

# Initial Environmental Examination

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Project Number: 42039-034  
November 2011

## Multitranche Financing Facility Socialist Republic of Viet Nam: Power Transmission Investment Program

500 kV/220 kV Bac Ninh<sup>2</sup>–Pho Noi Transmission Line

## CURRENCY EQUIVALENTS

(29 August 2011)

Currency unit	-	dong(D)
D1.00	-	\$0.000048
\$1.00	-	D20,820.00

## ABBREVIATIONS

ADB	-	Asian Development Bank
CHSP	-	Community health and safety plan
CPE	-	Commitment to Environmental Protection
DoNRE	-	Department of Natural Resources and Environment
DOT	-	Department of Industry and Trade
EA	-	Executing Agency
EIA	-	Environmental Impact Assessment
EMF	-	Electromagnetic field
EMoP	-	Environmental Monitoring Plan
EMP	-	Environmental Management Plan
EVN	-	Electricity of Viet Nam
GDP	-	Gross Domestic Product
GOV	-	Government of Socialist Republic of Viet Nam
IA	-	implementing Agency
ICB	-	International Competitive Bidding
IFC	-	International Finance Corporation
IEE	-	Initial Environmental Examination
MFF	-	Multi-tranche Financing Facility
MIT	-	Ministry of Industry and Trade
MOC	-	Ministry of Construction
MoNRE	-	Ministry of Natural Resources and Environment
NPPMB	-	Northern Power Project Management Board
NPT	-	National Power Transmission Corporation
PECC3	-	Power Engineering and Consulting Joint-stock Company No. 3
PPE	-	Personal Protective Equipment
REA	-	Rapid Environmental Assessment
ROW	-	Right-of-Way
SPS	-	ADB's Safeguard Policy Statement (2009)
WHO	-	World Health Organization

## WEIGHTS AND MEASURES

$^{\circ}\text{C}$	–	Celsius (centigrade)
ha	–	hectare
km	–	kilometer
$\text{km}^2$	–	square kilometer
kV	–	kilovolt
m	–	meter
$\text{m}^2$	–	square meter
$\text{m}^3$	–	cubic meter
$\text{m}^3/\text{day}$	–	cubic meter per day
m/s	–	meter per second
mm	–	millimeter
mm/kV	–	millimeter per kilovolt
t	–	ton

### NOTE

In this report, "\$" refers to US dollars.

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## EXECUTIVE SUMMARY

1. The Government of Socialist Republic of Viet Nam (GOV) has requested assistance from the Asian Development Bank (ADB) for the financing of transmission networks and substations that will ensure access to quality and reliable supply of electricity in Viet Nam. The Power Transmission Investment Program will be financed through a Multi-tranche Financing Facility (MFF) of the ADB. The power transmission network expansion program is expected contribute to improving system reliability and quality of electricity supply to industrial, commercial, and residential consumers throughout Viet Nam. It will (i) facilitate power transfers; (ii) remove transmission bottlenecks; and (iii) reduce transmission losses and voltage fluctuations.

2. Based on the energy blue print of Viet Nam, the government targets to connect 90% of the people to electricity by 2020 and subsequently 100% coverage by 2025. The extra capacity of new transmission and distribution networks will allow the grids to absorb the additional power plants coming on line in the coming years.

3. The construction of the 500/220kV Bac Ninh 2 – Pho Noi Transmission Line is one of the subprojects proposed for ADB financing under the MFF. The project will transmit power from the 220kV Bac Ninh 2 substation and associated 500kV grid in the northern region. The National Power Transmission Corporation (NPT) of Viet Nam will be the Executing Agency (EA) while the Northern Power Project Management Board (NPPMB) will be the Implementing Agency (IA) of the project.

4. The proposed project aims to:

- (i) receive power from Pho Noi 500kV substation through the 220kV power network and Pho Noi 220kV substation to supply power to the southwest regions of Bac Ninh province which includes Tien Du, Tu Son, and Thuan Thanh district, and a portion of Bac Ninh City;
- (ii) provide overload protection for the 220kV and 110kV grids; and
- (iii) link the 500kV-220kV power grid in the northern region and ensure energy security.

5. The 500/220kV Bac Ninh 2 – Pho Noi transmission line has a total length of about 30.5 km (kilometer)<sup>1</sup>. The transmission line will traverse the provinces of Bac Ninh and Hung Yen. Figure 1 shows the location of the proposed project. The right-of-way (ROW) will pass through the Tien Du district (Minh Dao, Canh Hung, Tan Chi, Lac Ve, Tri Phuong communes<sup>2</sup>), Thuan Thanh district (Nghia Dao, Cham Lo, An Binh, Mao Dien communes), Gia Binh district (Lang Ngam commune), Que Vo district (Chi Lang commune), in Bac Ninh province; and Van Lam district (Viet Hung commune) in Hung Yen province. The line will start at the 500/220kV Pho Noi substation and end at the 220/110kV Bac Ninh 2 substation

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<sup>1</sup> Feasibility Study Summary Report, 500/220kV Bac Ninh2 – Pho Noi Transmission Line, January 2011. EVN/PECC3

<sup>2</sup> Commune is a small administrative / community unit in Viet Nam.



6. An Initial Environmental Examination (IEE) was prepared for the project in 2010 by the Power Engineering Consulting Joint Stock Company 3 (PECC3), the consultants commissioned by NPPMB. Following the review of the IEE by the District Division of Natural Resource and Environment, the Certificate of Environmental Commitment was issued for the project on 25 October 2010 (Appendix 3).

7. Based on ADB's Safeguard Policy Statement 2009 (SPS), the proposed substation and connecting lines project is categorized as an Environmental Category B project which requires an IEE. The preparation of this IEE is guided by the requirements outlined in SPS 2009. Information in the IEE is based on the Feasibility Study and IEE prepared by PECC3, secondary data from other agencies, field inspection and information gathered during community and stakeholder consultations. The environmental impact assessment was carried out with the objectives of (i) establishing current environmental conditions; (ii) identifying key environmental issues; (iii) assessing magnitude of impacts and to provide mitigating measures; (iv) integrating the environmental issues in the project planning and design stage and (v) developing an updated environmental management plan for implementation, monitoring and reporting of the environmental mitigation and enhancement measures.

8. **Public Consultation.** Consultations with affected communities within the proposed site of the substation and along the alignment of the connecting lines have been carried out by NPPMB and PECC3 team on 25 to 29 July 2011. Representatives from the communes of Tri Phuong, Cam Hung, Ming Dao, Tan Chi, and Lac Ve in Tien Du District and Chi Lang, commune in Que Vo District, and the Lang Ngam in Gia Binh District, Mao Dien, Tram Lo, Nghia Dao and An Binh communes in Thuan Thanh District and Viet Hung commune in Van Lam District participated during the consultation meetings. The environment-related concerns raised by the stakeholders about the proposed project included requests for orderly construction activities and clean-up of the ground after the completion of the construction works, community health and safety during construction, health hazards due to electromagnetic field (EMF) exposure, provision of lightning protector to affected households, and minimizing impacts on trees and crops of the local by providing compensation for loss of production in construction areas temporarily affected by the project.. The results of annual monitoring of EMF levels when the project is already operational were also requested by stakeholders to be made public.

9. **Summary of Impacts and Mitigation Measures.** The evaluation of the pre-construction, construction, and operational phases of the project components indicates that the project will generate minor adverse impacts to the environment that can be reduced to acceptable levels through the implementation of practical mitigation measures normally associated with internationally recognized engineering practices. The key findings of the IEE are summarized below:

- (i) No significant natural habitats will be affected by the transmission line since the proposed project will be located within an area where the natural habitat has been greatly modified due to human settlements and agricultural activities.
- (ii) The project avoided environmentally sensitive areas, villages, settlements, and religious and cultural/heritage sites.

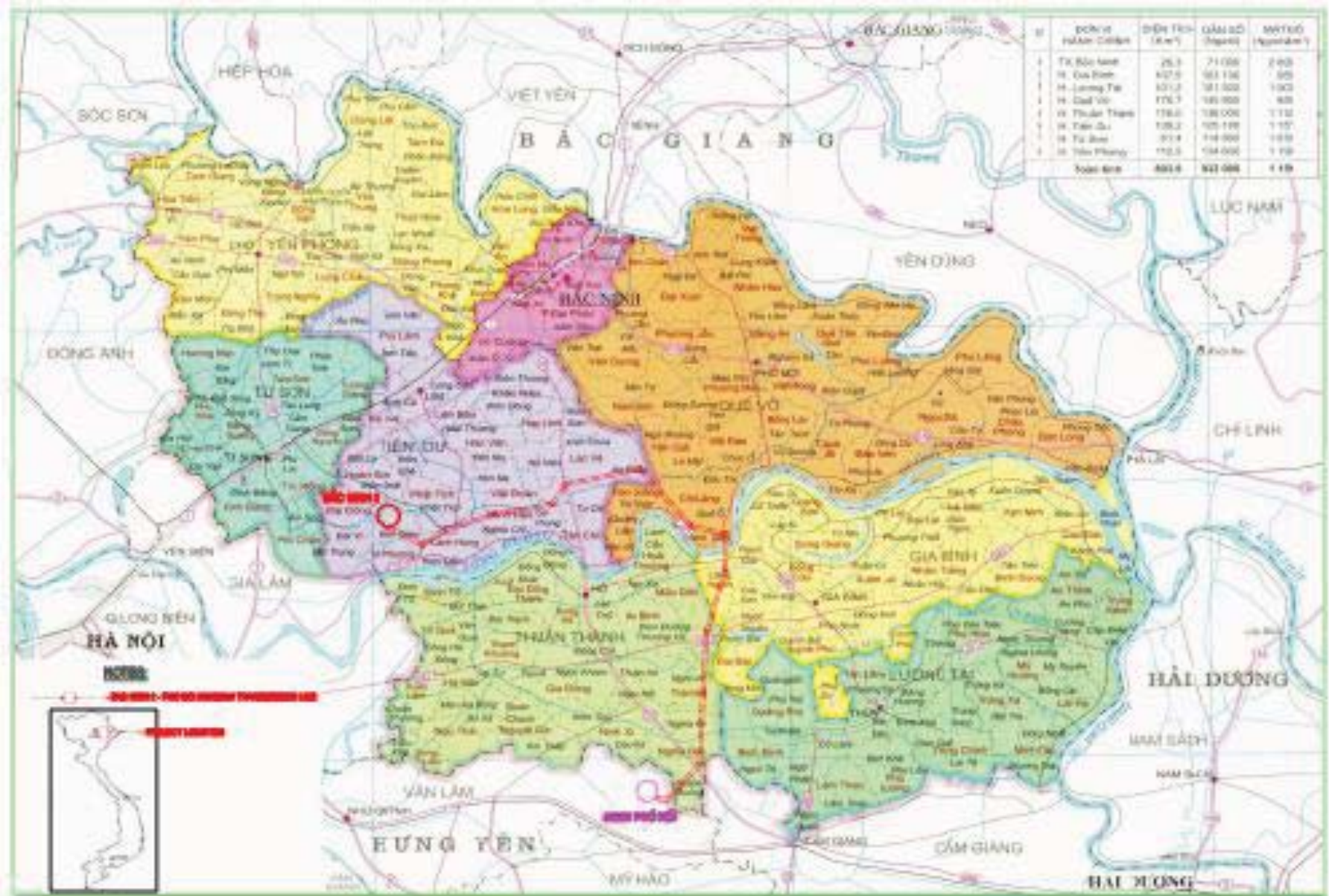


Figure 1: Location Map