonstrate correct use of grammar, spelling and punctuation in all produced documents;
to express ideas clearly and concisely in writing;
to keep his/her manager informed about progress and problems; avoid surprises; and
to listen attentively to ideas and concerns of others.

List of competency necessary for assuming the role of secretariat
Adaptability
Personal willingness and ability to work in, and adapt to change
Sample competency includes:
to understand and accept other points of view and recognizes the value of different approaches;
to switch to a different strategy when an initially selected one is unsuccessful;
to demonstrate openness to new organizational structures, procedures and technology;
to accept change even when there is ambiguity;
to step into co-workers tasks when needed or required;
to work creatively within standard procedures to fit a specific situation;
to apply special techniques to manage situations involving stress or change; and
to take on new tasks willingly.
Interpersonal
Working cooperatively and effectively to achieve concrete results
Sample competency includes:
to accept change even when there is ambiguity;
to apply special techniques to manage situations involving stress or change;
to demonstrate openness to new organizational structures, procedures and technology;
to step into co-workers tasks when needed or required;
to switch to a different strategy when an initially selected one is unsuccessful; and
to take on new tasks willingly.
Technology
Ability to accurately and thoroughly utilize office technology and to demonstrate practical knowledge of Information Management, E-mail Management and Privacy Protection Issues.
Sample competency includes:
to apply effectively technical knowledge to solve a range of problems with office software such as MS Office;
to be able to establish and maintain electronic & paper filing systems so that information can be readily retrieved;
to demonstrate ability to use office software to create; and
to format and edit forms and presentations.

Appendix IV

Agencies and ministries roles

	Ministry of Energy and Mines (MEM)	Ministry of Planning and Investment (MPI)	EDL	EDL-Gen	Ministry of Industry and Commerce (MOIC)	The Prime Minister's Office	Ministry of Environment and Natural Resources (MENR)	Ministry of Agriculture and Forestry	Ministry of Finance
	Dept. Energy Policy and Planning (DEPP) (Secretary)	Dept. of Energy Management (DEM)	Dept. of Energy Business (DEB)	Institute for Renewable Energy and Planning (IREP)	Dept. of Mines (DOM)	Dept. of Cooperation	Department of Statistic	Department of Finance	Technica Department
				Power Plant Development Dept.	Transmission Line and Substation Dept.	Statistics Planning Office	Generation Division	Strategic Planning & Business Development Div.	
						Cabinet Office	Department of Domestic Trade	Department of Industry	Department of Agriculture
						Division of Planning, Statistic & Information	Lao National Committee for Special Economic Zones under Government Office	Science & Technology Research Institute (STRI)	Dept. of Water Resources
								Dept. of Environmental & Social Impact Assessment	
Sub-committee for Policy									
Primary energy									
Availability of primary energy for power									
Primary energy usage									
Usage of renewable energy									
Power configuration									
Electric Power Demand									
Discuss the basic policies related to the customers with large demand									
Discuss the issues on grid code									
Methodologies for demand forecast									
Generation development plan									
Discuss the basic policy of generation development plan									
Identify the priority of generation development plan: priority of domestic supply (IPP (d) and EDL-Gen) and export (IPP (e))									
Discuss the concepts of generation options (dam type/ run off river type)									
Define the criteria and data necessary for prioritizing the generation development									
Discuss the procedures for selecting the power plant types (run off river/ poundage/ reservoir)?									
Transmission development and its operation									
Discuss the basic policy of power system development									
Policy on domestic power system configuration (incl. north-south interconnection, EGAT connection, etc.)									
Discuss the issues on power system operation (e.g. reliance to EGAT, etc.)									
Discuss the policy on transmission development plan									
Discuss the issues on the concept on domestic power supply system (including demand-supply balance, TL development, power trade)									
Discuss the issues on domestic power interconnection, power facility development plan									
Discuss the policy on IPP export system (routing of TL for IPP, IPP export)									
Discuss the concepts on power system reliability									
Regional power trade									
Discuss the basic policy on GMS interconnection									
Discuss the basic concepts for power trades									
Rural electrification									
Discuss the basic policy on rural electrification									
Describe the concepts on how to implement the rural electrification									
EDL investment and tariff scheme									
EDL's investment policy									
Concepts on electrification tariff									
Environmental and social consideration									
Discuss the concepts on environmental and social consideration									
Discuss the direction of strategic environmental and social consideration assessment									
DEMAND FORECAST									
Generation Planning									
Discuss the issues of project evaluation and prioritization (project list, current status, evaluation criteria)									
Formulating database for compilation of proposed									
Power system analysis									
Discuss the issue of peak and off-peak balance									
Discuss the issue of energy security (use of domestic TL, etc.)									
Data collection and analysis of proposed projects									
Analyze the power system network (voltage analysis, N-1 contingency analysis, short circuit analysis, etc.)									
Cost balance analysis									
Alanalyze cost balance (analysis of purchase option from EGAT, etc.)									
Power system development planning									
Discuss the power system development plan									
POWER DEVELOPMENT & INVESTMENT									
Power development plan for export									
Discuss the import/export as a whole nation									
Power facility development for export									
Discuss the issues on the facility development for export (Generation facilities, TL & SS development plan, etc.)									
Funding plan									
Prepare funding plan to support various development									
Fund procurement plan (summary)									
Formulate annual fund procurement schedule in accordance with generation development plan and system									
Reimbursement schedule									
Prepare reimbursement schedule									
REGULATION									
Technical code									
Discuss the issues on technical code									
Tariff									
Discuss the issues on tariff schedule									
IPP oversight									
Discuss the issue on promoting and regulating IPP									

Appendix V

Description of WT meeting

Number	#1	#2	#3	#4
Date:	January 22, 2013	Feb 12, 2013	March 28-29, 2013	March 12, 2013
Participants	7 from DEPP	7 from DEPP 6 other participants from DEM, IREP EDL and EDL-Gen	4 from DEPP	5 from DEPP 2 Japanese LT Experts
Theme		Demand Forecasting		Generation Planning
Narrative	<ul style="list-style-type: none"> The selection of the discussion theme was initiated by the Director General of MEM. Discussion topics include: explanation of the JICA Study including the purpose, the current status, etc. It was also presented that the formulation of Work Team and the meeting's purpose, etc. The procedures and expectation as well as roles for preparation of NPDP were presented. 	<ul style="list-style-type: none"> Continuation from #1. Provided explanation on the information of the Study and the purpose of the work team meeting. Current forecast is over estimate. Particularly those of large demand. Local authority contact with EDL for data collection. Such estimation is not based on the installation schedule. Only reported to EDL based on the installed capacity. 	<ul style="list-style-type: none"> Continuation from #2 Controlled discussion facilitated by Japanese Experts 	<ul style="list-style-type: none"> New topic on Generation Planning Use of water shall be better coordinated along the water shed.
Conclusion/ Actions to be taken	<ul style="list-style-type: none"> Specific actions for improvement of data collection shall be carried out by EDL. Review of data, analysis using them, etc. may be carried out by experts, if necessary. In need of data & draft for making decision. 	<ul style="list-style-type: none"> Accuracy of data collection shall be much improved. (EDL is able to do so.) Approaches for the analysis shall be improved through the outcomes from the study. It was proposed that quarterly meeting aiming at improving the reporting from local authority is proposed. 	<ul style="list-style-type: none"> Data sources on large demands clarified. No need of direct contact from MEM because EDL has contacted key persons. Data accuracy and dependability based on the schedule is 	<ul style="list-style-type: none"> Explanation of the current situation Need of resolving seasonal fluctuation

Number	#1	#2	#3	#4
Preparation for the next meeting, etc.	<ul style="list-style-type: none"> Next meeting is scheduled Feb. The theme is improvement of data collection mechanism. Review the data submitted from local authorities. 	<ul style="list-style-type: none"> Further training to meet the necessity and requirement to carry out the proposed actions sought. Next topic would be on the power Supply. Estimation's accuracy is important. The policy related to large industry (how to measure, how to exclude & include) shall be even discussed in greater detail. Improvement of data collection methods necessary. 	<ul style="list-style-type: none"> Include the important stakeholders to the preparation process of NPDP Stakeholders identified, Contact person identified and listed. Utilizing the existing reporting mechanism so to maintain information flow from provinces. Financing such mechanism by ensuring budget to the activities. 	<ul style="list-style-type: none"> Extension of the contract with EGAT (1000MW) proposed. Renew and reconsider the export/import tariff, Oversight to EDL must be strengthened

Appendix VI

List of resources (1)

	Description of Capacity Development	Priority	
		DEPP	EDL
POLICY FORMULATION			
Primary energy	Discuss the availability of primary energy for power Discuss the concept of primary energy usage Discuss the concept of the usage of renewable energy Concept of power configuration	H	n/a
Electric Power Demand	Discuss the basic policies related to the customers with large demand Discuss the issues on grid code Methodologies for demand forecast	H	H
Generation development plan	Discuss the basic policy of generation development plan Identify the priority of generation development plan: priority of domestic supply (IPP (d) and EDL-Gen) and export (IPP (e)) Discuss the concepts of generation options (dam type/ run off river type) Define the criteria and data necessary for prioritizing the generation development Discuss the procedures for selecting the power plant types (run off river/ poundage/ reservoir)?	H	H
Transmission development and its operation	Discuss the basic policy of power system development Policy on domestic power system configuration (incl. north-south interconnection, EGAT connection, etc.) Discuss the issues on power system operation (e.g. reliance to EGAT, Discuss the policy on transmission development plan Discuss the issues on the concept on domestic power supply system (including demand-supply balance, TL development, power trade) Discuss the issues on domestic power interconnection, power facility development plan Discuss the policy on IPP export system (routing of TL for IPP, IPP Discuss the concepts on power system reliability	H	H
Regional power trade	Discuss the basic policy on GMS interconnection Discuss the basic concepts for power trades	H	H
Rural electrification	Discuss the basic policy on rural electrification Describe the concepts on how to implement the rural electrification	H	n/a
EDL investment and tariff scheme	EDL's investment policy Concepts on electrification tariff	H	H
Environmental and social consideration	Discuss the concepts on environmental and social consideration Discuss the direction of strategic environmental and social consideration assessment	H	H
DEMAND FORECAST			
Seminar for demand forecast	Off-JT in Vientiane planned in April 2 to 4, 2013 Discuss the use of econometric model and its software Practice usage of the model Follow-up by IEEJ if necessary	H	H
Generation Planning	Discuss the issues of project evaluation and prioritization (project list, current status, evaluation criteria) Formulating database for compilation of proposed projects	H	H
SYSTEM PLANNING			
Power system analysis	Discuss the issue of peak and off-peak balance Discuss the issue of energy security (use of domestic TL, etc.) Data collection and analysis of proposed projects Analyze the power system network (voltage analysis, N-1 contingency analysis, short circuit analysis, etc.) OJT on power system analysis software	L	H
Cost balance analysis	Analyze cost balance (analysis of purchase option from EGAT, etc.)	L	H
Power system development planning		L	H
POWER DEVELOPMENT & TRADE/ FINANCE			
Power development plan for export	Discuss the import/export as a whole nation	L	H
Power facility development for export	Discuss the issues on the facility development for export (Generation facilities, TL & SS development plan, etc.) Prepare funding plan to support various development plan.	L	H
Funding plan	Formulate annual fund procurement schedule in accordance with generation development plan and system expansion plan	L	H
Fund procurement plan (summary)	Prepare reimbursement schedule	L	H
Reimbursement schedule		L	H
REGULATION			
Technical code	Discuss the issues on technical code	L	H
Tariff	Discuss the issues on tariff schedule	L	H
IPP oversight	Discuss the issue on promoting and regulating IPP investors	L	H

List of resources (2)

	Priority			Type of Training and Cost			Resources Availability			Remarks
	L	M	H	OJT	Cost	Off JT	Cost	Laos	Japan	
ORGANIZATIONAL DEVELOPMENT										
Establishing Priorities and Setting Goals	H	✓	H	✓	H	n/a	✓	✓	✓	One of important facilitation skills to be strengthen
Effective Meeting Management	H	✓	H	×	n/a	n/a	✓	✓	✓	This is one of core competency for plan, implement, report and close meeting more effectively by following a set of procedure
Negotiation	H	✓	H	✓	H	n/a	✓	✓	✓	This may be acquired through WT meeting activities
Decision Making	M	✓	H	×	n/a	n/a	✓	✓	✓	
Communication Skills	M	✓	H	✓	L	n/a	✓	✓	✓	
Managing Workplace Conflict	M	✓	H	✓	H	n/a	✓	✓	✓	This may be acquired through WT meeting activities
Time Management	M	✓	H	✓	H	n/a	✓	✓	✓	
Ethics and Professionalism for Public Employees	L	✓	H	✓	H	n/a	✓	✓	✓	The project does not involve interaction with developers at this poin. Ethical issues may be taking into consideration by external
Developing Effective Teams	L	✓	H	✓	H	n/a	✓	✓	✓	Team building activities may be carried out from time to time.
Workplace English as a Second Language (ESL)	L	✓	H	✓	H	✓	×	✓	✓	ESL is important but shall be acquired independently by self-financed or external support
LEADERSHIP DEVELOPMENT/ SUPERVISORY SKILLS										
Budgeting and Financial Analysis	H	✓	H	✓	H	n/a	✓	✓	✓	Short off-JT is not sufficient for meeting the needs of DEPP.
Project Management	H	✓	H	×	n/a	n/a	✓	✓	✓	Sreadsheet skills as prerequisite Short off-JT is not sufficient for meeting the needs of DEPP.
Conflict Resolution and Management	M	✓	H	✓	M	n/a	✓	✓	✓	
Building Positive Communication Skills	M	✓	H	✓	L	n/a	✓	✓	✓	
Decision Making Skills	M	✓	H	✓	M	n/a	✓	✓	✓	
Delegation	M	✓	H	✓	M	n/a	✓	✓	✓	
Team Building	M	✓	H	✓	L	n/a	✓	✓	✓	
Managing Change	L	✓	H	✓	M	n/a	✓	✓	✓	
Hiring, Retention, and Termination Basics	L	✓	H	✓	L	n/a	✓	✓	✓	
Tools for Enhancing Employee Motivation	L	✓	H	✓	L	n/a	✓	✓	✓	
Coaching and Counseling	L	✓	H	✓	M	n/a	✓	✓	✓	
Discipline and Documentation of Employees	L	✓	H	×	n/a	n/a	✓	✓	✓	
Giving Constructive Feedback and	L	✓	H	✓	L	n/a	✓	✓	✓	
Hiring Retention and Termination	L	✓	H	✓	H	n/a	✓	✓	✓	
Interviewing Skills	L	✓	H	✓	H	n/a	✓	✓	✓	
Performance Appraisals	L	✓	H	✓	H	n/a	✓	✓	✓	
CUSTOMER FOCUSED APPROACHES/ QUALITY TECHNOLOGY										
Professional Report Writing	H	✓	H	✓	H	n/a	✓	✓	✓	OJT would be the most appropriate methodology
Work Process Improvement	H	✓	H	✓	H	n/a	✓	✓	✓	WT meeting, facilitating NPDP preparation is a good opp. for the subject
Active Listening	M	✓	H	✓	H	n/a	✓	✓	✓	
Issues in Customer Satisfaction	L	✓	H	✓	H	n/a	✓	✓	✓	
Benchmarking	L	✓	H	✓	H	n/a	✓	✓	✓	
Total Quality Management	L	✓	H	✓	H	n/a	✓	✓	✓	
OFFICE TECHNOLOGY & SOFTWARE TRAINING										
MS Office: Word, Excel, Access,	H	✓	H	✓	H	n/a	✓	✓	✓	Short off-JT is not sufficient for meeting the needs of DEPP.
GIS	M	✓	H	×	n/a	n/a	✓	✓	✓	
Introduction to the PC	M	✓	H	✓	H	n/a	✓	✓	✓	
Auto CAD	L	✓	H	✓	H	n/a	✓	✓	✓	May be necessary in the long-term. Low in imimiate needs
PowerPoint and Outlook	L	✓	H	✓	H	n/a	✓	✓	✓	
MS Project	L	✓	H	✓	H	n/a	✓	✓	✓	
Windows	L	✓	H	✓	H	n/a	✓	✓	✓	

Note: L:Low, M:Middle, H:High, ✓: available, x:not available, n/a: not applicable

Appendix VII

ສາທາລະນະລັດ ປະຊາທິປະໄຕ ປະຊາຊົນລາວ
ສັນຕິພາບ ເອກະລາດ ປະຊາທິປະໄຕ ເອກະພາບ ວັດທະນາຖາວອນ



ລັດວິສາຫະກິດໄຟຟ້າລາວ
 ມາຍາສ້າງເຂື່ອນ
 ທີ່ອາການສຶກສາ ແຫຼ່ງຜະລິດພະລັງງານໄຟຟ້າ

ເລກທີ...../ພລລກສຂ/ຂຽພ
 ນະຄອນຫຼວງວຽງຈັນ, ວັນທີ.....

ແຜນພັດທະນາແຫຼ່ງຜະລິດພະລັງງານໄຟຟ້າແຕ່ ປີ 2012 ຫາປີ 2025

No	Power Plant	Location	Part	Installed Capacity		EDL		EDL-GEN 25%		Domestic		COD	Progress	Developer
				Inst.Cap (MW)	Energy (GWh)	Inst.Cap (MW)	Energy (GWh)	Inst.Cap (MW)	Energy (GWh)	Inst.Cap (MW)	Energy (GWh)			
I ເຂື່ອນຂອງ EDL ຕະກູນ EDL-GEN ທີ່ກໍ່ໄດ້ແລ້ວ														
1	Nam Dong	Luangprabang	Northern	1.0	5.0	1.0	5.0	0.0	0.0	1.0	5.0	1970	Existing	EDL
2	Nam Ko	Oudomxay	Northern	1.5	8.0	1.5	8.0	0.0	0.0	1.5	8.0	1996	Existing	EDL
3	Nam Ngay	Phongsaly	Northern	1.2	5.2	1.2	5.2	0.0	0.0	1.2	1.5	2001	Existing	EDL
4	Nam Song (Ex)	Vientiane	Central	6.0	25.0	6.0	25.0	0.0	0.0	6.0	25.0	1991	Existing	EDL
5	Nam Ngum 1	Vientiane	Central	155.0	1002.0	116.3	751.5	38.8	250.5	155.0	1002.0	1991	Existing	EDL-EDL_GEN
6	Nam Luak	Vientiane	Central	60.0	218.0	45.0	163.5	15.0	54.5	60.0	218.0	2000	Existing	EDL-EDL_GEN
7	Nam Mang 3	Vientiane	Central	40.0	150.0	30.0	112.5	10.0	37.5	40.0	150.0	2005	Existing	EDL-EDL_GEN
8	Xeset 1	Saravan	Southern	45.0	133.9	33.8	100.4	11.3	33.5	45.0	133.9	1991	Existing	EDL-EDL_GEN
9	Xeset 2	Saravan	Southern	76.0	309.0	57.0	231.8	19.0	77.3	76.0	309.0	2009	Existing	EDL-EDL_GEN
10	Xelabam	Champasak	Southern	5.0	21.5	3.8	16.1	1.3	5.4	5.0	21.5	1969	Existing	EDL-EDL_GEN
				390.7	1,877.60	295.45	1,419.00	95.25	458.60	390.70	1,873.90			
Sub Total (I):														
II ໂຄງການຂອງ EDL ທີ່ກໍ່ວັກວັງ														
1	Nam Khan 2	Luangprabang	Northern	130.0	558.0					130.0	558.0	2015	Under Construction	EDL
2	Nam Khan 3	Luangprabang	Northern	60.0	240.8					60.0	240.8	2016	Under Construction	EDL
3	Nam Chiame	Xiangkhuang	Northern	104.0	448.2					104.0	448.2	2016	Under Construction	EDL
4	Nam Sana	Vientiane	Central	14.0	49.6					14.0	49.6	2014	Under Construction	EDL
5	Houaylamphanh Ngai	Xekong	Central	88.0	500.0					88.0	500.0	2015	Under Construction	EDL
6	Nam Hinboun	Khammouan	Central	30.0	197.0					30.0	197.0	2016	Under Construction	EDL
7	Xeset 3	Saravan	Southern	23.0	86.10					23.0	86.10	2016	FS Completed	EDL
				449.00	2,079.70					449.00	2,079.70			
III ໂຄງການຂອງ EDL ທີ່ກໍ່ວັກວັງສາກ														
1	Nam Boun 2	Phongsaly	Northern	15.0	60.0					15.0	60.0	2015	Pre Feasibility Study	EDL
2	Nam Ngao	Borkeo	Northern	20.0	85.2					20.0	85.2	2018	Pre Feasibility Study	EDL and FEA ENCOM
3	Nam Phak	Oudomxai	Northern	30.0	110.0					30.0	110.0	2015	Pre Feasibility Study	EDL
4	Nam Ngum-Nam Ken	Xayabouly	Northern	70.0	370.0					70.0	370.0	2020	Desk Study	EDL
5	Nam Ngum 1 (Ex)	Vientiane	Central	40.0	56.24					40.0	46.24	2017	FS Ongoing	EDL
6	Kengseuaten	Borlikhamxai	Central	54.0	200.0					54.0	213.0	2016	FS Ongoing	EDL
7	Xe dan 2,3	Saravan	Southern	20.0	80.00					20.0	80.0	2018	ສຽງຄົ້ນຄວ້າ	EDL
8	Xeset 4	Saravan	Southern	10.0	110.00					10.0	110.0	2018	Pre FS	EDL
9	Selabam (Ex)	Champasak	Southern	7.70	37.10					7.7	37.1	2013	Not progress	EDL
				266.70	1,108.56					266.70	1,111.52			

ຖານຂໍ້ມູນຂາດຂາຍ ຕໍ່ ບ.ນ.ສ.ສ. ບັນທຶກກຸງ, ລັດຮັບສິດຂາດຂາຍ, ນະຄອນຫຼວງວຽງຈັນ ສປປ ລາວ
 ທີ່: ສາທາລະນະລັດ ປະຊາທິປະໄຕ ປະຊາຊົນລາວ, ນະຄອນຫຼວງວຽງຈັນ, ສປປ ລາວ
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ແຜນພັດທະນາແຫຼ່ງຜະລິດພະລັງງານໄຟຟ້າແຕ່ ປີ 2012 ຫາປີ 2025

No	Power Plant	Location	Part	Installed Capacity		EDL		EDL-GEN 25%		Domestic		COD	Progress	Developer
				Inst.Cap (MW)	Energy (GWh)	Inst.Cap (MW)	Energy (GWh)	Inst.Cap (MW)	Energy (GWh)	Inst.Cap (MW)	Energy (GWh)			
IV ເຂື່ອນຂອງ IPP ທີ່ນຳໃຊ້ແລ້ວ														
4.1 IPP(d)														
1	Nam Nhone	Borkeo	Northern	3.0	12.0					3.0	12.0	2011	Existing	Lao Company 10%, MK Dynamic Resource Development 90%.
2	Nam Tho 3	Luangnamtha	Northern	1.2	5.5					1.2	5.5	2011	Existing	
3	Nam Ngum 5	Luangprabang	Northern	120.0	507.0					120.0	507.0	2012	Existing	EDL 15%, Sinohydro 85%.
4	Nam Lik 1/2	Vientiane	Central	100.0	435.0					100.0	435.0	2010	Existing	EDL 10%, CWE (China) 90%
5	Nam Gnuang 8	Borikhamxai	Central	60.0	316.0					60.0	316.0	2012	Existing	EDL 60%, GMS Laos 20%, Statkraft 20%.
Sub Total (V1):				284.20	1,275.50					284.20	1,275.50			
4.2 IPP(e)														
1	Nam Ngum 2	Vientiane	Central	615.0	2,300.0							2010	Existing	EDL 25%, CH Kanchang 28.5%, PT Construction and Irrigation (Lao) 4%, Katchabury (Thai) 25%, Bangkok Expressway PLC (Thai) 12.5%, TEAM 1%, Skalapak Group (USA) 4%
2	Nam Phao	Borikhamxai	Central	1.7	9.0					1.7	9.0	2011	Existing	Simuang Group 87%, Phaihana Khetphoudoi 13%
3	Theun Hnboun	Khammouan	Central	220.0	1,620.0							1998	Existing	EDL 60%, GMS Laos 20%, Narelic 20%
4	Nam Theun 2	Khammouan	Central	1,088.0	6,000.0					75.0	300.1	2009	Existing	IHSE 25% (Lao), EDF 40%, EGCO 35%.
5	Houay Ho	Attapeu	Southern	152.0	617.0					2.0	8.0	1999	Existing	EDL 20%, Glow Co., Ltd 67.25%, Hemaraj Land & Development 12.75%
6	Xekaman 3	Attapeu	Southern	250.00	982.90					25.0	96.0	2012	Under Construction	EDL 15%, VLP (Vietnam) 85%.
Sub Total (V2):				2,324.70	11,528.90					103.70	413.10			
V ໂຄງການຂອງ IPP ທີ່ຢູ່ໃນລະດັບຮູບຮ່າງການ (ໄລຍະກ່ຽວ)														
5.1 IPP(d)														
1	Nam Long	Luangnamtha	Northern	5.0	30.0					5.0	30.0	2013	Under Construction	EDL 20%; Luangpraseuth (Lao) 80%
2	Nam Sim	Houaphanh	Northern	8.0	29.4					8.0	29.4	2013	Under Construction	Energy Development AS (Norway) 80%; ECI 20%
3	Nam Ou 2	Luangprabang	Northern	120.0	546.0					120.0	546.0	2017	Under Construction	EDL 20%; Sinohydro (China) 80%
4	Nam Ou 5	Phongsaly	Northern	240.0	1,049.0					240.0	1,049.0	2017	Under Construction	EDL 20%; Sinohydro (China) 80%
5	Nam Ou 6	Phongsaly	Northern	180.0	739.0					180.0	739.0	2017	Under Construction	EDL 20%; Sinohydro (China) 80%
6	Nam Ngiep 2	Xiangkhuaug	Northern	180.0	723.0					180.0	723.0	2015	Under Construction	EDL 20%; CWE (China) 80%
7	Nam Ngiep 3A	Xiang Khuang	Northern	40.0	153.0					40.0	153.0	2013	Under Construction	Phongkubhavy (Lao)
8	Tadsalen	Savannakhet	Southern	3.2	17.0					3.2	17.0	2013	Under Construction	SCI Electric Manufacturer Co., (Thai) 100%
9	Xe Namnoy 1	Attapeu	Southern	15.0	70.118					15.0	70.118	2013	Under Construction	Phongkubhavy (Lao)
Sub Total (V3):				791.20	3,356.52					791.20	3,356.52			
5.2 IPP(e)														
1	Mekong Xayabuly	Xayabuly	Northern	1,285.0	6,103.8					60.0	420.0	2020		EDL 20%; CH Kanchang 30%; EDL-Gen 12.5%; Narec Synergy 25%; PT Construction 5%; Bangkok Expressway Public 7.5%
2	Hongsa lignite	Xayabuly	Northern	1,878.0	12,249.0					100.0	700.8	2015	Under Construction	IHSE (Lao) 20%, Katchabury (Thai) 40%, Banpu (Thai) 40%.
3	Theun Hnboun (Ex)	Borikhamxai	Central	220	1,440.0					0.0	0.0	2012.0	Under Construction	EDL 60%, GMS Laos 20%, Statkraft 20%.
4	Xekaman 1-Xanxai	Attapeu	Southern	290.0	1,096.0					64.0	240.0	2014	Under Construction	EDL 15%, VLP (Vietnam) 85%.
Sub Total (V4):				3,473.00	20,888.80					224.00	1,360.80			

ຈາກໜັງສືລາຍລະອຽດ ການວິໄນ ປະເມີນຄ່າ ມາດຕະຖານ ດ້ານການກຳນົດ ຕືອນ ມາດຕະຖານ ມາດຕະຖານ ມາດຕະຖານ ມາດຕະຖານ ມາດຕະຖານ ມາດຕະຖານ
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ແຜນພັດທະນາແຫຼ່ງຜະລິດພະລັງງານໄຟຟ້າແຕ່ ປີ 2012 ຫາປີ 2025

No	Power Plant	Location	Part	Installed Capacity		EDL		EDL-GEN 25%		Domestic		COD	Progress	Developer
				Inst.Cap (MW)	Energy (GWh)	Inst.Cap (MW)	Energy (GWh)	Inst.Cap (MW)	Energy (GWh)	Inst.Cap (MW)	Energy (GWh)			
VI ໂຄງການຂອງ IPP ທີ່ຢູ່ໃນໂອກາດນະຄົບປັດທະນາໂຄງການ (PDA)														
1	Nam Ngum 3	Vientiane	Central	460.0	2,047.0							2015		LHSE 23%, GMS Power 27%, Ratchabury (Thai) 25%, MARUBENI 25%.
2	Nam Ngiep 1	Bolikhamsai	Central	272.0	1,515.0					22.0	122.0	2018		Kansai(Japan), LHSE (Lao), EGAT (Thai)
3	Xekatom	Champasak	Southern	61.6	381.0					61.6	381.0			Kansai Electric (Japan)
4	Dan Sahong (Mekong)	Champasak	Southern	240.00	1,756.00					240.0	1,756.0	2020		EDL 20%; Mega First Corporation Berhad (malaysia)
5	Nam Mo	Xienkhuang	Northern	120.0	503.4					15.5	60.0			Hanoi Construction Investment, Trading and Techlogy Joint Stock Company (HCTI)
6	Nam Lik 1	Vientiane	Central	60.0	249.0					60.0	249.0	2015		EDL 10%; Hydro Engineering 40%; PT International 40%;
7	Sekong 4	Sekong	Southern	300.00	1,701.00					60.0	318.0	2020		Posco Engineering & Construction 10%
8	Nam Kong 1	Sekong	Southern	75.00	469.00					75.0	469.0	2020		LHSE; Region Oil Russia
9	Xepian-Xenamnoy	Champasak	Southern	390.00	1,788.00					40.0	178.8	2018		SK 26%; KOREA WESTERN POWER CO., Ltd 25%; Ratchabury (Thai) 25%; LHSE (Lao) 24%
10	Sekong 5	Sekong	Southern	330.00	1,613.00					190.0	1,131.0	2020		EDL; Region Oil Russia
11	Nam Phak	Champasak	Southern	140.0	500.0					140.0	500.0	2016		EDL 20%; Kabe Green Power (KGP) 80%
12	Nam Beng	Oudomxai	Northern	34.0	137.0					34.0	137.0	2015		EDL 20%; China National Electrical Equipment Cooperation 80%
13	Nam Mang 1	Bolikhamsai	Central	64.0	224.8					64.0	224.8	2015		EDL 10%; Dongfang 75%; A&C 10.45%; ຮາບທາ 4.25%
14	Nam Tha 1	Luangnamtha	Northern	148.0	756.0					148.0	756.0	2015		China Southern Grid Co., Ltd
15	Nam Seung 1	Luangprabang	Northern	42.0	167.00					42.0	167.0			Burhail International Co., Ltd
16	Nam Seung 2	Luangprabang	Northern	96.0	442.4					96.0	442.4	2018		Burhail International Co., Ltd
17	Nam Pha	Borkeo/Luangnamtha	Northern	130.0	594.0					130.0	594.0	2017		Burhail International Co., Ltd
18	Mekong Lathseua (Phoungoy)	Champasak	Southern	651.0	3,278.0					651.0	3,278.0	2020		Charoen Energy and Water Asia Co., Ltd
19	Iwekong (Pak Beng)	Oudomxai	Northern	921.0	4,775.0					150.0	660.0	2020		Datang International Power Cooperation
20	Mekong (Sanakham)	Vientiane	Central	640.0	3,696.7					200.0	1,120.0	2020		Datang International Power Cooperation
21	Nam Kong 2	Athapeu	Southern	66.00	263.00					66.0	263.0	2014		EDL 20%; Hoang Anh Gai Co., (HAGI)
22	Nam Xam 1	Houaphanh	Northern	94.0	323.1					94.0	323.1	2015		EDL 20%; Sai Gon Investment Group (SIG)
23	Nam Xam 3	Houaphanh	Northern	196.0	635.8					196.0	635.8	2015		EDL 20%; Sai Gon Investment Group (SIG)
24	Nam Phai	Vientiane	Central	86.0	419.50					86.0	419.50	2016		EDL 20%; Norinco International Cooperation Ltd.,
25	Nam Phoun	Xayabuly	Northern	50.0	245.79					50.0	245.8	2017		Sok Corporation
26	Nam Pot	Xienkhuang	Northern	14.5	70.53					15.0	70.5	2017		ACE Consultant
Sub Total (VI):				5,721.10	28,751.02					2,946.10	14,501.69			

VII ໂຄງການຂອງ IPP ທີ່ກໍ່ຕັ້ງສືບຕໍ່ການເປັນໄປໄດ້ ທີ່ ໂອກາດນະຄົບປັດທະນາເຂົ້າໃຈ (MOU)														
1	Nam Ham	Xayabuly	Northern	5.0	16.0					5.0	16.0	2014		EDL 30%; Pea Encom 67%; Cobrie 3%
2	Xetewa	Khammouan	Central	53.00	209.00					53.0	209.5	2018		Phonetsak Group (Laos/Thai)
3	Xekam 4	Athapeu	Southern	80.0	315.8					80.0	315.8	2020		Viet-Lao Power Company
4	Nam Feung 1	Vientiane	Central	28.00	113.20					28.0	113.2	2022		Yunnan Provincial Power Investment
5	Nam Bak 1	Vientiane	Central	163.0	744.0							2015		Southeast Asia Energy Ltd., (To be Transference to EDL)
6	Nam Bak 2	Vientiane	Central	40.45	205.0							2015		Southeast Asia Energy Ltd., (To be Transference to EDL)
7	Mekong Pakkai	Xayabuly	Northern	1,320.0	6,460.0					132.0	646.0	2020		Sinhydro Corporation Ltd and China National Electrics IMP & EXP Corp (CIEEC).
8	Mekong (Luang Prabang)	Luangprabang	Northern	1,200.0	7,380.0					114.0	598.9	2020		1) ຜູ້ບໍລິຫານກະເບີດຕໍ່ສັນຍາ MOU ດັ່ງເມັດທີ 1
9	Dak E Men	Xekong	Southern	130.0	526.2							2020		2) ຜູ້ບໍລິຫານກະເບີດຕໍ່ສັນຍາ MOU ດັ່ງເມັດທີ 1
10	Xekong 3 A (Upper)	Xekong	Southern	105.0	419.78					105.0	419.78	2020		Viet-Lao Power Company
11	Xekong 3 B (Lower)	Xekong	Southern	100.0	393.53					100.0	393.53	2020		Sanda Corporation

ຖານຂໍ້ມູນຂອງ ກະຊວງ ຕໍ່ປະມວນ ບັນທຶກກຸງ ດົນສະຫວັນນະ ພະສອນທຽນສັນ ສປປ ລາວ
 ທີ່: ສະໜອງ ສະໜອງ ສະໜອງ ສະໜອງ ສະໜອງ ສະໜອງ ສະໜອງ ສະໜອງ ສະໜອງ ສະໜອງ
 ອີເມວ: info@nppa.gov.la ວີເບີ: 021 414 4141, 021 414 4142

ແຜນພັດທະນາແຮງຜະລິດພະລັງງານໄຟຟ້າແຕ່ ປີ 2012 ຫາປີ 2025

No	Power Plant	Location	Part	Installed Capacity		EDL		EDL-GEN 25%		Domestic		Progress	Developer
				Inst.Cap (MW)	Energy (GWh)	Inst.Cap (MW)	Energy (GWh)	Inst.Cap (MW)	Energy (GWh)	Inst.Cap (MW)	Energy (GWh)		
9	Houay Champi	Champasak	Southern	5.00	27.30					5.0	27.3		PAXAKONE ROAD AND BRIDGE CONSTRUCTION CO., LTD (LAO)
	Sub Total (VIII):			88.50	493.00					88.50	493.00		
IX ໂຄງການພະລັງງານຄົດແທນ ແລະ ເຂື່ອນຂອງກວນໂອຍ													
1	Small hydropower plants			100.00	500.00					100.0	500.0	Planning	
2	Solars			15.00	27.40					15.0	27.4	Planning	

ຂະຫນາດ:

ລ/ດ	ລາຍລະອຽດ	ຈຳນວນ	MW	GWh
I	ເຂື່ອນທີ່ນຳໃຊ້ແລ້ວ			
1.1	ເຂື່ອນທີ່ໄດ້ແຈ້ງຂອງ EDL ແລະ EDL-Gen	10	390.70	1,877.60
1.2	ເຂື່ອນທີ່ໄດ້ແຈ້ງຂອງ IPP	11	2,610.90	12,804.40
	Total:	21	3,001.60	14,682.00
II	ເຂື່ອນທີ່ກຳລັງກໍ່ສ້າງ			
2.1	ໂຄງການຂອງ EDL	7	449.00	2,079.70
2.2	ໂຄງການຂອງ IPP	13	4,464.20	24,245.32
	Total:	20	4,913.20	26,325.02
III	ໂຄງການທີ່ກຳລັງສຶກສາ			
3.1	ໂຄງການຂອງ EDL	9	266.70	1,108.56
	Total:	9	266.70	1,108.56
IV	ໂຄງການທີ່ເຊັນ MOU ແລ້ວ			
4.1	ໂຄງການຂອງ IPP	45	8,663.40	41,970.03
	Total:	45	8,663.40	41,970.03
V	ໂຄງການທີ່ກຳລັງປະຕິບັດສັນຍາ PDA			
5.1	ໂຄງການຂອງ IPP	26	5,721.10	28,751.02
	Total:	26	5,721.10	28,751.02
VI	ໂຄງການ ຂອງ IPP ທີ່ເຊັນ MOU ກັບແຂວງ			
6.1	ໂຄງການຂອງ IPP	9	88.50	483.00
VII	Small Hydropower Plan		100.0	500.0
VIII	Renewable		15.00	27.40
	Grand Total:	130	22,769.50	113,857.03

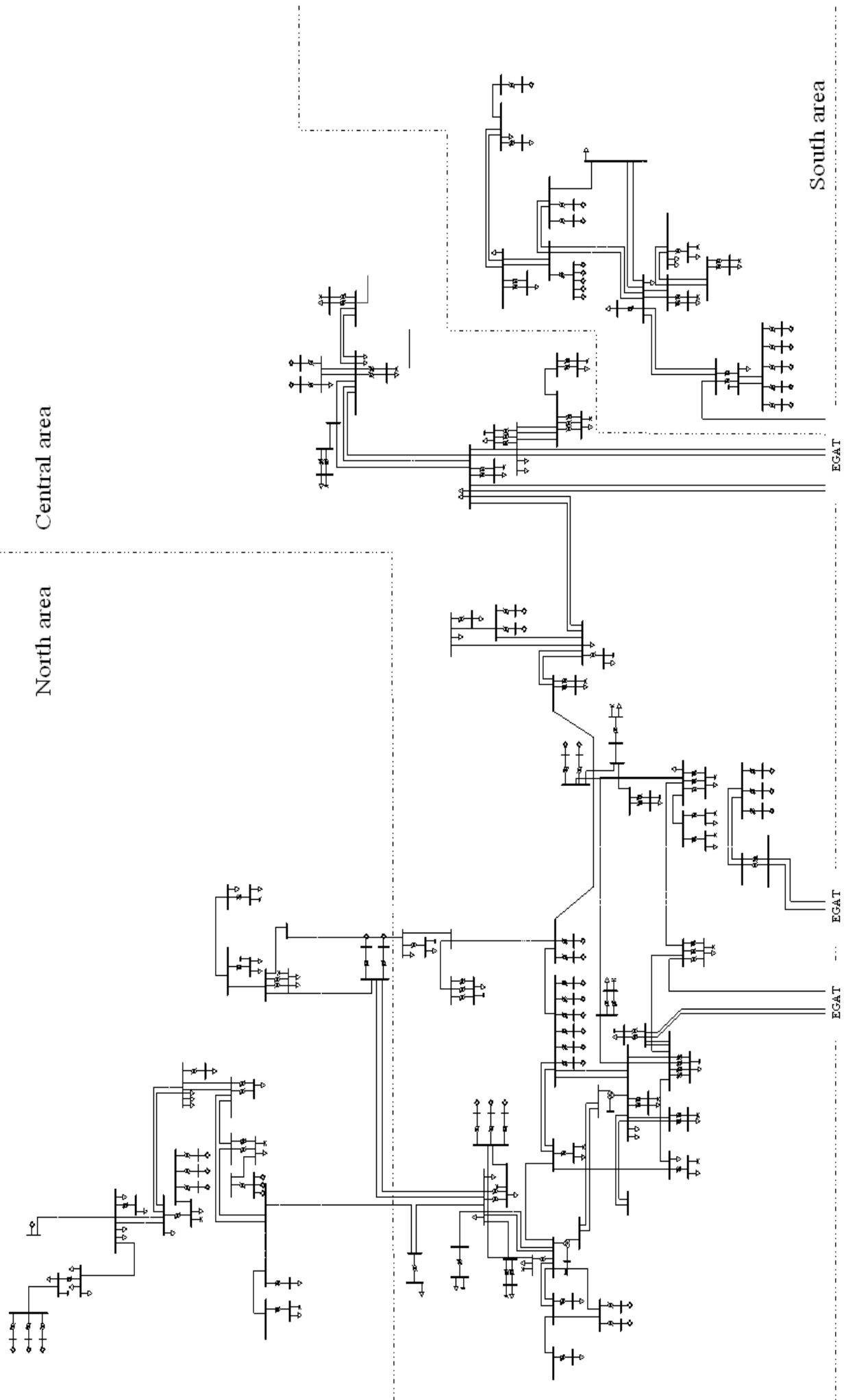
ເອກະຮານລັກສິດ:

- ສະຖິຕິໄຟຟ້າ ປີ 2011 ຂອງລັດວິສາຫະກິດໄຟຟ້າລາວ
- ບົດລາຍງານການເຮືອນໄຫວງງານ ຂອງກົມທຸລະກິດພະລັງງານ ປະຈຳ 6 ເດືອນ ຕົ້ນປີ 2012 (ກະຊວງພະລັງງານ ແລະ ບໍ່ແຮ່)
- ບົດວິກາສະດຸກກິດ-ເຕັກນິກ ຂອງໂຄງການ

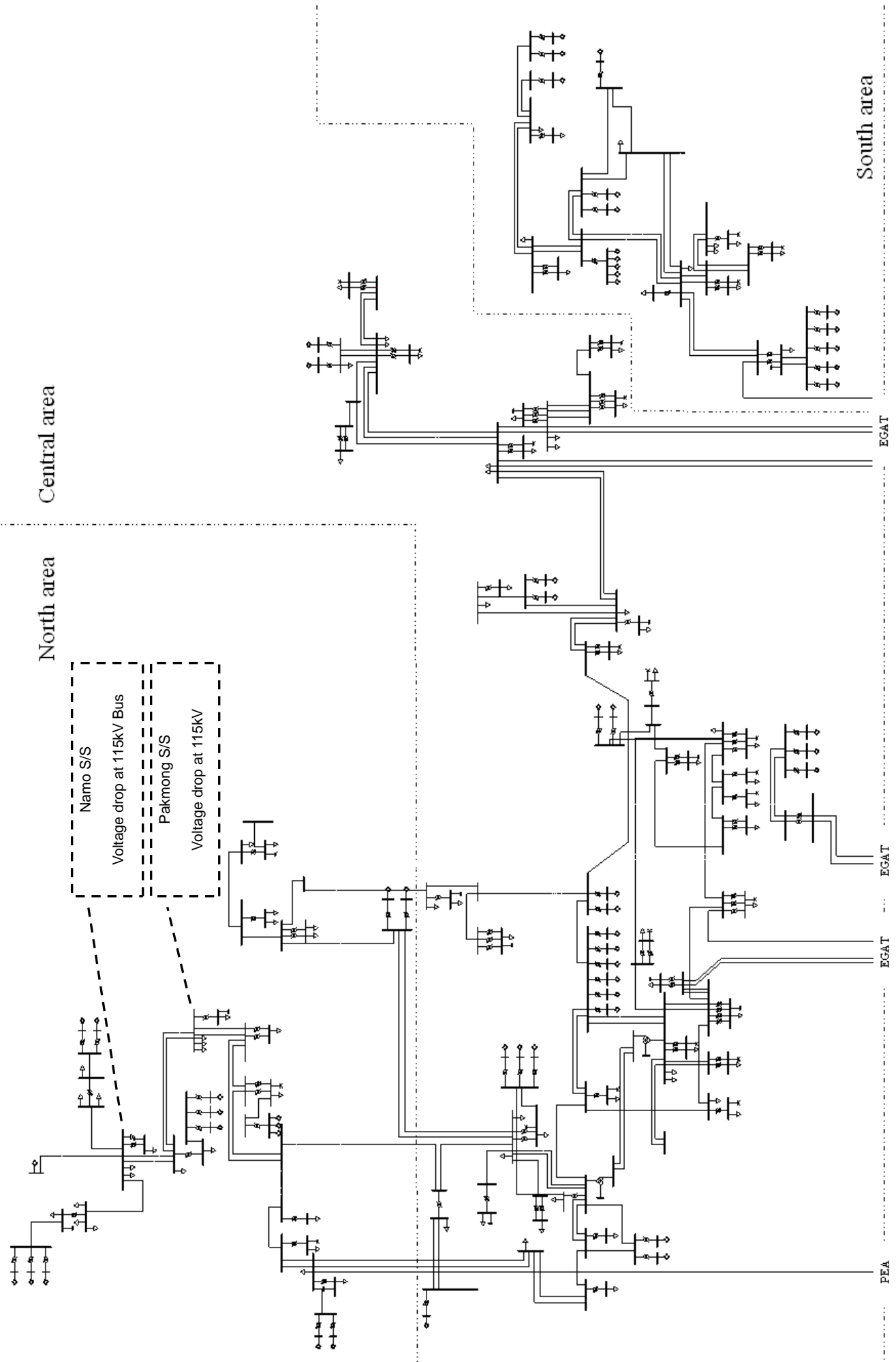
ຫົວໜ້າຝ່າຍກໍ່ສ້າງເຂື່ອນ

ຫົວໜ້າຫ້ອງການວິກາສາ ແຫ່ງຜະລິດພະລັງງານໄຟຟ້າ

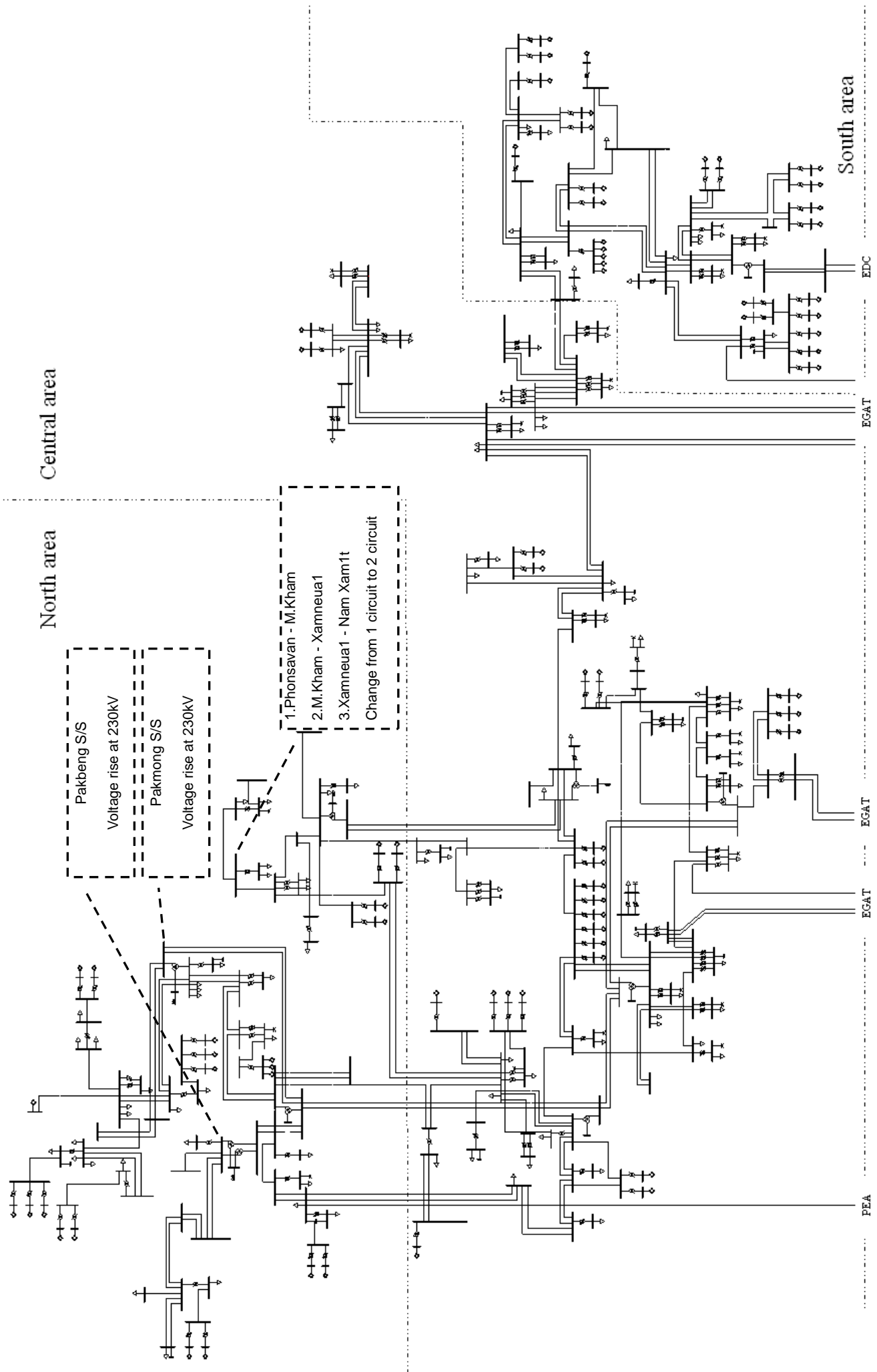
Appendix VIII



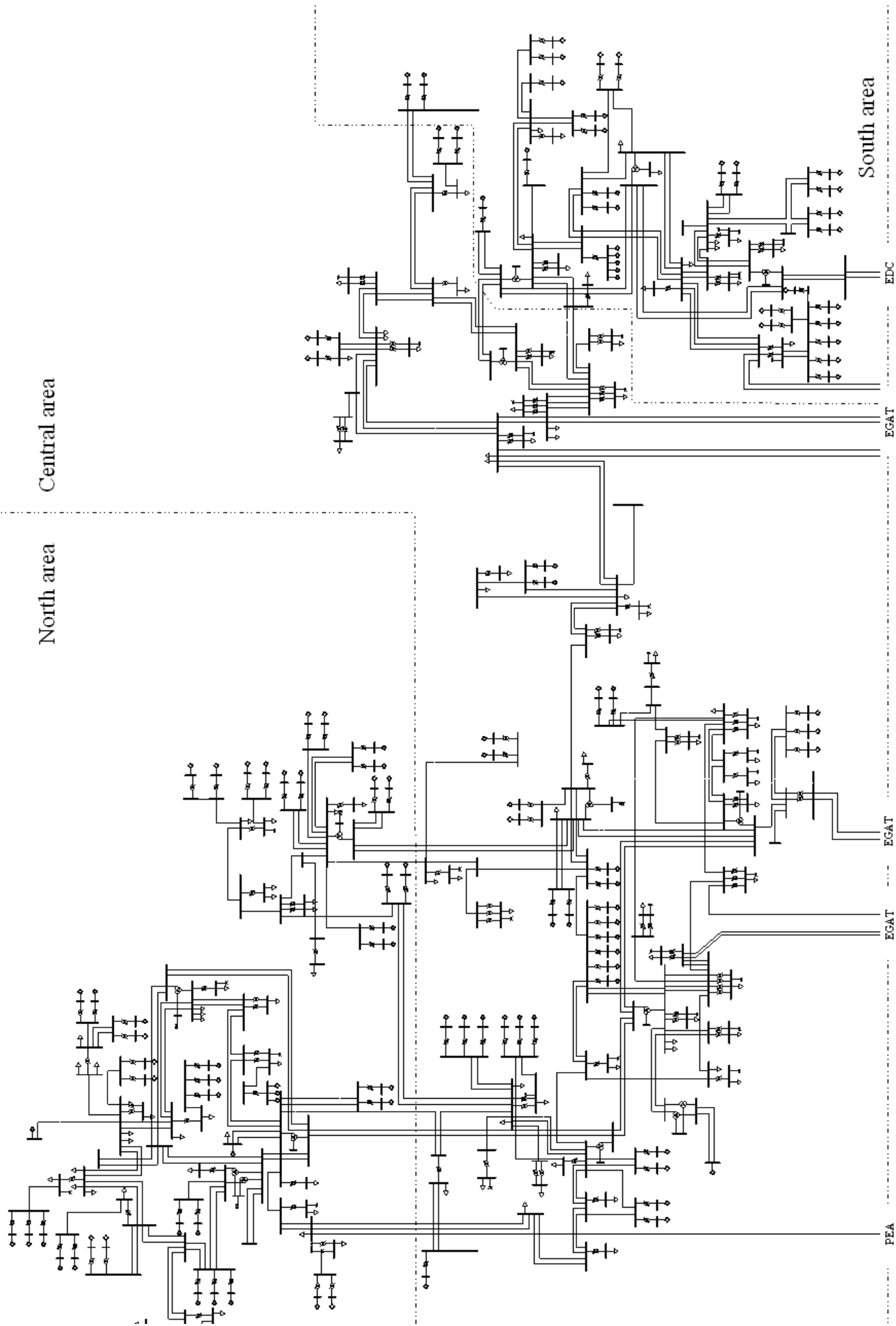
Appendix VIII-1 : System diagram (Yr 2012)



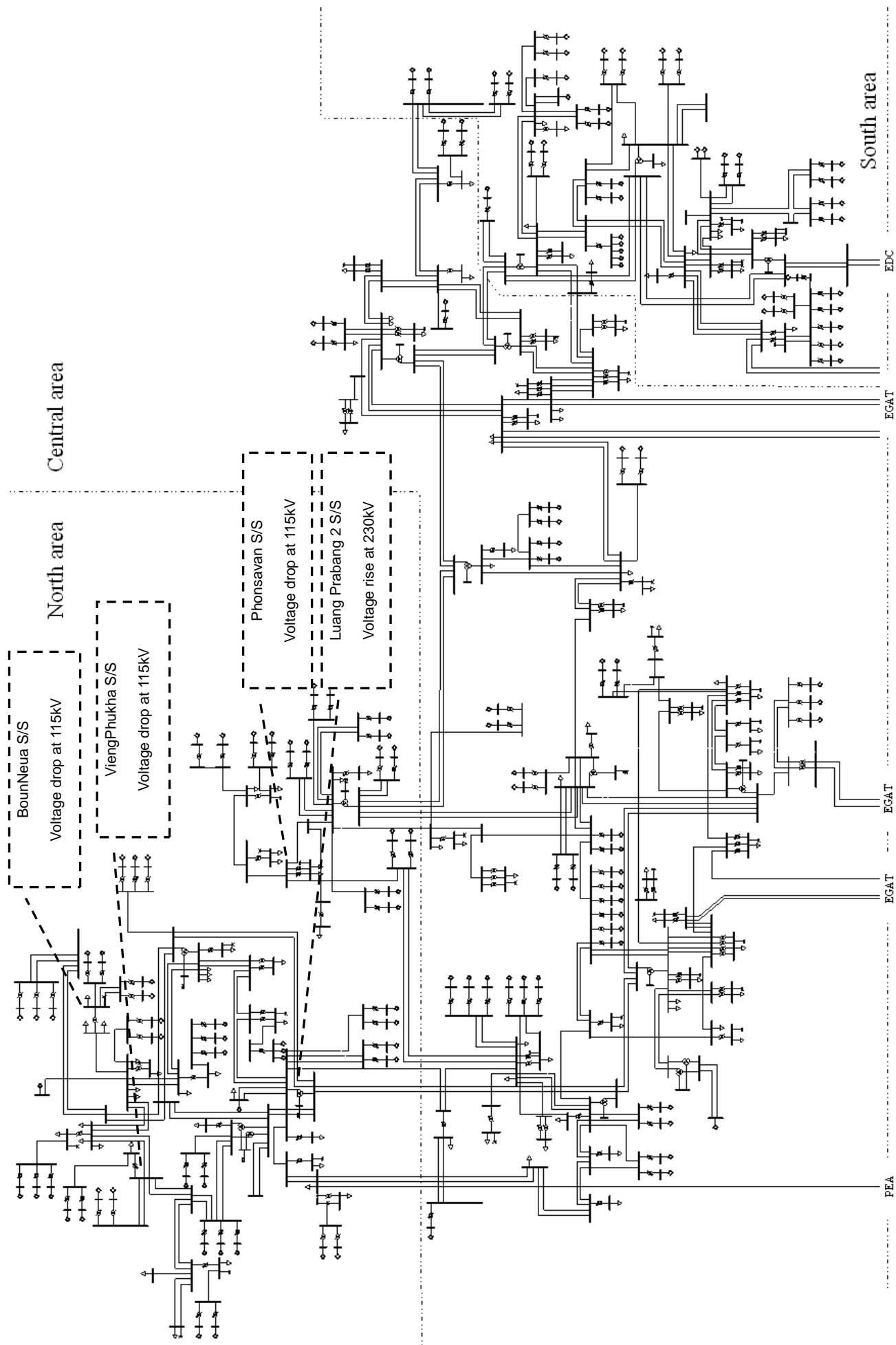
Appendix VIII-2 : System diagram (Yr 2013)



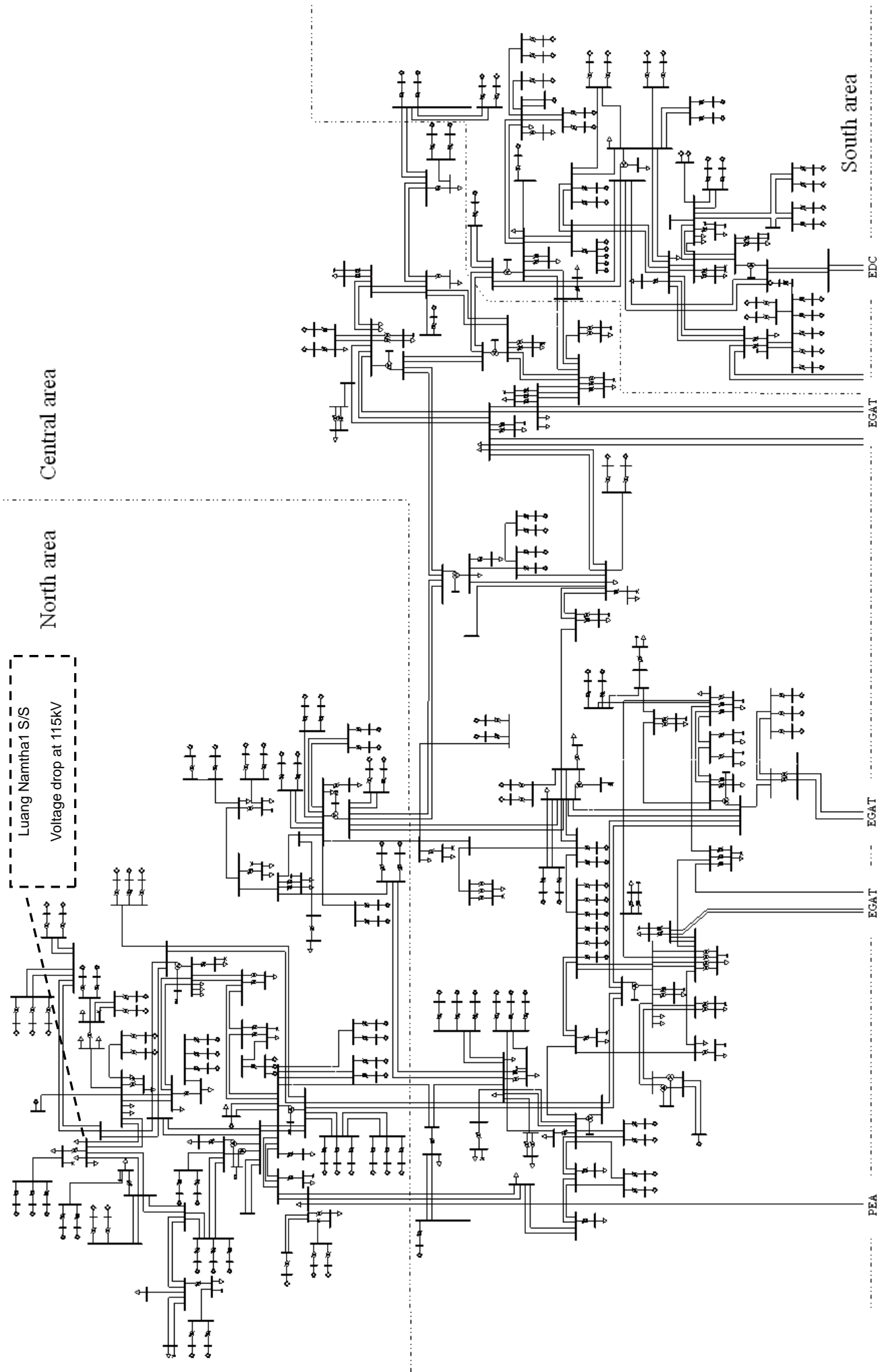
Appendix VIII-3 : System diagram (Yr 2014)



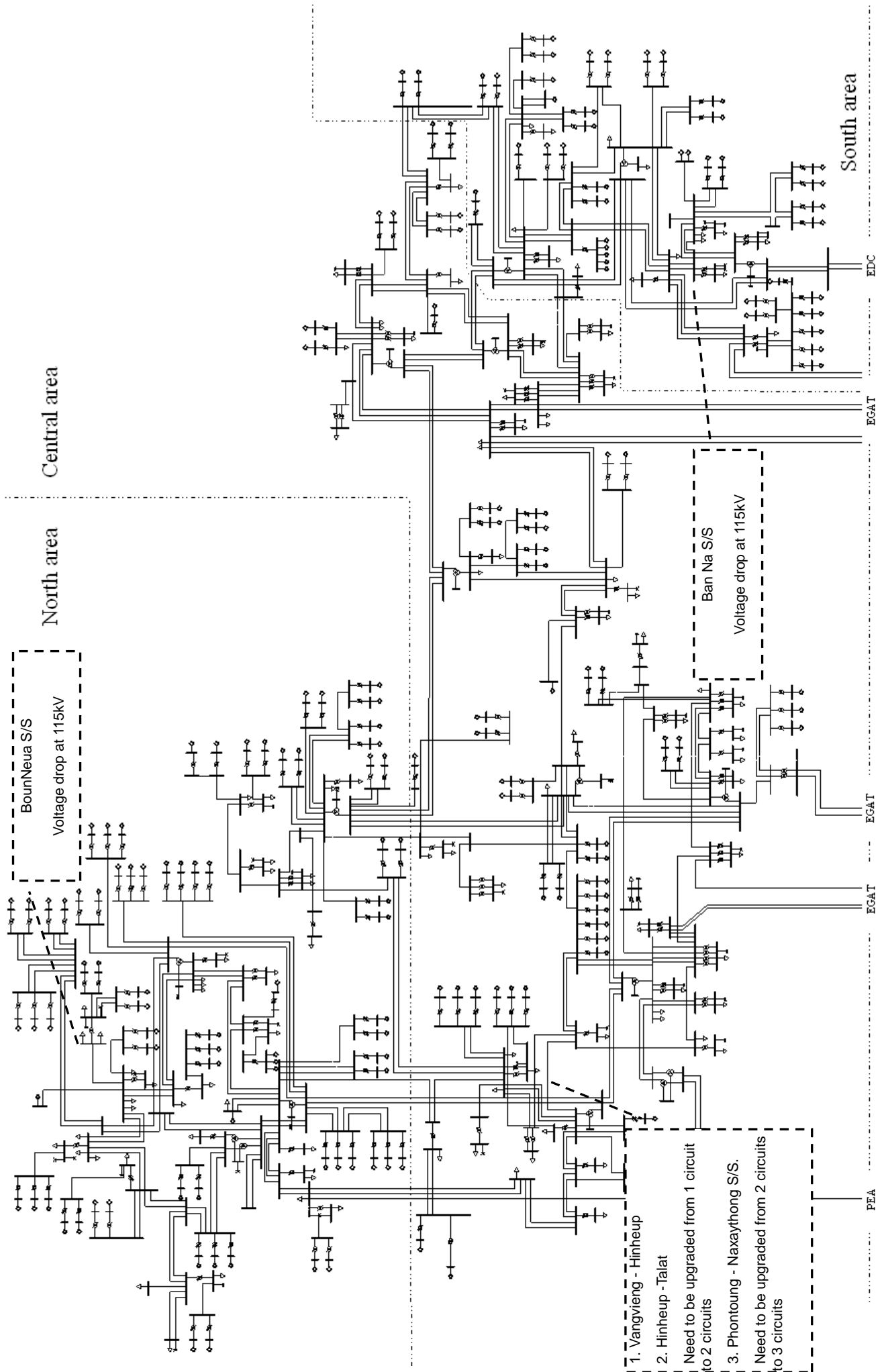
Appendix VIII-4 : System diagram (Yr 2015)



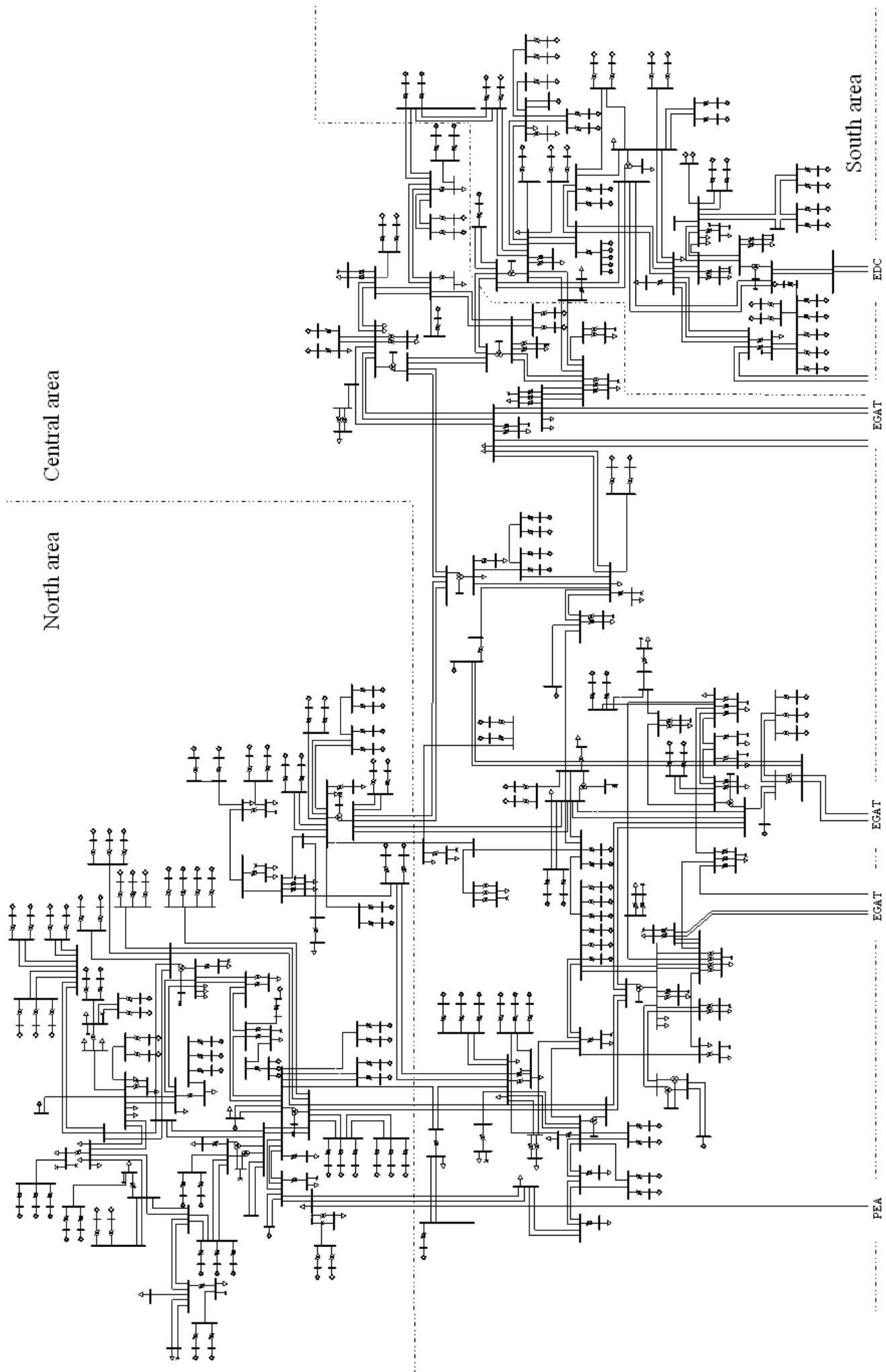
Appendix VIII-5 : System diagram (Yr 2016)



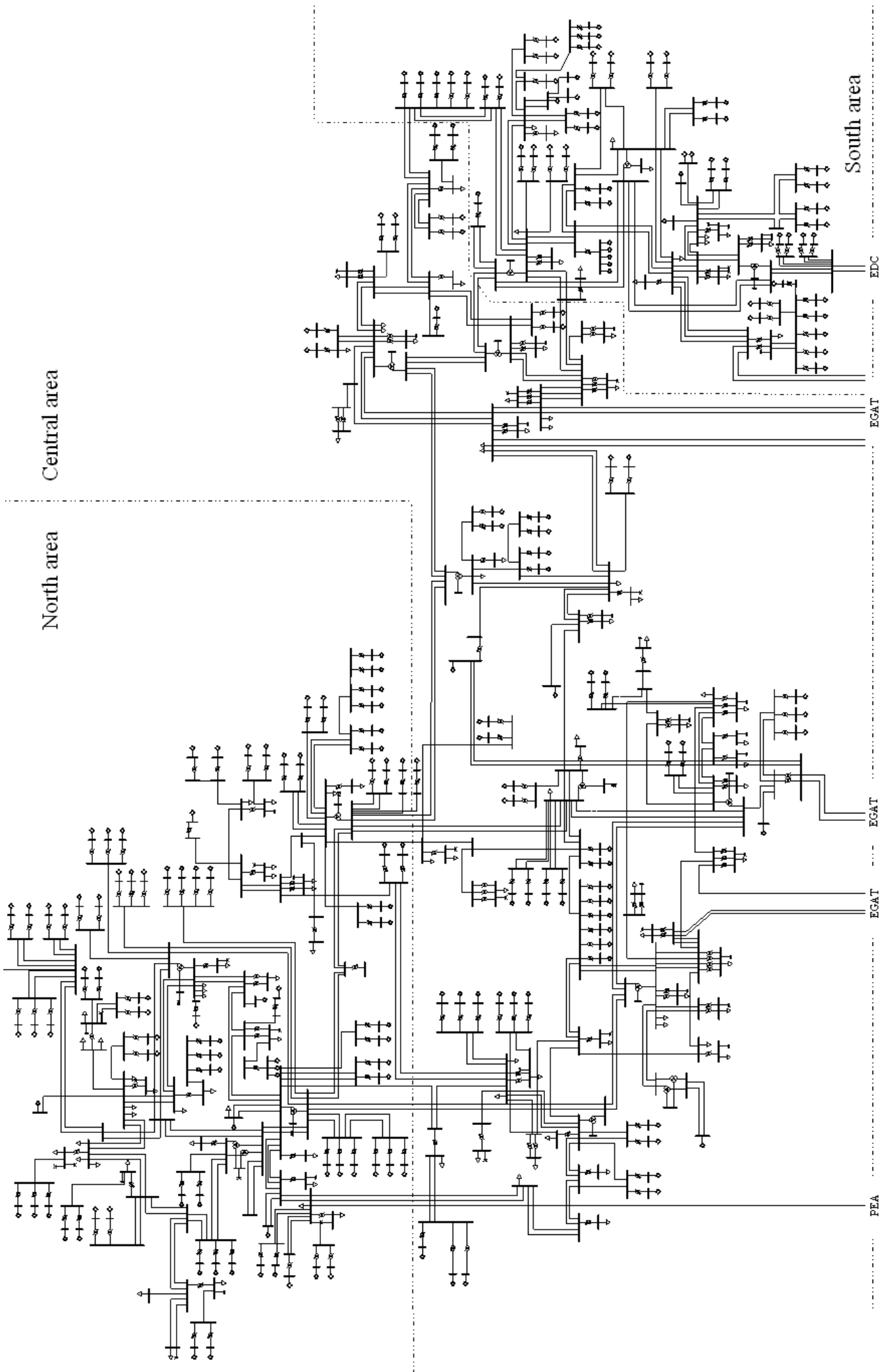
Appendix VIII-6 : System diagram (Yr 2017)



Appendix VIII-7 : System diagram (Yr 2018)



Appendix VIII-8 : System diagram (Yr 2019)



Appendix VIII-9 : System diagram (Yr 2020)

Appendix IX

Outline, schedule and participants of technical seminars

1. Technical seminar on the technical methodologies to revise current PDP

(1) Outline of the seminar

The technical seminar was held on October 10 2012 for the study team to present the methodology for the PDP revision with some measures which enhance the accuracy and credibility of the PDP. In the seminar, it was decided that the details of the econometric model in demand forecast, project evaluation in generation planning, demand/supply analysis and system analysis would be discussed on the working level (OJTs).

(2) Schedule and participants

<Schedule>

Date and time: From 13:30 to 16:30, October 10, 2012

Participants: In total 23 (including 4 from DEPP, 3 from EDL, 3 from EDL-Gen and 2 from JICA Laos office).

Venue: MEM meeting room

2. Technical seminar on the technical methodologies to revise current PDP

(1) Outline

The seminar for Technology Transfer on demand forecast was held for three days in the first week of April 2013. The purpose of the seminar was for the C/Ps to acquire the skills of the usage of the “Economate” together with the concept of newly introduced demand forecast methodology.

(2) Schedule and participants

The seminar was held for three days with participants 5 from DEPP and 4 from EDL as shown in the Table IX-1.

Table IX-1: Schedule for technology transfer

MONTH	DAY		TIME	AGENDA	PLACE	PARTICIPANT	
						DEPP*1 & EDL*2	
MAR	31	SUN					
APR	1	MON		A short meeting (Confirmation of Schedule and groupings)	DEPP	Mr.Litthanoulok (DEPP)	
	2	TUE	AM	9:00-9:30	Introduction (Object and Content of Tec.Transfer)	DEPP	All Members (DEPP&EDL)
				9:30-11:30*1	Explanation and Exercise (Estimation and Model Building)	DEPP	A team (1st lesson)
			Q&A and Exercise				
			PM	1:30-3:30*2	Explanation and Exercise (Estimation and Model Building)	DEPP	B team (1st lesson)
	Q&A and Exercise						
	3	WED	AM	9:30-11:30	Explanation and Exercise (Simulation and Reporting)	DEPP	B team (2nd lesson)
					Q&A and Exercise		
			PM	1:30-3:30	Explanation and Exercise (Simulation and Reporting)	DEPP	A team (2nd lesson)
					Q&A and Exercise		
4	THU	AM	9:30-11:30	Explanation of ieej Energy Model in Economate Version (for follow-up) *4	DEPP	Mr.Litthanoulok and at al. (Only DEPP)	
		PM	1:30-3:00	Problems and issues to be improved as a whole of PDP (Discussions)	EDL	Mr.viengthong and at al. (Only EDL)	

*1 DEPP The assigned staffs led by Mr.Litthanoulok (5persons at most)

*2 EDL The assigned staffs led by Mr.Viengthong (4persons at most)

*3 All the members need to be divided into 2 groups (A team and B team) if the total are more than five.

*4 Instructions and training as regard to "IEEJ ENRGY MODEL" formulated in the other JICA Project