

**PROJECT INFORMATION DOCUMENT (PID)
APPRAISAL STAGE**

Report No.: PIDA3740

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Project Name	Transmission Efficiency Project (TEP) (P131558)
Region	EAST ASIA AND PACIFIC
Country	Vietnam
Sector(s)	Transmission and Distribution of Electricity (100%)
Theme(s)	Infrastructure services for private sector development (100%)
Lending Instrument	Specific Investment Loan
Project ID	P131558
Borrower(s)	Socialist Republic of Vietnam
Implementing Agency	National Power Transmission Corporation (NPT)
Environmental Category	B-Partial Assessment
Date PID Prepared/Updated	21-Mar-2014
Date PID Approved/Disclosed	28-Mar-2014
Estimated Date of Appraisal Completion	31-Mar-2014
Estimated Date of Board Approval	29-May-2014
Decision	

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I. Project Context

Country Context

Vietnam has witnessed impressive economic growth and poverty reduction in the past 25 years and access to electricity services, which was below 50 percent in 1986 had grown to 98 percent in 2011, significantly contributing to poverty reduction. Using a ‘basic needs’ poverty line the poverty headcount fell from 58 percent in the early 1990s, to 14.5 percent by 2008, and is expected to be well under 10 percent by 2014.

The development of the energy sector has been a key factor in the recent industrialization process, creating jobs and increasing shared prosperity. While the energy access agenda drove electricity demand expansion in the 1990s, the industrial sector has taken the lead in the past decade. In the period 2000-2011, industrial demand grew 8.2 percent per year, more than any other sector. Employment by the industry sector has also grown substantially by 7 percent per year. Growth in the number of skilled professionals in the industry sector runs parallel to the strengthening of Small and Medium Enterprises (SMEs), which are the cornerstone of the Vietnamese economy. Currently, SMEs roughly represent 97 percent of the overall number of businesses, employ 77 percent of the workforce; and account for 80 percent of the retail market. Electricity supply to industry, medium, and small enterprises has been a crucial contributor to employment growth and with that to increased prosperity. In fact, the income of the bottom 40% grew on average 9% over the last

decade. The main centers for industrial growth and proliferation of SMEs are the greater Hanoi area and the greater Ho Chi Minh City (HCMC) area.

Sectoral and institutional Context

Sector Context: Vietnam Electricity (EVN) is active in all electricity activities, and is the single buyer and wholesaler. EVN buys power from generators and sells it to power distribution/retailing companies. Around two-thirds of generation capacity is owned by EVN, directly and through its subsidiaries. In 2010, non-EVN generation capacity represented about 32 percent of the national total of 26.9 GWh and was owned by both local investors - referred to as Independent Power Producers (IPPs) - and foreign investors through Build-Operate-Transfer (BOT) power generation projects.

Vietnam has undertaken reforms of its power sector leading to private participation in generation; and has implemented a competitive generation market. In 2008, as part of the reforms, the transmission business was separated into an autonomous EVN subsidiary, National Power Transmission Company (NPT), to provide a power transfer regime for generators and distributors. Today, although NPT is not fully independent, its revenues are determined by a separate transmission tariff.

Transmission of electricity at 500 kV and 220 kV is under NPT's ownership and responsibility. NPT is sub-divided into three regional Power Management Boards (PMBs) in charge of investments in and construction of new network assets and four Regional Power Transmission Companies (PTCs) charged with operation and maintenance of the assets. The entire electricity system is operated by the National Load Dispatch Center.

In recent years, electricity demand has grown at a rapid pace averaging 15% per year between 2008 and 2010 before dropping to 9% in 2011 due to the macroeconomic situation. Within this context, transmission investments are greatly needed to reduce network overloads, expand capacity to meet short-term demand, and reduce demand shedding during faults. With regard to the Hanoi area (north and south of the Red River), the 220 kV substations are already overloaded with an estimated 660 Megavolt Ampere (MVA) in capacity shortage. In the absence of new investments the capacity deficit will grow to 1022 MVA by 2017. With regard to capacity in the 500 kV substations, the deficit in 2015 will be 35 MVA and will rapidly grow in 2017 to up to 780 MVA, depending on the level of imports to the area. For the Ho Chi Minh City Area and the Mekong Delta there are very narrow operational margins in the 500 kV substations that serve the distribution companies. At the current state of the system deficits will appear in 2014 and will further increase by 2015 and 2016 by about 81 and 648 MVA, respectively.

Recent large scale brownout events have emphasized the importance of keeping up with short-term investments needs in transmission and improving grid operations. On May 22th 2013, a fault in a 500 kV transmission line created a contingency situation in which remaining transmission lines were overloaded at an unsafe operating point that triggered unavoidable frequency oscillations and large losses of generation (more than 10 GW and about 28,800 MWh of un-served energy). The event left more than 20 provinces in the south without electricity for close to three hours. Reliability is compromised when the system works as such load stress levels during normal or contingency conditions.

There is a need to strengthen the electricity grid's capacity to absorb modern forms of energy and ensuring it keeps up with demand growth as well as enabling intraregional shifting of power. More specifically, there is a potential to use the transmission system to take advantage of the country's natural gas and renewable energy resources - such as seasonal hydro. Lack of long-range transmission capabilities is limiting north-south power exchange resulting in relatively low utilization factors in generation plants in both north and south.

Realizing the large technical, institutional and financial challenges posed by the required expansion level as well as the challenges of moving toward an open power market EVN has identified the need to develop capacity in NPT and its regional subsidiaries on issues such as network planning, financial forecasting and performance monitoring. EVN has also launched and continues to implement an ambitious Smart Grid Program aiming to integrate new monitoring, protection and control technologies that will improve grid reliability and make efficient use of infrastructure while facilitating future integration of scaled up renewable energy sources.

The World Bank has been providing continuous support for the development of Vietnam's energy sector through various projects, including: (i) the System Efficiency Improvement, Equitization and Renewables (SEIER) project; (ii) the Trung Son Hydropower project; (iii) the Distribution Efficiency Project (DEP); (iv) the Transmission, Distribution and Disaster Reconstruction (TD1) project; (v) the Second Transmission and Distribution (TD2) project, (vi) the Rural Development (RD) project; (vii) the Rural Energy (RE I & II) project, (viii) the Renewable Energy Development Project (REDP); and (ix) the Power Sector Development Policy Operations (PDO series) Building on the Vietnam-specific experience in implementing energy sector projects generally and transmission investments specifically the World Bank is thus well-positioned to provide further assistance with the modernization of the energy sector in order to meet one of the country's key developmental challenges.

Looking ahead, a new series of reform measures will need to be implemented to enable a move towards a competitive wholesale market by 2015 as well as to address the financial sustainability of the sector. These reforms would need to address measures to deal with legacy debt and options for the divestment of EVN's generation assets. The World Bank Group (IBRD/IDA, IFC, MIGA) is actively engaged in all critical areas of sector reform, assisting with the design of the wholesale market, providing technical assistance to EVN on improving its financial performance and advising the GoV on a divestiture strategy for the Gencos bringing in best international experience.

Linkage to Shared Prosperity: Further development of the energy sector, in particular electricity supply, is paramount in order to prevent reversal of the prosperity sharing achievements gained through the country's electrification and industrialization process. According to Power Development Master Plan 7 (PDMP7), investment of about US\$800 million per year will be needed in the transmission network infrastructure for the next three-four years to keep up with demand growth and reduce current overloads and load shedding. Underinvesting in transmission would result in increased disruptions in the provision of electricity services, which would disproportionately affect the less affluent segments of the population, as indicated in the 2010 Vietnam's Poverty and Social Impact Assessment (PSIA).

Institutional Context: The power sector falls under the auspices of the Ministry of Industry and Trade (MoIT). Through its General Directorate of Energy (GDE), it exercises all state management functions for the energy sector and controls EVN. Within MoIT and directly under its Minister, the

Electricity Regulatory Authority of Vietnam (ERAV) is responsible for licensing, technical codes and performance standards for distribution and transmission, and monitoring the electricity market, supply security and compliance with technical and performance standards. Tariff setting is assigned in the amendment to the Electricity Law to MoIT and MoF.

II. Proposed Development Objectives

The Project Development Objective (PDO) is to improve the capacity, efficiency and reliability of electricity transmission services in selected parts of the network in Vietnam

III. Project Description

Component Name

Transmission Infrastructure Component

Comments (optional)

Component Name

Smart Grid Component

Comments (optional)

Component Name

Capacity Building and Institutional Strengthening Component

Comments (optional)

IV. Financing (in USD Million)

Total Project Cost:	730.00	Total Bank Financing:	500.00
Financing Gap:	0.00		
For Loans/Credits/Others			Amount
Borrower			230.00
International Bank for Reconstruction and Development			500.00
Total			730.00

V. Implementation

The Project will be implemented by the National Power Transmission Corporation (NPT), the Northern Power Management Board (NPMB), the Central Power Management Board (CPMB) and the Southern Power Management Board (SPMB). The three PMBs will implement all sub-projects. Further, NPT will manage the TA activities under the Project.

The organizational structure of agencies and entities involved in the NPT-part of the Project is illustrated and described in PID.

The Ministry of Industry and Trade (MoIT), as the Line Ministry, is responsible for ODA projects in the power sector, including (i) preparing the project detailed outline, which is the basis for setting up the ODA Fund Request List, to be approved by GOV; (ii) conducting appraisal and making

investment decisions (or approving technical assistance programs or project documents); (iii) monitoring the implementation of projects; and (iv) reviewing evaluation results of projects. Accordingly, MoIT will carry out such functions for this Project.

Vietnam Electricity (EVN) will coordinate as may be required with all Government agencies and NPT.

The National Power Transmission Corporation (NPT) will be the project owner and coordinate the work with the PMBs, which, in turn, will provide status updates during project implementation in accordance with their internal procedures. NPT will report to EVN. As the project owner, NPT will be responsible of: (i) project preparation; (ii) appraising and approving sub-projects and organizing the management and implementation of programs/projects; (iii) ensuring adequate and capable management resources; (iv) conducting appraisal and approval of technical design, total cost estimates and cost estimates of sub-projects; and (vii) signing the on-lending agreement with MoF for the loan, and repaying loan proceeds. NPT will also implement the TA part by its staff from various functional departments.

The Project Management Boards: According to the project implementation regulation of Vietnam, the project owner, in this case NPT, will implement the project by: (i) itself; and (ii) hiring or establishing implementing units or using existing implementing units to implement the project on its behalf. For this Project, NPT will use the existing project implementation units, namely: SPMB, CPMB and NCMP. As the implementing units, the PMBs will carry out daily activities such as: (i) preparation works; (ii) procurement, negotiating, signing and supervising the implementation of contracts, including approving of invoices; (iii) implementation of safeguards activities; and (iv) monitoring the implementation progress and report to NPT.

VI. Safeguard Policies (including public consultation)

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	x	
Natural Habitats OP/BP 4.04	x	
Forests OP/BP 4.36	x	
Pest Management OP 4.09		x
Physical Cultural Resources OP/BP 4.11	x	
Indigenous Peoples OP/BP 4.10	x	
Involuntary Resettlement OP/BP 4.12	x	
Safety of Dams OP/BP 4.37		x
Projects on International Waterways OP/BP 7.50		x
Projects in Disputed Areas OP/BP 7.60		x

Comments (optional)

VII. Contact point

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