Draft Initial Environmental Examination

June 2015

Preparation for Tranche 3 of ADB Multi-tranche Financing Facility for the Power Transmission Investment Program in Viet Nam

500 kV Chon Thanh Substation and 220 kV and 500 kV Connections
Binh Phuoc Province, Viet Nam

Draft Final

Prepared by
Central Viet Nam Power Projects Management Board:
Electricity of Viet Nam

NOTE

CURRENCY EQUIVALENTS
(as of 06 April 2015)

Currency Unit	–	Dong
D1.00	=	$0.000046
$1.00	=	D21,595

ABBREVIATIONS

ADB	Asian Development Bank
CPPMB	Central Vietnam Power Projects Management Board
CPC	Commune People's Committee
DCARC	District Compensation, assistance and resettlement committee
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
NPT	National Power Transmission Corporation
DONRE	Department of Natural Resources and Environment
IEE	Initial Environmental Examination
PTC4	Power Transmission Company No.4
ROW	Right of way
PPC	Provincial People's Committee
SPS	Safeguard Policy Statement (2009)
SS	Substation
TL	Transmission Line
UXO	Unexploded ordinance

WEIGHTS AND MEASURES

km:	kilometre
kg:	kilogram
kV:	kilovolt
ha:	hectare
mm:	millimetre

EXECUTIVE SUMMARY

The National Power Transmission Corporation (NPT) of Viet Nam requested the 500 kV Chon Thanh substation and transmission connections be included with Tranche III of Multi-tranche Financing Facility (MFF) for the Power Transmission Investment Program (PTIP) for Viet Nam. The goal of the PTIP is to develop and improve the quality and reliability of power supply throughout Viet Nam. The Chon Thanh 500 kV SS and 220 kV and 500 kV connections is one of nine individual subprojects that comprise Tranche III. The subproject will meet the immediate power needs of the rapidly developing provinces of Binh Phuoc and Binh Duong. The NPT is the executing agency of the subproject with the Central Viet Nam Power Projects Management Board (CPPMB) being the implementing agency.

Preliminary engineering designs, and safeguard requirements of the subproject have been completed including the approval of the EIA to meet the regulations of the Binh Phuoc Provincial Department of Natural Resources and Environment (DONRE) according to Decision No. 2946/QĐ-UBND dated 31/12/2014. The IEE presented herein was prepared pursuant to the ADB Safeguard Policy Statement (SPS, 2009). The IEEs of the other eight subprojects of Tranche III were prepared separately.

Subproject Summary

The two major components of the subproject are summarized below.

- Construction of new 500 kV substation (18.4 ha) in Minh Thanh commune, Chon Thanh district, Binh Phuoc province
- A 8.5 km 220 kV and a 1.0 km 500 kV connection lines to nearby transmission lines

Potential Impacts and Mitigations

The IEE was conducted using the preliminary subproject designs and available information on the affected environments. The results of the IEE indicate that the primary impact of the substation and the 8.5 km 220 and 1.0 km 500 kV connections will be the loss of rubber tree plantation on which the substation will be constructed. The single land owner of the affected area will lose approximately 18.4 ha of rubber plantation due to the footprint of the new substation and short access road. The 9 towers of the 8.5 km 220 kV and 1.0 km 500 kV connections to local transmission lines will require an estimated 10.4 ha of perennial agriculture land.

The subproject area is not near a protected area such as national park or nature reserve. The land use in the affected rea is dominated by industrial crops such as rubber tree. No primary forest, critical habitat[4], or rare or endangered wildlife species are reported in the area. There are no known avian migration flyways in the area with which the connector transmission lines could interfere.

Other impacts on the remote subproject area are the short-term construction disturbances of increased traffic and risk of traffic accidents along the rural roads near the site. The construction

[4] As per SPS (2009)

phase will also potentially create dust and noise along the roads and in the general area from construction vehicles and operation of heavy civil works equipment. These construction impacts along with the common issues of construction solid and liquid waste pollution, worker camp issues, reduced access, and increased risk of worker and public injury can be managed with standard construction practices and management guidelines (e.g., IFC / World Bank Environmental, Health and Safety Guidelines (2007) for electric power transmission and distribution projects).

There are only 4 houses located in the right-of-way of the 220 kV connection. Required resettlement and land acquisition compensation are addressed by the separate Resettlement Plan (RP). The sensitivity of the subproject to climate change is assessed as low.

An Environmental Management Plan (EMP) has been prepared for the implementation of the subproject which prescribes required impact mitigation and monitoring requirements. A Grievance Redress Mechanism (GRM) has been developed to facilitate resolution of affected people's concerns.

Conclusions

The IEE concludes that the feasibility design of subproject combined with available information on affected environments is sufficient to identify the scope of potential environmental impacts of the subprojects. Providing that significant changes to the subproject descriptions do not occur at the detailed design phase, and new sensitive environmental or cultural resources are not determined, further detailed environmental impact assessment (EIA) of the subproject is not required.

TABLE OF CONTENTS

I. INTRODUCTION

1. The National Power Transmission Corporation (NPT) of Viet Nam requested the 500 kV Chon Thanh substation and transmission connections be included with Tranche III of Multi-tranche Financing Facility (MFF) for the Power Transmission Investment Program (PTIP) for Viet Nam. The goal of the PTIP is to develop and improve the quality and reliability of power supply throughout Viet Nam. The Chon Thanh subproject is one of nine individual subprojects that comprise Tranche III.

2. The goal of the PTIP is to develop and improve the quality and reliability of electrical power supply throughout Viet Nam. The Chon Thanh subproject will meet the immediate power needs of the rapidly developing provinces of Binh Phuoc and Binh Duong. The NPT is the executing agency of the subproject with the Central Vietnam Power Projects Management Board (CPPMB) being the implementing agency.

3. The IEE presented herein was prepared pursuant to the requirements of the ADB SPS (2009). The IEEs of the other eight subprojects of Tranche III were prepared separately.

A. Assessment Context

4. The Chon Thanh subproject was assigned Environmental Category B pursuant to the ADB's Safeguard Policy[5] and recent good practice sourcebook guidance[6]. A category B project will have potential adverse impacts that are less adverse than the impacts of category A project, are site-specific, largely reversible, and can be mitigated with an environmental management plan[7]. The results of the rapid environmental assessment (REA) of the subproject are in Appendix A.

5. The IEE was prepared for the Chon Thanh subproject in the feasibility design stage using available data and information on sensitive ecological and cultural receptors that exist for the subproject site. The EIA required by the Viet Nam Law on Environmental Protection LEP (2014) and Decree 18/2015/ND-CP has been completed and approved by the Binh Phuoc Provincial Department of Natural Resources and Environment (DONRE) according to Decision No. 2946/QĐ-UBND dated 31/12/2014.

6. The detailed designs for the Chon Thanh subproject will follow after subproject approval. The Environmental Management Plan (EMP) that has been prepared for the subproject (see section IX) will need to be reviewed to ensure it meets the final detailed designs of the subproject.

II. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

7. The Chon Thanh 550 kV SS and 220 kV connector line subproject will be implemented according to the directives set down for use of Official Development Assistance (ODA) by GoV Decree No. 131/2006/ND-CP which was promulgated November 9, 2006, and in accordance with the provisions of for the parent Sector Project.

[5] ADB, 2009. Safeguard Policy Statement, ADB Policy Paper.
[6] ADB, 2012, Environmental Safeguards, A Good Practice Sourcebook, Draft.
[7] Footnote 6, pg 19.

A. Viet Nam Regulatory Framework for Environmental Assessment

8. The recently revised Viet Nam Environment Protection Law No. 55/2014/QH13 of 23 June 2015 (LEP 2015) prescribes the requirements for environmental assessment for international and domestic project interventions that affect natural and social environments. Following the revised the LEP (2014) the supporting Government Decree 29/2011/ND-CP on strategic environmental assessment (SEA), and environmental impact assessment (EIA) was replaced with Decree 18/2015/ND-CP, dated 14 February 2015. Supporting Circular 26/2011/TT-BTNMT remains unchanged. Decree 18 and Circular 26 are implemented in conjunction with Decree 80/2006/ND-CP, and Decree 21/2008/ND-CP.

9. The screening criteria of Decree 18 distinguish projects that require a full EIA from comparatively simpler projects that require an IEE [formerly EPC]. The difference between the government (GoV) EIA and IEE reflects the required level of assessment, and final review and appraisal that is required. The screening criteria for power transmission projects in the Decree 18 have changed and are now based on voltage. All projects undertaken with voltages exceeding 110 kV require EIAs.

10. Thus, the Chon Thanh 500 kV substation and 220 kV connector line subproject required a GoV EIA to satisfy the GoV regulatory framework. The EIA was prepared and approved in accordance with Vietnam Law and approved by the Binh Phuoc PPC on 31 December 2014. The GoV Environmental Compliance Certificate (ECC) for the subproject is found in Appendix C.

B. Power Transmission Sector Regulatory Framework

11. Table 1 summarized key laws and policies governing the power sector in Viet Nam that apply to the subproject. Specific legal directives and required approvals for the subproject are summarized in Table 2.

Table 1. Legal and regulatory framework for power sector in Viet Nam

Law and Decree	Description
Law	
Law No.24/2012/QH13	Amends and supplements articles of the Law on Electricity
Electricity Law 28/2004/QH11, issued: 3 December 2004	Prescribes development planning and investment for all aspects of the sector
Decree	
No. 81/2009/NĐ-CP, issued 17/08/2005	On the safety protection of high-voltage power grids
Decree No. 14/2014/NĐ-CP, issued 26 February 2014	Details regulations on enforcement power electrical safety
Decision	
Decision No. 854/QD-TTg dated July 10, 2012 of the Prime Minister	Approving the 5 year business and development investment plan from 2011 to 2015 of Electricity of Vietnam
Decision No. 5114 / QD-BCT dated July 23, 2013 of the Ministry of Industry and Trade	Approving the transmission grid development plan in 2013 taking into account the next four years.
Circular	

Law and Decree	Description
Circular No: 22/2010/TT-BXD, issued: 3 December 2010	Prescribes labour safety requirements in construction, maintenance, renovation, restoration, and decommissioning of sector facilities
Ministry of Industry and Trade Circular No. 03/2010/TT-BCT, issued: 22 January 2010	Regarding protection on high-voltage power network

Table 2. Legal documents and approvals required for the project

Documents and Approvals	Description
Decision No. 2946/QĐ-UBND of Binh Phuoc provincial People's Committee, dated 31 December 2014	Regarding approval of the EIA report for 500 kV Chon Thanh substation and 220 kV connection subproject, in Chon Thanh district, Binh Phuoc province.
Document No. 656/UBND-KHKT of Binh Phuoc provincial People's Committee, dated 11 March 2014	Regarding approval of 500 kV substation at zone 2, Minh Thanh commune, Chon Thanh district.
Document No. 2621/UBND-KHKT of Binh Phuoc provincial People's Committee dated 15 August 2014	Regarding agreement of selected alternative of 500 kV and 220kV connection lines to the 500kV Chon Thanh substation.

Land development and Construction Regulatory Framework.

12. Directives for land development and construction that are relevant to the power transmission sector are summarized in Table 3.

Table 3. Applicable land development and construction law and policy

Law and Decree	Description
Law	
Land Law No. 45/2013/QH13, date issue 29 Nov 2013	Governs powers and responsibilities of the State as owner of land and representative of the entire people for uniform administration of land and the rights and obligations of land users
Decree	
Decree No.43/2014/NĐ-CP, date issued 15 May 2014	Detailed rules for implementation of some articles of the Land Law
Decree No.47/2014/NĐ-CP, date issued 15 May 2014	Regulations on compensation, assistance and resettlement when the State acquires land

Law and Decree	Description
Decree No. 197/2004/ND-CP dated 03/12/2004	On comprensation support, and resettlement
Decree No.44/2014/NĐ-CP, date issued 15 May 2014	Regulations on land prices
Circulars	
Circular 14/2009/TT-BTNMT dated 01/10/2009	On detailed regulations on compensation, support and resettlement.
Circular No: 22/2010/TT-BXD, date issued: 03 December 2010	Prescribes labour safety requirements in construction, maintenance, renovation, restoration, and decommissioning of sector facilities

C. ADB Safeguard Policy

13. The ADB Safeguard Policy Statement (ADB SPS, 2009) along with the recent good safeguard practice sourcebook clarify the rationale, scope and content of an EA and supported by technical guidelines (e.g., Environmental Assessment Guidelines 2003). Projects are initially screened to determine the level of assessment that is required according to the following three environmental categories (A, B, or C).

14. Category A is assigned to projects that normally cause significant or major environmental impacts that are irreversible, diverse or unprecedented such as hydroelectric dams (an Environmental Impact Assessment is required). Category B projects have potential adverse impacts that are less adverse than those of category A, are site-specific, largely reversible, and for which mitigation measures can be designed more readily than for category A projects (an Initial Environmental Examination is required). Category C projects are likely to have minimal or no negative environmental impacts. An environmental assessment for Category C or FI projects is normally not required but environmental implications need to be reviewed.

D. Applicable Environmental Laws, Policy, Standards, and Guidelines

15. The following are additional applicable directives for environmental assessment and protection for domestic and international development in Viet Nam:

- Law on Water Resources No 08/1998/QH10.
- Biodiversity Law 20/2008/QH12 dated 13 November 2008
- Law on Cultural Heritage (Law No. 32/2009/QH12) supplementing the Cultural Heritage Law 28/2001/QH10 dated 29 June 2001
- Circular No. 26/2011/TT-BTNMT dated on 08/12/2011 by the Ministry of Natural Resources and Environment on Guidance for Strategic Environmental Assessment, Environmental Impact Assessment, and Environmental Protection Commitment.
- Decree No.12/2009/ND-CP which replaces Decree No. 16/2005/ND-CP and Decree No. 112/2006/ND-CP on Investment Management on Construction Projects.
- Decree No.59/2007/NĐ-CP dated on 09/4/2007 by the Government about Solid Waste Management.

- Decree No. 117/2009/ND-CP Regulation on sanctioning administrative violations in environmental protection, issued: 31/12/2009

- Decree No. 04/2009/ND-CP, Incentives and support for environment protection activities, issued: 14/01/2009.

- Viet Nam Labour Code 10/2012/QH/13 – 18 June 2012

- Decision No.3733/2002/QĐ-BYT issued by Ministry of Health dated on 10/10/2002 About the Application of 21 Labour Health and Safety Standards

- Decree No.140/2006/NĐ-CP dated on 22/11/2006 by the Government which regulates Environmental Protection, Designing, Approval and Implementation of Development Strategies, Plans, Programs and Projects.

- Decree No.80/2006/NĐ-CP dated on 09/8/2006 about Guiding for the Implementation of Some Articles in the Law on Environmental Protection (2005).

- Decree No.149/2004/NĐ-CP dated on 27/7/2004 about Issuing Permits for Water Resource Exploration, Exploitation and Utilization and Permits for Discharge to Water Bodies.

- Decision No.16/2008/QĐ-BTNMT dated on 31/12/2008 by the Ministry of Natural Resources and Environment about Promulgation of the National Technical Regulations for the Environment.

- Decision No.18/2007/QĐ-BTNMT dated on 05/11/2007 about Promulgation of Statistic Indicator System for the Field of Natural Resources and Environment.

- Decision No.23/2006/QĐ-BTNMT dated on 26/12/2006 about Promulgation of the List of Hazardous Waste.

- Decision No.27/2004/QĐ - BXD dated on 09-11-2004 by the Minister of Ministry of Construction on the promulgation of TCXDVN 320:2004 "Landfill for hazardous waste – Design standards"

- Decision No.22/2006/QĐ-BTNMT dated on 18/12/2006 about Obligations to Apply Vietnamese Standards for the Environment.

- Decision No.233/2006/QĐ-TTg dated on 18/10/2006 about approving the National Program on Labor Protection, Safety and Sanitation up to 2010.

- Decision No.35/2002/QD-BKHCNMT dated on 25/6/2002 about Promulgation of Series of Vietnamese Standards for the Environment.

- Decision No.60/2002/QĐ-BKHCNMT dated on 07/8/2002 about Promulgation of the Guidance for Disposal of Hazardous Wastes.

- Circular No. 16/2009/BTNMT and No. 25/2009/BTNMT on Promulgation of Vietnamese National Standards.

- Circular No.10/2007/TT-BTNMT dated on 22/10/2007 about Guidance for Assurance and Control of the Quality of Environmental Monitoring.

Environmental Standards and Regulations

Water quality:

- QCVN 01:2008/BYT – National technical regulations on quality of drinking water

- QCVN 08:2008/BTNMT – National technical regulations on quality of surface water
- QCVN 09:2008/BTNMT – National technical regulations on quality of groundwater
- QCVN 10:2008/BTNMT – National technical regulations on quality of coastal water
- QCVN 14:2008/BTNMT – National technical regulations on quality of domestic wastewater
- QCVN 24:2008/BTNMT– Industrial wastewater discharge standards
- QCVN 02:2009/BYT - National standard of domestic water supply
- TCVN 5502:2003 – Supplied water – Requirements for quality
- TCVN 6773:2000 – Water quality – Water quality for irrigational purposes
- TCVN 6774:2000 – Water quality – Water quality for aquaculture protection
- TCVN 7222:2002 – Water quality for concentrated domestic WWTP
- TCVN / QCVN - Standard methods for analyzing environmental quality

Air Quality:

- QCVN 05:2008 – Standards for ambient air quality
- QCVN 06:2008 – Maximum allowable concentration of hazardous substances in the ambient air
- TCVN 6438:2001 – Maximum permitted emission limits of exhausted gases from vehicles

Solid Waste Management:

- TCVN 6696:2009 – Solid waste – Sanitary landfill. General requirements for environmental protection.
- QCVN 07:2009– National technical regulations for classification of hazardous wastes
- QCVN 25:2009 – National technical regulations for wastewater of solid waste sites
- QCVN 15:2008/BTNMT: - National regulation on allowable pesticide residues in soil
- QCVN 03:2008/BTNMT: - National regulation heavy metals concentrations in soil

Vibration and Noise:

- QCVN 26:2010/BTNMT: national technical standard for noise
- TCVN 6962: 2001 Allowable vibration level for public and residential areas
- TCVN 6962:2001: - Allowable vibration and shock from construction activities

International Guidelines

- IFC/World Bank Group, 2007. EHS Guidelines, *for* Electric Power Transmission & Distribution
- AWWA Standard Methods for Examination of Water and Wastewater

International Environmental Management Conventions

16. Viet Nam is signatory to the following relevant international conventions:

- Stockholm Convention on Persistent Organic Pollutants (2002) see link http://www.pops.int/documents/implementation/nips/submissions/nip_vietnam.pdf
- Ramsar Convention (formerly Convention on Wetlands of International Importance , especially as Waterfowl Habitat) (1971))
- Protocol to Amend the Convention on Wetlands of International Importance especially as Waterfowl Habitat, Paris, 1982
- Convention Concerning the Protection of the World Cultural and Natural Heritage (1972)
- Convention on International Trade in Endangered Species Wild Fauna and Flora (1973)
- FAO International Code of Conduct on the Distribution and Use of Pesticides
- Vienna Convention for the Protection of the Ozone Layer (1985)
- Montreal Protocol on Substances that Deplete the Ozone Layer (1987)

- Copenhagen Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, Copenhagen (1992)
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989)
- United Nations Framework Convention on Climate Change (1992)
- Convention on Biological Diversity (1992)

III. SUBPROJECT DESCRIPTION

A. Scope of subproject

17. The 500 kV Chon Thanh substation subproject consists of: (i) a new 18 ha substation; and (ii) a 8.5 km 220 kV connector line and a 10.0km 500 kV connector line to nearby transmission lines. The 18 ha substation also includes a new short access road to the SS.

1. Features

18. The substation and new access road will be located entirely in a rubber plantation about 6.5 km from Highway No.14 in Minh Thanh commune, Chon Thanh district, Binh Phuoc province (Figure 1). The 220 kV and 500 kV connector lines will be located mostly on rubber and some cassava plantation lands. The Vietnamese geographic coordinates of the substation are provided in Table 4.

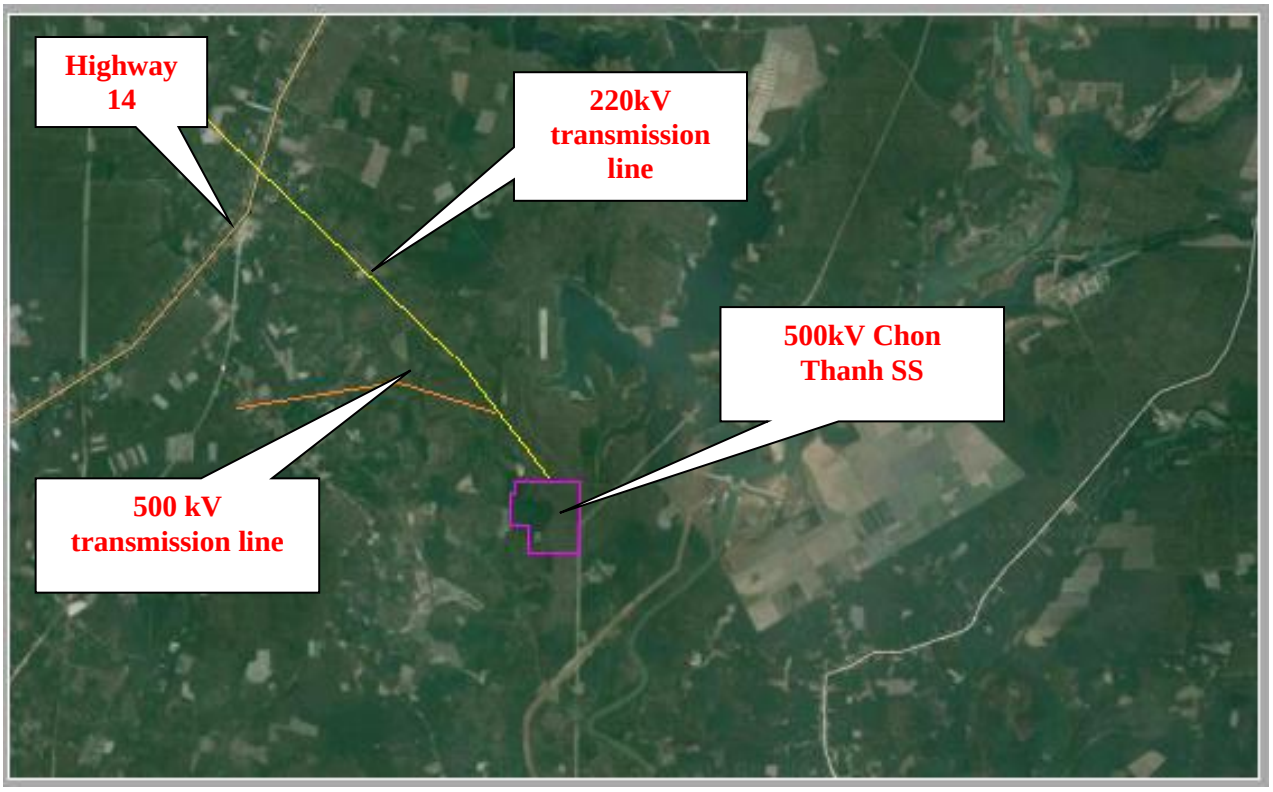
Table 4. Vietnamese geographic coordinates of Chon Thanh substation

No.	Coordinates (VN2000)	
	X	Y
1	1,262,754	603,795
2	1,262,518	603,596
3	1,262,341	603,965
4	1,262,633	603,315
5	1,263,258	603,799
6	1,263,213	604,008

Source: Feasibility study, PECC3, 12/2013

19. The macro specifications of the new substation are summarized in Table 5 with the detailed plan shown in Figure 2.

Figure 1. 500 kV Chong Thanh substation and 220 and 500 kV connector lines



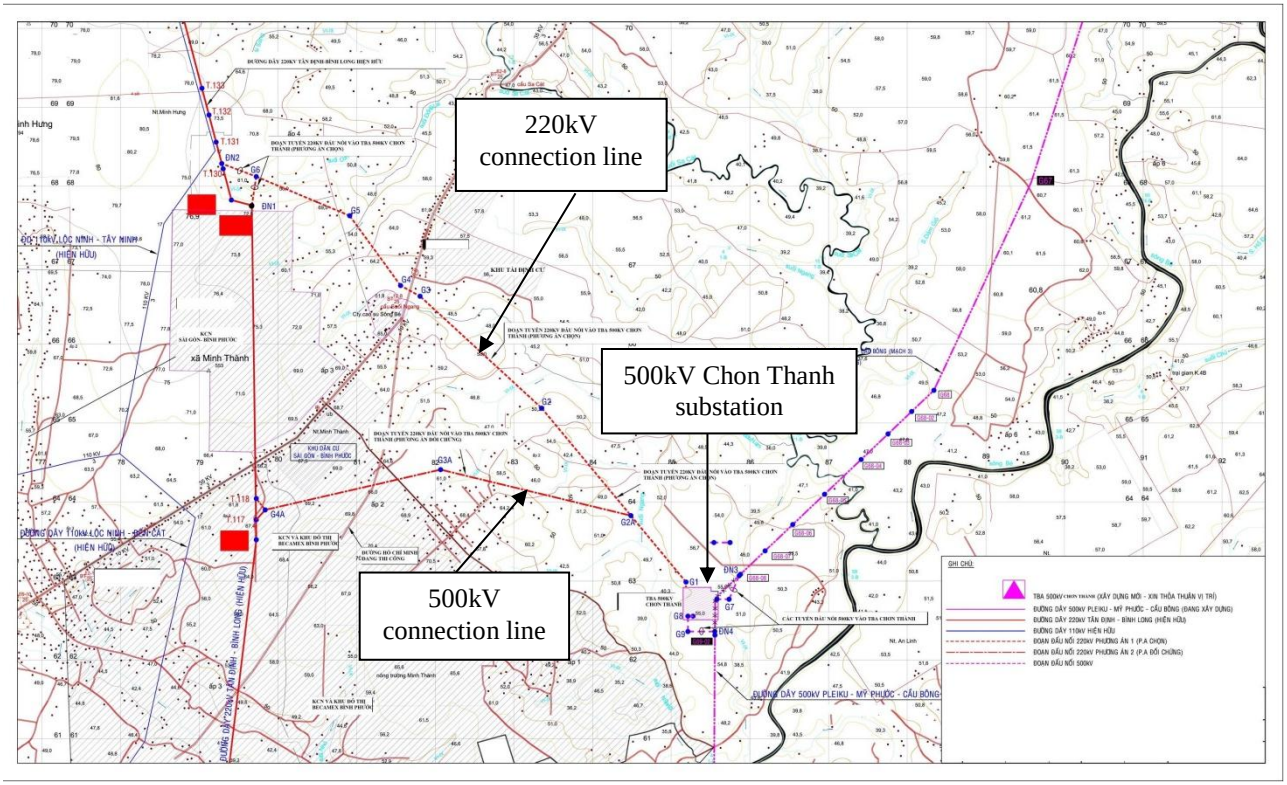


Table 5. Specifications of 500 kV Chon Thanh substation

Component	Specification
Area of the substation and access road	18.4 ha
Voltage	500/220/110kV
Capacity	1 transformer 500/220kV-900MVA and 1 transformer 220/110kV -250MVA (Phase 1 - 2017). 1 transformer 500/220kV-900MVA and 01 transformer 220/110kV-250MVA (Phase 2 - 2025)/.

20. The specifications of the 220 kV and 500 kV connector lines are summarized in Table 6:

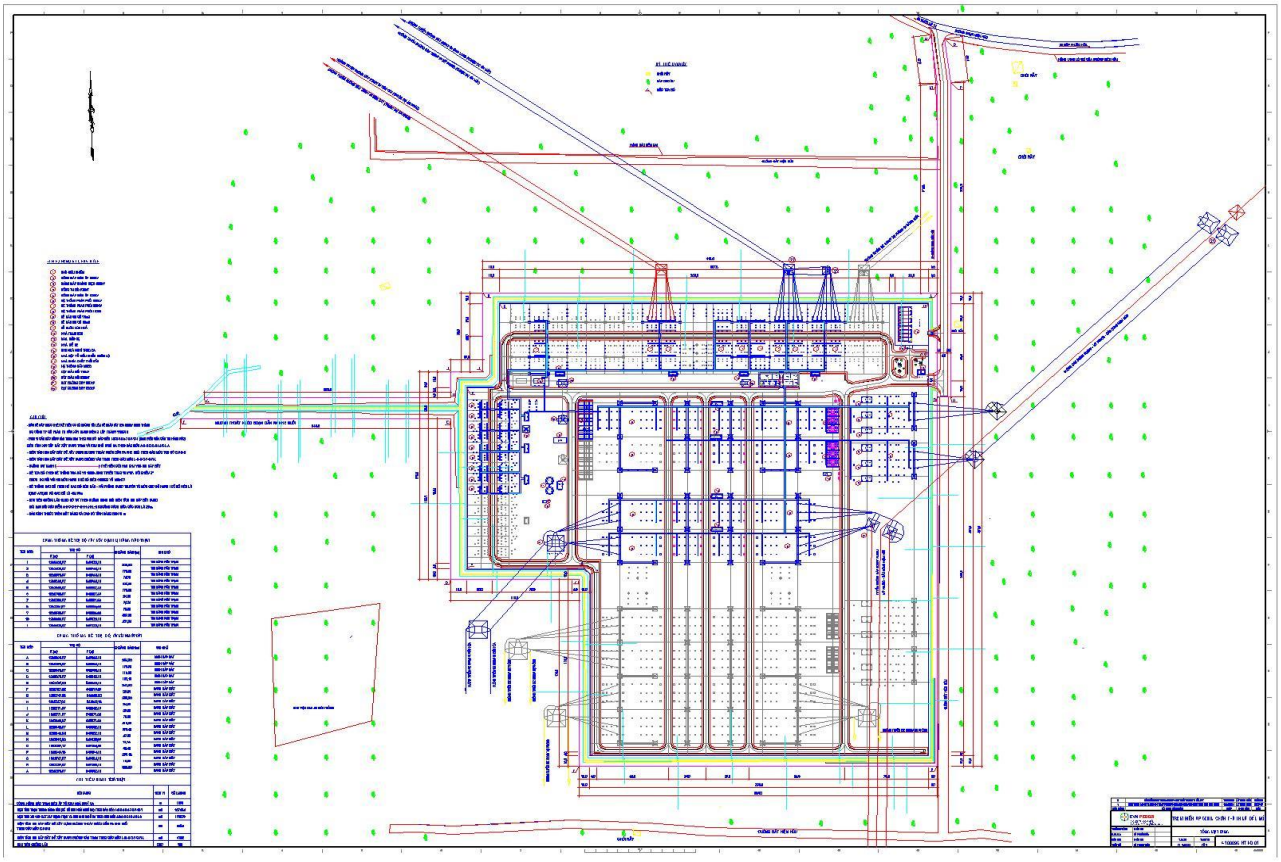
Table 6. Connector transmission lines of new substation.

Specification	220 kV TL	500 kV TL
Starting point	Busbar 220 kV of 500 kV Chon Thanh substation	Busbar 500kV of 500kV Chon Thanh substation
Ending point	DN1 and DN2	DN3 and DN4
Connection with transmission line	220 kV Tan Dinh - Binh Long TL	500kV Pleiku - My Phuoc - Cau Bong TL
Voltage (kV)	220	500
Number of circuit	4	2 & 2
Length (km)	8.505	1.081
Conductor	ACSR-400/51 & 3xACSR-400/51	4xACSR-330/43
Lightning	1x PASTEL-181	2xPHLOX-116
Optical cable (Type24 fiber optic mode)	OPGW-180	OPGW-90
Insulator	Glass (or ceramic, polymer)	Glass (or ceramic, polymer)
Tower	Using galvanized steel tower	Using galvanized steel tower
Foundation	Using in-paced reinforced concrete foundation	Using in-paced reinforced concrete foundation
Earthwire	Pile – Tia	Pile – Tia
Suspension towers (number)	6	3

Specification	220 kV TL	500 kV TL
Connection points (number)	2	2

Source: FS of the 500kV Chon Thanh substation and connection, PECC3, 12/2013

Figure 2. Equipment layout of the 500 kV Chon Thanh substation



Source: FS of the 500kV Chon Thanh substation and connection, PECC3, 12/2013

21. Profiles of 220 kV and 500 kV connector towers and, 220 kV tower foundation are shown in Figures 3 and 4.

Figure 3. Profile of tower and foundation of 200 kV connector line

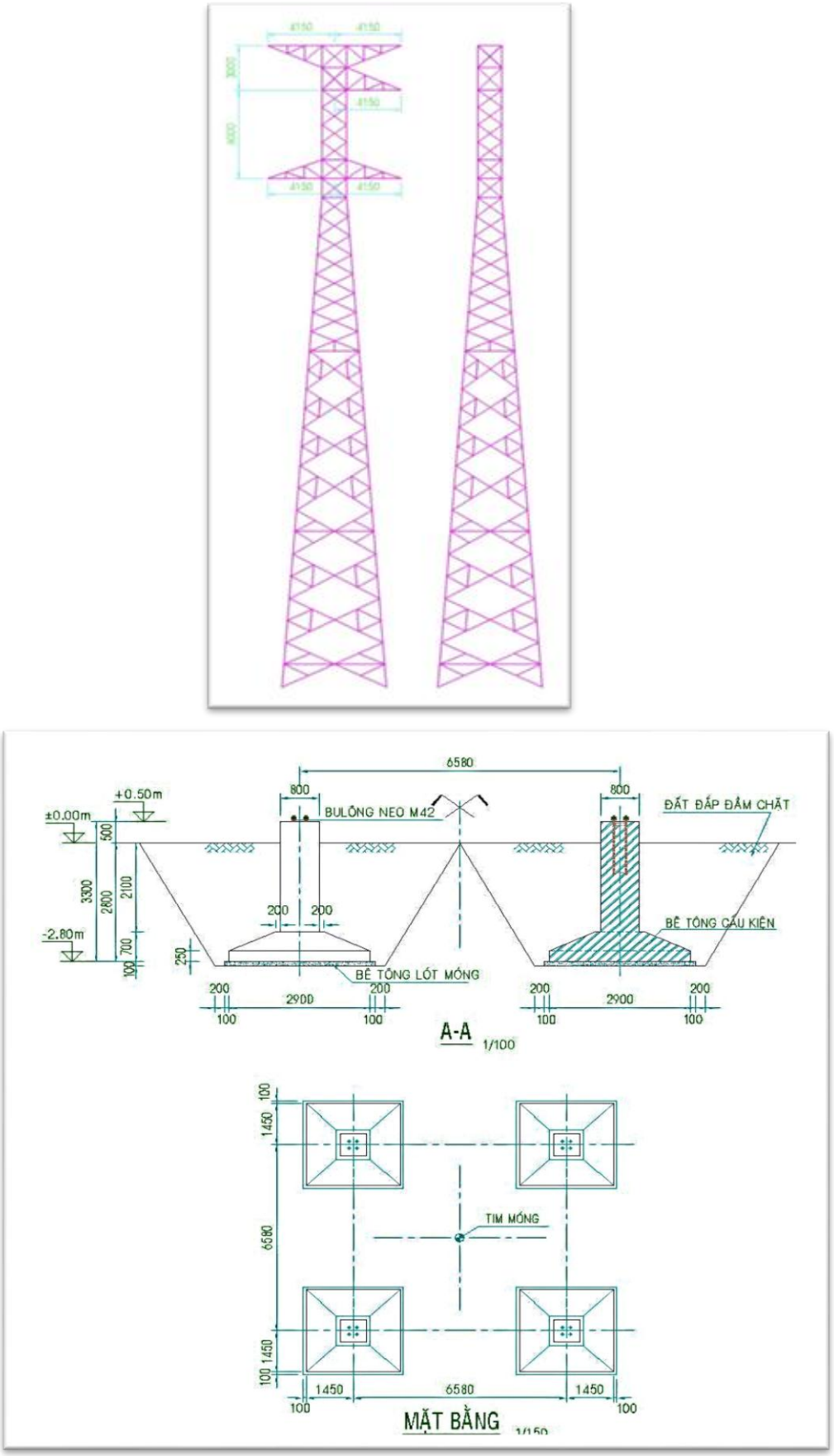
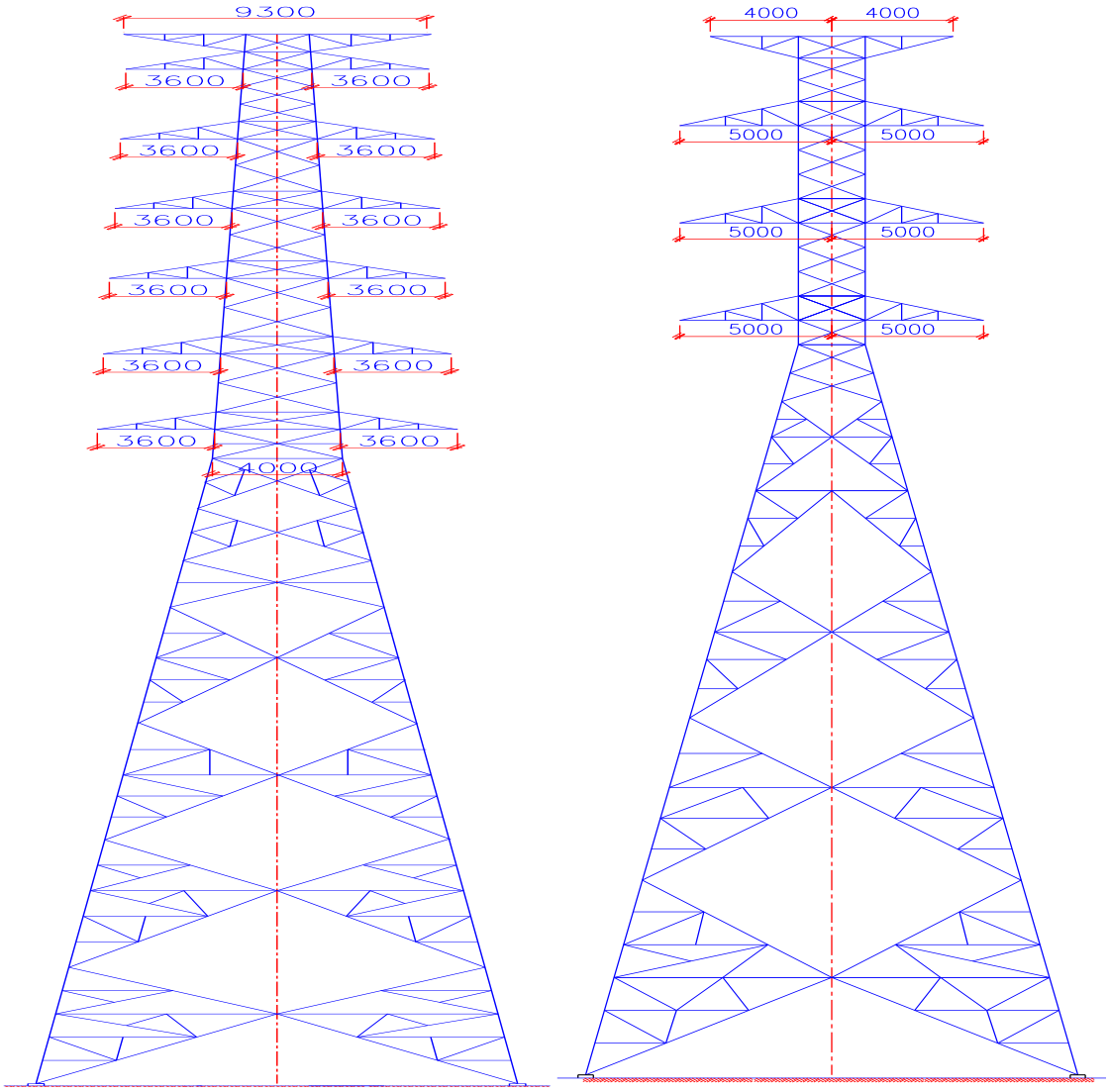


Figure 4. Tower profiles of 550 kV connector line



IV. DESCRIPTION OF THE ENVIRONMENT

A. Physical Environment

1. Climate

22. The subproject area is situated in the Southern Climate Zone which is typified by a tropical monsoon climate characterized by high temperatures and high humidity. Annually the climate is divided into two seasons defined by: (i) a rainy season from May to November; and (ii) a dry season extending typically from December to April. Local weather is strongly influenced by the northeast monsoon rainfall, temperature, and low humidity. From the Statistical Yearbook 2013 of Binh Phuoc province the characteristics of the major weather variables are summarized below and in Table 7.

a. Temperature

23. The average lowest (December) and highest (April) temperatures recorded are approximately 13.5^{o}C and 35.0^{0}C. Annual average temperature is 26 - 27^{o}C.

b. Humidity

24. Relative humidity of the region varies from 70% to 80% with the highest humidity occurring during the rainy season (May - November). The lack of evaporation during the dry season results in the lowest humidity levels (December - April).

c. Rainfall

25. Rainfall is unevenly distributed in the subproject area. The average annual rainfall is 2,400-2,800 mm and with 90% of annual rainfall falling during the rainy season. From January to February almost no rain falls while during September-October rainfall is highest. Binh Phuoc Province is little affected by the typhoons due to the distance from the coast.

Wind

26. Binh Phuoc province is affected by wind from the the east, northeast and southwest with the dry season wind from the east, northeas at an average speed is 3.5 m/s. The prevailing rainy season winds are from the east, southwest at an average speed of 3.2 m/s.

Table 7. Major climate variables of Binh Binh Phuoc province 2011-2013

Metric	2011	2012	2013
Average annual temperature (^{0}C)	26.7	27.2	27.2
Average annual hours of sunshine (hours)	2,641	2,649	2,620
Average annual rainfall (mm)	2,7851.1	2,794.0	2,494.6
Average annual humidity (%)	78.0	79.1	77.8

Source: Statistical Yearbook 2013 of Binh Phuoc province

2. Air quality

27. Ambient air quality in the subproject area was analyzed by the Center for Energy and Environment August 2014. Tables 8 and 9 summarize the air quality from three sampling stations in the vicinity of the subproject area.

Table 8. Air quality monitoring stations in subproject area

Sampling Station	Time	Location	Vietnamese Coordinates
KK1	8h30AM, 05/08/2014	The central location of the substation area	X: 1263064; Y: 603394
KK2	9h30AM, 05/08/2014	The asphalt road access Phuoc Hoa dam intersects with the 500kV Pleiku - My Phuoc - Cau Bong Transmission line	X: 1263947; Y: 603418
KK3	11h30 AM, AM 05/08/2014	Intersection point between 220kV connecting line and Highway 14	X: 1206356; Y: 603363

Table 9. Ambient air quality in the subproject area

Sampling Station	Dust (mg/m^3)	SO_2 (mg/m^3)	NO_2 (mg/m^3)	CO (mg/m^3)	Noise (dBA)
KK1	0.2	0.02	0.03	1.1	51-56
KK2	0.26	0.04	0.12	2.26	62-65
KK3	0.24	0.03	0.08	1.76	54-58
Method of analysis	TCVN 5067-1995	TCVN 5971-1995	TCVN 6137-1996	52 TCN 352-89	Acoumeter
QCVN 05:2013/BTNMT standard	**0.3**	**0.35**	**0.2**	**30**	**-**
QCVN 26:2010/BTNMT standard	**-**	**-**	**-**	**-**	**70**

Source: The EIA of the 500kV Chon Thanh substation and connection

28. The data in Table 9 indicate that ambient air quality in the subproject area is good. Noise levels meet the current air quality standards of QCVN 26:2010/BTNMT, and QCVN 05:2013/BTNMT for SO_2, NO_2, CO, and dust.

3. Topography, Geology and Soils

29. The Chon Thanh substation will be built in a rubber plantation area of Zone 2, Minh Thanh Commune, Chon Thanh District, Binh Phuoc Province at an average elevation 48.2m. The topography at the substation area is relatively flat with slope ranging from 45.8m to 53m.

30. According to the official map of Geology and Minerals at 1/200.000 scale of the Department of Geology and Minerals of Viet Nam (1999) which was constructed from bore holes in the area the geology of the area is described as follows:

a. *Mesozoic - Draylinh strata: Sediment c*omposition of the strata including sandstone, calcareous siltstone, limestone clay. Stone has color of cement gray, dark gray; structure layered from medium to thick, to be folded sharply with sloping angle 60-70^0 toward the west, northwest (280-290^0).

b. *Neogen, Upper Pliocene, Ba Mieu strata:* Ba Mieu exposed surface is popular upstream of Saigon River, the area of Tong Le Chan stretching to Lai Nguyen, Chon Thanh. This creates terrain surface with a thickness of 70-80m. The composition includes gravel, sand, and clay powder. The thickness is about 26m.

4. Water resources

31. The subproject area is located in Be river basin which is a sub-basin of Dong Nai river basin. The headwaters of the Be river are located in southwest of Dak Nong province at an altitude 750m to 850m. The length of the Be river from headwaters to the confluence with the Dong Nai river is approximately 344 km through a catchment of 7,650 km^2. The average discharge in the Be River is approximately 250 m^3/s. The Be river is not near the sites of the substation or 220 kV connector line.

a. Surface water quality

32. Similar to local air quality, water quality in the small surface water bodies in the subproject area was determined for the EIA by the Center for Energy and Environment in August 2014. The representative sampling locations in rivers, lakes, ponds, canals and around the subproject area is shown in Tables 10 and 11.

Table 10. Surface water quality sampling sites in vicinity of subproject area

No.	Sample	Sampling time	Location	Vietnamese Coordinates	
				X (m)	Y (m)
01	N1	8h AM, 05/08/2014	Phuoc Hoa Bridge on asphalt road leading into Phuoc Hoa dam from Highway 14	1216843	610839
02	N2	10h AM, 05/08/2014	Suoi Ngang Bridge on Highway 14	1209257	612817
03	N3	8h 20 AM, 05/08/2014	Ngang stream nears the project area	1209281	612802

Table 11. Ambient water quality in the subproject area

No.	Parameters	Method	Unit	Results			QCVN 08:2008/BTNMT Column A2
				N1	N2	N3	
1	pH	TCVN 6492:2011	-	6.62	6.65	6.32	6-8.5
2	BOD_5 (20^{o}C)	SMEWW 5210 B:2005	mg/l	17	25	12	6

No.	Parameters	Method	Unit	Results			QCVN 08:2008/BTNMT Column A2
				N1	N2	N3	
3	TSS	SMEWW 2540 D:2005	mg/l	32	36	40	30
4	NO_3-N	SMEWW 4500 :2005	mg/l	2.7	4.1	2.4	5
5	PO_4^3-P	SMEWW 4500 :2005	mg/l	0.32	0.41	0.25	0.2
6	Total Coliform	TCVN 6189-2 : 1996	MPN/ 100 ml	1,600	2,200	2,500	7,500

Source: The EIA of the 500kV Chon Thanh substation and connection

33. Table 11 indicates that surface water quality in the subproject exceeds standards for some parameters. The parameters that exceed current standards (QCVN 08: 2008/BTNMT column A2) are total suspended solids (TSS), phosphate (PO_4^3-) and BOD_5. Therefore, surface quality in the project area was assessed as showing indicators of pollution from the intensive agricultural activity in the area.

b. Groundwater quality

34. The PECC3 in collaboration with the Center for Energy and Environment sampled and analzed groundwater quality in the project area in November 2014. Sampling occurred at the Tran Thi Thao household, and at Phuoc Hoa dam near subproject area (Vietnamese coordinates X = 1263112, Y = 603 904).

Table 12. Local groundwater quality

Parameter	Unit	Test result	QCVN 09:2008/BTNMT
pH		6.5	5.5-8.5
hardness	mg/l	270	500
COD	mg/l	2.0	4
ammonia	mg/l	0.005	0.1
chloride	mg/l	110	250

Source: The EIA of the 500kV Chon Thanh substation and connection

35. Comparison of the groundwater quality results (Table 12) with current standards (QCVN 09:2008/BTNMT) indicated that quality of local groundwater is good.

B. Biological Environment

1. Vegetation and Land Use

36. Vegetation in the subproject area (Tables 13 and 14) is comprised of agricultural crops and rubber trees. No natural forest exists in the vicinity of the subproject or along RoW of 220 kV connector line. Rubber trees occupy 100% of the footprint of the new substation. Land along the under ROW of 220kV transmission line is also rubber plantation and some residential land.

Table 13. Vegetation and land use on/near 500 kV Chon Thanh substation

District/commune	Land for substation, and tower foundations (m^2)	
	Rubber tree	Total
Substation	**184,359**	**184,359**
Minh Thanh	184,359	184,359
ROW of 220KV and 500kV TL	**11,428**	**11,428**
Minh Thanh	7,458	7,458
Nha Bich	3,970	3,970
Total	**195,787**	**195,787**

Source: IOL of RP by PECC3, April 2015

Table 14. Land use along ROW of 220 kV connector line

District/commune	Total land area affected (m^2)		
	Residential	Rubber tree	Total
Minh Thanh – Chon Thanh district.	20	139,037	139,057
Nha Bich – Chon Thanh district.		40,616	40,616
Total	**20**	**179,653**	**179,673**

Source: IOL of RP by PECC3, April 2015

2. Wildlife

37. Baseline surveys in the vicinity of the substation ROW of 220 kV connection line, and information from public consultations indicated the existence of wildlife species such as sparrow (*Passer montanus*), frog (*Hoplobatrachus rugulosus*), lizard flower (*Mabuya multifasciata*), and tree frog (*Polypedates leucomystax*). No rare or threatened wildlife species exist in the broad area surrounding the future substation and ROW of the 220 kV connecting line.

3. Conservation and protected Area

38. There is no natural conservation area, or protected area near the entire subproject area. The future subproject construction footprint does not encroach any ecological buffer zone.

C. Socioeconomic Conditions

1. Population

39. The project is distributed in the communes of Nha Bich and Minh Thanh of Chon Thanh district. Population statistics are summarized in Table 15.

Table 15. Distribution of population in subproject area

Commune	Households	Total population	Number of poor households	Rate of poverty %
Minh Thanh	1428	6018	25	1.75
Nha Bich	1432	6019	21	1.75

Source: Social and Economic Report 2014 of the communes in the project area

40. The affected communes support 100% Kinh households and no ethnic minorities. The indicators of community health care capacity, and economic indicators are summarized in Tables 16 – 17.

Table 16. Indicators of health care capacity of area

Commune	Quantity			Notes
	Health clinics	Doctor	Medico	
Minh Thanh	1	1	6	Total number of people examined is 622.
Nha Bich	1	1	6	

Source: IOL of RP by PECC3, April 2015.

Table 17. Local economy

Properties	Unit	Minh Thanh	Nha Bich
Agriculture, forestry	%	82	80
Industry, services	%	18	20
Income per capita	Million Dong/ per Month	2.67	2.7

41. The economy of the districts affected by the project is primarily agriculture-based. Recently, there has been a limited diversification into other industries such as service and tourism.

42. Agriculture is the main labour source, and apart from providing food for the family, selling produce from agriculture generates small income for households through local markets. Rubber, cashew, and pepper are the main income source in the area.

2. Education

43. Education is a priority sector of the GOV in Viet Nam's development. All communes in affected area have kindergarten, primary schools, and secondary schools.

3. Social Infrastructure

a. Public health

44. Further to Table 17, the AHs have access to health services in the commune. The commune health center in the affected areas meets the local needs illness diagnosis and treatment. First aid for common illnesses such as strep throat, flu, diarrhea, and trauma are addressed. In addition, affected households are near the district health center so potential worker or public injuries during the construction phase of the subproject will be attended to promptly with access to medical services at provincial levels.

b. Water and Electricity

45. 100% of households have access to clean water primarily from wells and water from clean water systems. There are 41 out of 102 surveyed households which use piped water. 100% of affected households use electricity for lighting.

c. Communications

46. Infrastructure for transport, communications and electricity are constantly being improved so that people's standard of living and access to services is improving steadily.

4. Cultural and Heritage Sites

47. There are no historical relics, cultural and religious or architectural monuments of local people in the subproject area.

5. UXO (unexploded ordnance)

48. UXO is a significant issue in Viet Nam after decades of war. Therefore, it is necessary to conduct mine clearance in the subproject area before subproject construction. It is a legal requirement to ensure the safety of construction workers by having specialized army units clear UXO before construction activities.

D. Project affected people

49. Communities will be affected by loss of land and loss of assets within the substation and ROW of 220 kV connector line. All households who are affected by permanent or temporary losses will be compensated according to the Resettlement Plan establish by PECC3 in April 2015.

50. Land loss is both temporary and permanent. Estimated permanent loss includes 18.4 ha for the construction of 500 kV Chon Thanh substation, and 10 ha for construction of tower foundations of the 220 kV connection lines. Figure 4 shows the type of rubber plantation that will be affected by the subproject.

51. Approximately 179 ha along the RoW will be temporarily affected by the project including clearing of vegetation along 4m for cable pulling. Another 9.1 ha will be affected temporarily for construction disposal sites, material storage areas etc. Land holders will be compensated for loss of access to crop areas during the stringing of line conductors when vehicle access will be required along the ROW which will destroy crops and interfere with crop cultivation practices.

52. Only one household will be affected by the substation footprint and new access road. There are 4 affected households within the ROW of 220 kV connection line.

53. The main occupation of most AHs is agricultural production of rubber, and rice. Some households have secondary vocational trade, and small businesses accounted for 39%.

54. Additional features of subproject area are shown in Figure 4.

Figure 4: Features of new 500 kV Chon Thanh Substation and connection

Fig 4a: Substation will be located in rubber plantation area right of dual towers.

Fig 4b:
Example rubber plantation that will be affected by substation and connector lines

V. INFORMATION DISCLOSURE AND PUBLIC CONSULTATION

A. Information disclosure

55. The formal disclosure on the 500kV Chon Thanh substation and 220 kV connection line to affected persons (AP) and stakeholders that occurred during the public consultations on the subproject is meant to form the beginning of continued information disclosure and stakeholder involvement as the subproject is implemented. As part of the stakeholder communication strategy regular information exchange, and meetings with stakeholders are strongly encouraged throughout implementation of the subproject.

56. The completed IEE must be easily available to contacted stakeholders in written and verbal forms in the local language. At a minimum, the Executive Summary of the IEE should be translated to local language and distributed to all APs. The IEE should be available on the CPPMB website, at the CPPMB offices, and at the subproject sites. Similarly, all subproject reporting with specific reference to stakeholder consultation minutes, environmental monitoring, and reports on EMP implementation released by the EA/IA should be available at the same offices and websites. The IEE will be available on the ADB website as well as EMP reporting that is prepared by the EA/IA after implementation begins.

B. Public Consultation

57. Stakeholder consultations were developed to meet the requirements of meaningful consultation as stipulated by the SPS (2009). The strategy included the principles of meaningful engagement, transparency, participation, and inclusiveness to ensure that affected and marginalized groups such as women, and the poor, were given equal opportunities to participate in the design of the subproject.

1. Identification of Stakeholders

58. Stakeholders were identified and engaged in a participatory manner. Stakeholder communication focused on institutional stakeholders, affected communities, and persons directly affected by proposed subproject interventions. The stakeholders of the subproject included:

1. Affected households and businesses living along the transmission line and near the substation site who may be directly and/or adversely affected, and who have an interest in the identification and implementation of measures to avoid or minimize negative impacts;

2. Mass organizations such as Womens Union, and Farmers Union which provided information for the design of the various subproject interventions, and which might participate in implementation of measures and interventions;
3. Institutional stakeholders such as: (ii) Commune leaders (ii) National Consultant; (iii) Project EA, (iv) Environmental and social consultant; and (v)vPECC3; and
4. Other institutions or individuals with a vested interest in the outcomes and/or impacts of the subproject.

2. Public consultation meeting

59. Formal community consultation meetings were held to discuss the location and impact of the transmission line and substations for both environmental and social aspects. Public

consultations were held in 2 communes (Minh Thanh and Nha Bich communes), Chon Thanh District, Binh Phuoc Province from 24-25 March, 2015.

60. The public meeting consisted of the following three component procedures:

1. The engineering consultant introduced the subproject including the substation location, the route of connection line;
2. The environmental consultant presented ADB's environmental policy, safety regulations in the Viet Nam power sector, anticipated environmental impacts and respective mitigation measures (to be developed in IEE), the grievance redress mechanism for environmental and resettlement problems; and
3. The social/resettlement consultants presented ADB's resettlement plan; impacts due to the acquisition land and properties; policies of GOV and local authorities, the Project's policies in compensation for loss as the state acquired land and properties on land; and Potential impacts due to land acquisition/resettlement.

61. During the meeting people identified their questions and comments on the environmental issues. Consultants answered and explained all questions to the participants. The majority of the concerns that were raised were related to compensation of lost land and crops. The total number of people/groups consulted was 43 (Appendix B).

3. Results of Public consultations

62. The comments and questions of local authorities and people, and the response of subproject owners and national consultant are summarized in Table 19. The main concerns of the subproject are as follows:

1. The project owner and Contractor are requested to implement strictly environmental protection measures during the construction stage of the subproject to avoid negative effects on life and livelihoods of the local community.
2. The project owner and Contractor are requested that specific construction methods are used to prevent/minimize noise during construction stage.
3. The project owner and Contractor are requested that waste water, waste, noise, dust will not affect people's life.
4. The project owner is requested for detailed explanation of operation of transmission line to avoid affecting to local people health and safety.
5. In the design and operation of the substation and transmission line the project owner and Contractor are requested to ensure that electromagnetic fields are within permissible limits and does not affect local people near the project area.

Table 18. Summary of public concerns and response by project

Location and time	Comments/questions[8]	Response of project owners and environmental consultants	Project Response[9]
Minh Thanh commune, Chon Thanh district, Binh Phuoc province, 24/3/2015	In the ground preparation and construction, the project will generate solid waste, wastewater, oil, and grease. The Project Owner is requested to strictly implement environmental protection measures in the construction stage.	The solid waste (e.g., spoil, cut trees), etc. will be transported to the disposal sites following DONRE regulations regulation. In addition, the Project Owner and Contractor will apply fully the mitigation measures to minimize the negative impacts of the project to environment.	The EMP prescribes management sub-plans for construction spoil and waste management including the collection and disposal at DONRE-approved sites
	The effect of the transmission line passing through residential areas on the environment, peoples lives including impact of EMF? The design and operation of the substation and connection line must ensure EMF will not negatively affect human health	When design and operation the transmission line, The Project Owner will ensure electromagnetic field generated within allowable limit according to Decree No.14 /2014/NĐ-CP and no affect the health of local people.	Explicit in the design of the connector transmission lines and substation are government and international standards and code for distance of all facilities from human settlements and activities. However, the IEE/EMP provides the results of a comprehensive review of health effects of EMF which indicate inconclusive health effects of EMF (Appendix E)
Nha Bich commune, Chon Thanh district, Binh Phuoc	How many meters of the width of ROW?	The width of ROW is defined under Decree No 14/2014/NĐ-CP to minimize the impact on trees and crops of local people.	The EMP prescribes monitoring of any potential impacts of the regulated ROWs nearby crop livelihoods

[8] Questions, issues raised during public consultation meetings recorded in table as received
[9] Issues addressed by EMP

province, 25/3/2015	Electromagnetic field will affect local people's health; it should be taken mitigation measures.	During the design and operation the transmission lines, the Project Owner will ensure electromagnetic field generated within allowable limit according to Decree No.14 /2014/NĐ-CP and no affect to health of local people	See above

VI. POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION

63. The assessment of potential impacts of the subproject is structured by the three development phases of the subproject defined by: *pre-construction*, *construction*, and *post-construction operational phase.* The structure is carried forward to the environmental management plan for the subproject (see section IX).

A. Subproject Benefits

64. The single comprehensive benefit of the subproject is the provision of needed electrical power to the provinces of Binh Duong and Binh Phuoc to support the urban, commercial, and industrial development. Electricity will also become more reliable reducing power outages or brownouts that in the area.

B. Pre-construction Phase

65. Negative impacts associated with the pre-construction phase of the subproject concern land acquisition and compensation. The single largest form of land acquisition will be loss of rubber plantation by the single landowner. The two connector transmission lines will also require rubber plantation land and some acacia plantation. The details of the land losses and compensation are found in the Land Acquisition and Resettlement Plan (RP) which has been prepared separately.

Updating Environmental Management Plans

66. The subproject EMP will need to be reviewed during the pre-construction phase to ensure that the EMP fully addresses the potential impacts of the final detailed design of the 500 kV substation and 220 kV and 500 kV connector transmission lines. This will involve finalization of the Mitigation and Monitoring Plans of the EMP that will manage and measure potential impact areas such as erosion, noise, dust and air quality, construction waste and spoil disposal, construction traffic, and worker and public safety at the subproject sites.

During the pre-construction phase the government will have to review the potential of UXO at the substation site and along the two connector lines. The review must be done before any excavation work begins. The EMP will be used by the Contractors to prepare their Contractor environmental management plans (CEMP).

67. The key impact management measures to be implemented during the pre-construction phase are:

- Initiation of land compensation for affected households and businesses;
- Screen subproject areas for UXO
- Completion of detailed designs of the subproject; and
- Updating and initiation of the subproject EMP.

C. Construction Phase

68. The environmental impacts of the subproject are associated primarily with the construction phase of the substation and connectors. The substation and connectors are not located in a national protected area, and there are no documented rare or endangered wildlife species in the area.

1. Potential impacts of the Substation and Transmission Line

69. Potential short-term construction-related impacts and disturbances are reduced and/or blocked public access, disrupted agriculture, noise and dust from construction truck

and heavy equipment use, rubber plantation pollution caused by equipment operation and maintenance, public and worker accidents, increased traffic accidents, drainage and flooding problems, solid waste and domestic pollution from worker camps, social disease and community problems caused by migrant workers.

2. Mitigation measures

70. Construction management measures to mitigate the potential the above common impacts associated with the construction phase of the substation and transmission line are itemized below. The mitigation measures are detailed in the subproject EMP.

- The entire substation area and alignments for connector transmission lines must be reviewed, and surveyed for unexploded ordnance (UXO) by the military of Viet Nam prior to construction. If such ordnance is detected clearing work will need to be commissioned prior to undertaking civil works.
- Open excavations at the subproject site and for tower foundations should be fenced, and covered where public walkways or vehicles must cross.
- A cultural chance find management sub-plan must be in place in the EMP for cultural artifacts and property.
- Regular use of wetting agents should be employed at substation site, and along all construction roads, and access points to the connector lines.
- All construction vehicles and gas powered equipment should be maintained in proper working order to minimize emissions, and not operated at night if possible to minimize noise.
- Speed limits should be posted and adhered to by construction vehicles.
- Where possible construction vehicles should use different roads or dedicated lanes of roads shared by the public. Removal of rubber and acacia must be minimized.
- Historic land use should be reviewed to assess whether excavated soils will be contaminated. Contaminated spoil should be disposed at a landfill or a location approved by DONRE.
- Berms and plastic fencing should be placed around subproject site to prevent wind erosion into plantation areas.
- Employ local workers as much as possible to prevent or minimize influx of migrant workers, and incidence of social disease and community unrest.
- Worker camps must have adequate domestic waste collection facilities and sufficient pit latrines that are located away from public areas and surface waters.
- Dedicated fuel storage areas must be established away from public areas and marked clearly.
- To minimize the risk of public and worker injury appropriate GoV regulations on Occupational, Safety, and Community Health must be applied[7], or the IFC/World Bank Environment, Health, and Safety Guidelines (2007) for Power Distribution that govern the safe and orderly operation of civil works should be followed.
- Aggregates (e.g., sand, gravel, rock) that are transported by truck should be covered.
- Prolonged use of temporary storage piles of file should be avoided, or covered, or wetted regularly to prevent dust and erosion.
- Storage of bulk fuel should be on covered concrete pads away from the public and worker camp. Fuel storage areas and tanks must be clearly marked, protected and lighted. Contractor should be required to have an emergency plan to handle fuel and oil spillage

[7] e.g. Circular No: 22/2010/TT-BXD, date issued: 03rd December 2010.

3. Component-specific potential construction impacts, and mitigations

a. Substation

71. Potential impact associated with construction of substation is traffic congestion and potential vehicles accidents where the new access road meets the existing district and commune roads. Enforced well marked speed limits must be in place. Ideally dedicated lanes or temporary roads are created for construction vehicles.

b. Connector transmission lines

72. Similar to the substation access road crossing of existing roads of the connector lines must carefully manage construction traffic. The tower foundations of both connector lines must not be placed near flowing streams, and all streams that are crossed must be isolated from any civil works activities with erosion and sedimentation berms.

c. Protected Areas, Rare and Endangered Species, and Physical Cultural Resources (PCR)

73. The substation and connector transmission lines are not located in a protected area, and there are no documented rare or endangered wildlife in the area. No known avian migration flyways exist in the area. Thus, the new connector lines with specific reference to the 8.5 km 220 kV line will not create an obstacle for annual or seasonal bird migration.

D. Operation Phase

74. The potential impacts of the completed 500 kV substation and two connector lines is restricted to worker safety, the potential for children of the community gaining access to the property, and possible spills of hazardous waste such as transformer oils. The increase in local traffic caused by substation employee traffic and traffic for periodic maintenance of the connector lines will not be significant.

E. Climate Change

75. There have been numerous recent reports and summaries, e.g.,[8],[9],[10], of climate change scenarios for Viet Nam based on the most recent climate change projections of the different Global Circulation Models (GCM). The fact sheet for Viet Nam[11] compiled by the MONRE of Viet Nam summarizes projected climate change for Viet Nam as follows.

76. By 2100 average annual air temperature in the country is expected to increase by 2.3 C^o with the frequency of heat waves increasing by 100-180%, and cold surges decreasing by 20-40%. Total rainfall, and extreme rainfall events is expected to increase everywhere in the country with particular increases occurring in the mountainous northern areas. However, rainfall is expected to decrease during dry season. By 2100 mean sea level is expected to increase 1.0 m.

1. Climate Risk and Vulnerability[12]

77. The sensitivity of the 500 kV Chon Thanh kV substation subproject to climate change is considered low as determined by the initial rapid environmental assessment of the

[8] ADB (2013). Viet Nam and Climate Change Assessment and Impacts, 31 pgs + Appendices
[9] MONRE, 2009. Climate Change and Sea Level Rise Scenarios, 15 pgs + Appendices
[10] UNEP, 2010. Assessment of Capacity Gaps and Needs of Southeast Asian Countries Addressing Impacts, Vulnerabilities, and Adaption to Climate Variability and Climate Change, 215 pgs + references
[11] MONRE 2010, Climate Change Fact Sheet for Viet Nam
[12] sensu, ADB (2014) Climate Proofing ADB Investment in the Transport Sector: Initial Experience, 88 pgs + Appendices

subproject (Appendix A). The substation and connector transmission lines sites are well drained as required by the plantations which will not expose them to increased flooding from increased frequency and severity of rainfall events. Also, the subproject is not sensitive to increases in the frequency and severity of typhoons and storm surge due to the distant location from the ocean.

2. Contribution to Global Climate Change

78. Consideration of climate change includes measures to reduce the contribution of the subprojects to greenhouse gas production. Effort through design will be taken to reduce the carbon footprint of the project by ensuring for example that speed limits along upgraded roads are established and subsequently enforced, vehicles that use the upgraded roads are maintained in good working order, and all lighting installed at the subproject component sites use light bulbs that are energy efficient.

VII. ANALYSIS OF ALTERNATIVES

79. No alternative subproject designs or locations were available for the IEE.

VIII. GRIEVANCE REDRESS MECHANISM

A. Type of Grievances

80. Any affected person (AP) can submit a grievance with CPPMB or PTC4 if they believe a practice is having a detrimental impact on the community, the environment, or on their quality of life. Grievances may include:

- Negative impacts on a person or a community (e.g. health and safety issues, nuisances, etc.).
- Dangers to health and safety or the environment.
- Social impacts due to construction activities or impacts on social infrastructure.
- Failure to comply with standards or legal obligations.
- Improper conduct or unethical behavior of Contractor leading to nuisance of affected person(s).

B. Grievance Redress Mechanism

81. A subproject grievance can be defined as an actual or perceived subproject-related problem that gives ground for complaint by an affected person (AP). As a general policy, CPPMB (during construction) and PTC4 (during operation) will work proactively toward preventing grievances through the implementation of impact mitigation measures and community liaison activities that anticipate and address potential issues before they become grievances. Nonetheless, during construction and operation it is possible that unanticipated impacts may occur if the mitigation measures are not properly implemented, or unforeseen issues occur. In order to address complaints, a project grievance redress mechanism (GRM) will be developed in accordance with ADB requirements and Government procedures.

82. The GRM will be established to provide an effective and transparent channel for lodging complaints and for addressing grievances. The GRM will be established prior to the construction of the subproject and will be maintained during operation and maintenance.

83. For complaints received about the construction works, the CPPMB will involve the Contractor. When these are not resolved, any complaint is then facilitated by the CPPMB

through the Environment and Social Unit (ESU) under the Compensation Department. For complaints about substation operation, the PTC4 will act on the complaint. These will be entry points to whom the AP could directly register their complaints. Contact details for the entry point of complaints will be publicly disseminated on information boards at the substation. Mechanisms to contact the point of entry will be through face-to-face meetings, written complaint, telephone conversations, or email.

84. The following are the generic steps of the GRM (Figure 5):

Step 1: For complaints occurring during the construction phase, affected persons can register the complaint directly to the Contractor and the head of the commune by means of contact information prescribed in the information boards at the substation site. Upon receipt of the complaint, the Contactor is required to record/document all complaints and to coordinate with the complainant immediately and to provide mitigation actions to the complaint within two weeks. The Contractor is required to report complaints received, resolved, and unresolved to the CPPMB through the monthly progress report.

Step 2: If the complainant is not satisfied with the action(s) undertaken by the Contractor, the affected person can inform the head of the commune about the matter, which will document the complaint in the complaints register. The commune head/authority through the Commune People's Committee will then call a meeting of the complainant, CPPMB-Compensation Department and the Contractor to resolve the complaint. After discussion of the possible solutions, the CPPMB monitors the resolution of the complaint. The Contractor shall be required to report any action to the CPPMB in the monthly project progress reports.

Step 3: If the complainant is not satisfied with the action(s) undertaken at the level of Commune People's Committee, the affected person may elevate the case to the district level for resolution.

Step 4: Complaints not resolved at the district level is elevated to the People's Committee at the provincial level for resolution.

Step 5: When the complaint is not resolved at the People's Committee at the provincial level, the complaint is then elevated to the People's Court. The decision of the People's Court becomes the final legal basis for the decision on the complaint.

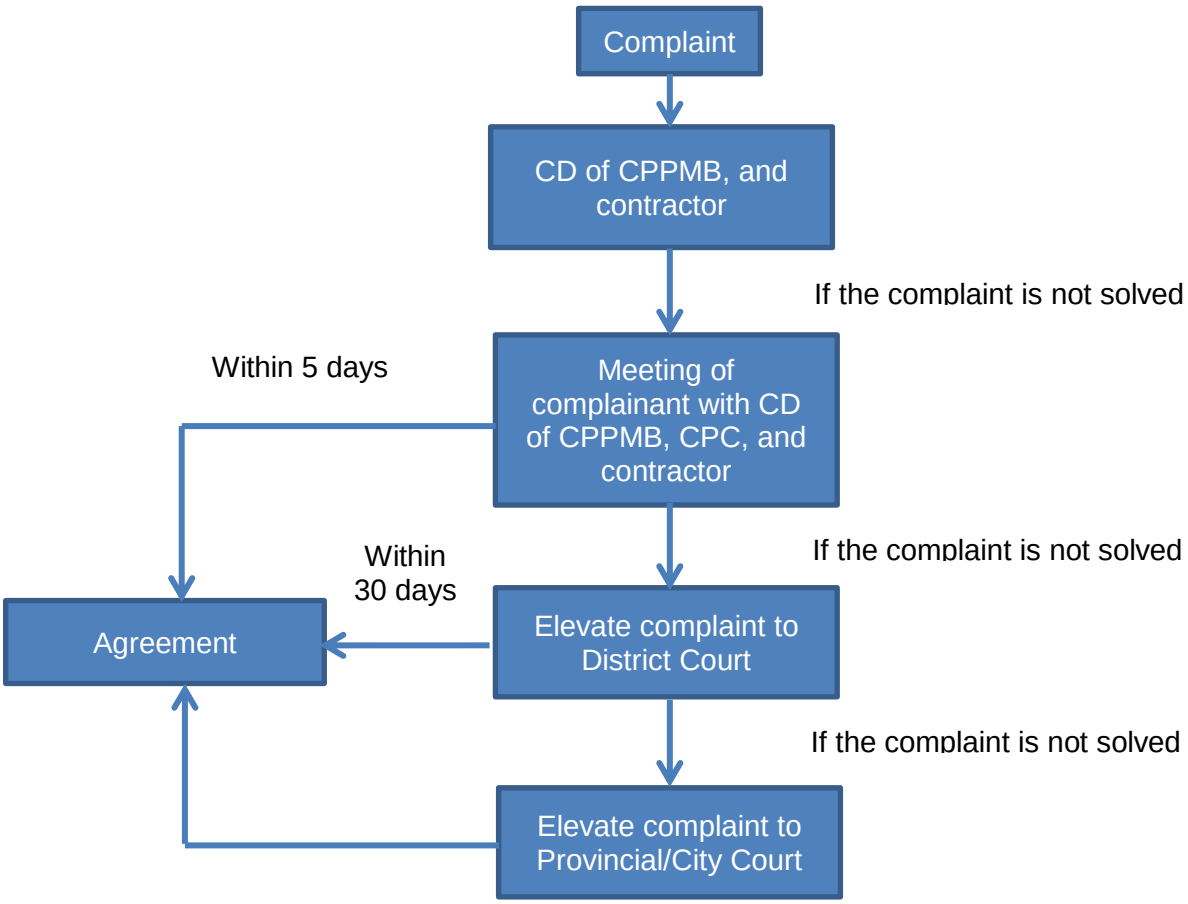
C. Legal Guarantees for Complaints and Grievances

85. Under the regulations in Viet Nam, APs having complaints or grievances will not be responsible for paying any administrative and legal fees in filing their complaints. Any site clearing is not allowed while the resolution of the complaint is still pending.

86. In cases where the AP is illiterate, the AP can ask assistance from one representative of his household who can then write all the complaints and grievances to be submitted to the district level for resolution.

87. Under the law, all meetings to resolve complaints and grievances should be documented and the minutes of meetings should be disclosed and posted at the Commune People's Committee.

Figure 5. The Grievance Redress Mechanism



IX. ENVIRONMENTAL MANAGEMENT PLAN

88. An Environmental Management Plan (EMP) has been prepared for subproject. The EMP integrates the results of the IEE into a formal plan for the implementing agency and Contractor (see below) to implement in parallel with the subproject to prevent or minimize potential environmental impacts and issues of the subproject. The EMP addresses the results of the public consultations on the subproject that were convened as part of the IEE.

89. The EMP, *inter alia*, consists of an Impacts Mitigation Plan, a Monitoring Plan, and an Emergency Response Plan. The EMP also prescribes the institutional responsibilities for the implementation of the EMP. The EMP is a management tool that provides a set of directives and guidelines that the subproject owner follows to prevent or minimize unnecessary environmental impacts of the subproject.

A. Institutional Arrangements and Responsibilities

90. At the feasibility stage the primary management framework responsible for the implementation of the EMP for the new 500 kV Chon Thanh kV substation and connectors is summarized as follows. The National Power Transmission Corporation (NPT) of the national Electrical Utility of Viet Nam (EVN) is the executing agency (EA). The EA takes overall responsibility for implementing the EMP with executive support from the Central Power

Project Management Board (CPPMB) which is the implementing agency (IA) of the subproject. The IA under the direction of the EA implements the subproject and EMP with an assigned environmental and social unit (ESU) whose sole responsibility is to implement the EMP.

91. The IA/ESU is supported by the international Project Implementation Consultant[13] (PIC). The PIC assists with completion of the detailed subproject designs, works with the IA to ensure the EMP addresses the detailed subproject designs, and assists the IA with the implementation of the EMP. The PIC also delivers required capacity development and training to the IA/ESU. The ESU oversees and assists the work of the environmental officer (EO) of the construction Contractor who implements the EMP with the CEMP[14].

92. External support of the ESU for the implementation of the EMP is provided by the international and national environment specialists (ES) of the PIC. The PIC will have budget for an external Environmental Monitoring Consultant (EMC) which will conduct the required field sampling and laboratory analyses of the environmental monitoring plan (e.g., water quality, air quality) of the EMP that cannot be performed by the Contractor or IA/ESU.

93. The day-to-day operations including monitoring of waste management and worker and public safety at/near the new 500 kV Chon Thanh substation will be the responsibility of the Power transmission company 34 (PTC4). A summary of indicative responsibilities for implementation of the EMP is provided below.

94. The responsibilities of the EA with support from EVN include:

1. Overall responsibility for implementation of EMP;
2. Provide coordination and supervision for environmental and social safeguards and monitoring for IA/ESU;
3. Liaise with ADB on the implementation of the EMP; and
4. Coordinate resolution with IA/ESU with issues arising from the implementation of EMP.

95. The responsibilities of the ESU of IA include:

5. Assist PIC with updating the EMP to meet final detailed subproject design;
6. Notify DONRE to verify GoV approvals of subproject are met;
7. Assist PIC with articulation of CEMP requirements in Contractor bid documents which included appended EMP;
8. Assist PIC with bid evaluations, specifically completeness of CEMP;
9. Undertake day to day management of EMP implementation activities;
10. Work with EMC on implementation of monitoring plan of EMP;
11. Ensure compliance with loan covenants and assurances in respect of entire subproject, including EMP (as well as relevant IPPs, GAPs, resettlement plans);
12. Lead follow-up meetings with all affected stakeholders in public consultations;
13. Prepare and submit quarterly reports on EMP implementation to IA/EA;
14. Oversee implementation of CEMP by contractor;
15. Coordinate with ES of PIC for EMP implementation;

[13] PIC to be defined
[14] Contractor Environmental Management Plan prepared by contractor from EMP which is part of bid documents.

16. Undertake regular construction site inspections to ensure contractor implements CEMP properly; and

17. Ensure EO of Contractor submits monthly reports on construction mitigations and monitoring.

The responsibilities of the ES (International and National) of the PIC are:

18. Coordinate with ESU/IA to ensure EMP meets final detailed design of subproject;

19. Provide technical direction and support to ESU/IA for implementation of EMP;

20. Oversee design and delivery of capacity development and training of ESU/IA and EO of Contractor(s);

21. Provide advice and support to EMC with their monitoring activities;

22. Review all reports prepared ESU/IA and EMC for EA and ADB; and

23. Review location of any possible contaminated sites near subproject.

The responsibilities of Environmental Officer (EO) of Contractor include:

24. Implement CEMP for construction phase of subproject; and

25. Prepare and submit monthly reports on mitigation and monitoring activities of CEMP any environmental issues at construction sites.

The responsibilities of external Environmental Monitoring Consultant (EMC) include:

26. Implement the environmental sampling required for monitoring plan of EMP that cannot be conducted by the Contractor and ESU/IA/EO.

27. Perform required laboratory analyses for monitoring program detailed in EMP; and;

28. Prepare and submit quarterly reports to IA/ESU on monitoring activities.

96. The Department of Natural Resources and Environment (DONRE) is the provincial agency which oversees environmental management of Binh Phuoc province. The DONRE with District staff provides direction and support for environmental protection-related matters including application of the Law on Environmental Protection (2014), EIA, and environmental standards.

97. The ADB provides guidance to EA/IA with any issues related to EMP, and reviews biannual reports on EMP activities compiled and submitted by EA. Table 20 summarizes major roles and responsibilities for the completion and implementation of the EMP.

Table 19. Primary responsibilities of EMP implementation

Responsible Group	Pre-construction					Construction	Operation
	Subproject Detailed Design	Supplement Baseline	Prepare Bid Documents	Stakeholder Consultation & GRM	Training of NPT-CPPMB	Monitoring & Reporting	Monitoring & Reporting
EA	oversee & assist IA/ PIC		oversee	initiate & oversee		reporting to ADB	from CPPMB, to NPT
ESU/IA	with PIC	with PIC	with PIC	with EA	with PIC	monitoring & reporting to EA	from PTC #4, to CPPMB

PIC	with IA	with ESU	with ESU	assist EA/IA	with ESU	monitoring & reporting to IA/EA & ADB	
EO/ contractor			prepare CEMP from EMP in bid documents			construction site observations & reporting to ESU	
EMC						field sampling with PIC/ESU & reporting to PIC	
Power Transmission Company No.4							from substation managers to CPPMB
DONRE	approvals	provide information	approvals	technical expert		regulatory	regulatory

B. Summary of Potential Impacts of Subproject

The potential impacts of the subproject are summarized in Table 21.

Table 20. Summary of potential impacts of subproject

Pre-construction Phase
• Permanent acquisition of mostly rubber and some acacia plantation lands
Construction Phase
• Common construction-related civil works disturbances such as dust, noise, and reduced and/or blocked public access along roads caused by increased truck traffic and heavy equipment use, disruption of local traffic, increased risk of traffic accidents, damage to existing roads, soil pollution caused by equipment operation and maintenance, potential public and worker accidents, land erosion, drainage and flooding problems, solid and domestic waste from worker camps, social issues and community problems caused by migrant workers.
Operational Phase
• Risk of worker and public safety at or near new substation and transmission lines • Spills of hazardous materials such as transformer oil

C. Impact Mitigation Plan

98. The impact mitigation measures of the EMP are presented in a comprehensive mitigation plan for the three phases of subproject implementation (pre-construction, construction, operation) which is presented for each phase in Tables 22-24. The mitigation plan addresses the environmental issues and concerns identified at the stakeholder meetings. The mitigation plan identifies potential impacts, required mitigations, responsible parties, location, timing, and indicative costs.

99. The mitigation plan is organized into a series of mitigation sub-plans that address common potential impact types of power transmission projects. The modularized sub-plans are meant to be selected by Contractors to formulate and budget their CEMPs as part of their bid documents. Example mitigation sub-plans are for a) Construction runoff and drainage; b) Erosion; c) Noise and dust control; d) Spoil disposal; e) Solid and liquid waste disposal; f) Construction traffic; g) Worker and public safety; h) Site restoration; i) Construction materials acquisition, transport, and storage, and j) Cultural chance finds. The mitigation sub-plans are detailed in the impact mitigations for the construction phase of the subproject (Table 23).

1. Pre-construction - finalization of EMP

100. The primary objective of the pre-construction phase of the subproject is to complete the engineering detailed designs, and prepare for the initiation of the construction phase. An important activity of the pre-construction phase is to review the EMP to ensure it meets the environmental management needs of the final detailed designs of subproject. Other important environmental safeguard activities of the preconstruction phase include initiation of land acquisition and compensation and required resettlement, continuation of public disclosure and initiation of grievance redress mechanism, clarify with the military whether UXO are possibly in subproject areas, and ensure EMP is appended to bid documents to enable Contractors to prepare their CEMPs from the EMP. Table 22 lists the important activities of the pre-construction phase.

2. Construction Phase

101. The EMP prescribes impact mitigation measures for the construction phase of the subproject which were finalized during the pre-construction phase as summarized above. As indicated by the IEE the potential environmental impacts of the subproject concern primarily the short-term disturbances and impacts during construction of the 500 kV Chon Thanh substation and two connector lines. Table 23 provides the mitigation measures for the construction phase.

3. Operation Phase

102. The brief list of impact mitigations for the operation of the completed Chon Thanh substation and connector lines are summarized in Table 24. Potential environmental impacts of the operation of the substation concern worker and public safety. Increased risk of traffic accidents due to additional substation worker and maintenance vehicles would be insignificant

Table 21. Finalization of impact mitigation plan during pre-construction phase

Subproject Activity	Potential Environmental Impacts	Proposed Mitigation Measures	Location	Timing	Activity Reporting	Estimated Cost[15] (USD)	Responsibility	
							Supervision	Implementation
Confirmation of land acquisition, and resettlement	No negative environmental impacts	1. Affected persons well informed well ahead of subproject implementation.	All affected persons in subproject area	Before subproject implemented	See resettlement plans	See resettlement plan	EA/IA/ESU	Resettlement committees
Disclosure, and engagement of community	No negative impacts	2. Continue information disclosure, and initiate Grievance Redress Mechanism	For all construction activities.	Beginning of subproject	Quarterly	No marginal cost[16]	IA/ESU	ESU
GoV approvals	No negative impact	3. Notify DONRE of subproject initiation to obtain required subproject permits and certificates.	Entire subproject	Before construction	As required	No marginal cost	EA/DONRE	DONRE
Detailed designs of Subproject,	Minimize negative environmental impacts	4. Work with PIC[17] to complete detailed designs of the 500 kV Chon Thanh SS and 220 kV and 500 kV connector lines. Ensure the following measures are included: a) identification of spill management prevention plans, and emergency response plans for all construction sites; b) no disturbance or damage to culture property; c) minimal acquisition of rubber and acacia plantation land d) locate any required borrow pits away from public areas, and surround pits with fencing and access barriers; f) no or minimal disruption to local pedestrian and vehicle traffic along all road near subproject with contingency alternate routes; g) Notify and provide local residents and merchants schedule of construction activities to minimize disruption to normal commercial and residential activities.	Final siting	Before construction initiated	Once with detailed designs documents	No marginal cost	PIC	EA/IA

[15] Costs will need to be updated during detailed design phase.
[16] No marginal cost indicates that costs to implement mitigation are to be built into cost estimates of bids of contractors
[17] PIC is Project Implementation Consultant to be determined at during detailed design phase

Review EMP	Positive environmental impacts	5. Review finalized RoWs of SS connector lines to confirm minimal damage to rubber and acacia plantations. 6. Identify any new potential impacts of subproject and include in EMP with special attention to residential areas. 7. Review mitigation measures and monitoring requirements of EMP where necessary to meet detailed designs, and to protect affected environments. 8. Submit EMP with any new potential impacts to ADB to review. 9. Complete mitigation sub-plans of EMP for: a) Construction drainage; b) Erosion; c) Noise and Dust; d) Contaminated spoil disposal; e) Solid and liquid waste disposal; f) Construction traffic; g) Worker and public safety; h) Site restoration; i) Construction materials acquisition, transport, and storage, and k) Cultural chance finds.	All sites	Before construction initiated	Once with detailed designs documents		PIC	IA/ESU
Confirm approved construction waste disposal sites	No negative impact	10. Notify DONRE to confirm locations of sites for borrow pits and disposal areas for construction waste for subproject, and obtain required permits. 11. Create registry for local and migrant workers.	Entire subproject	Before construction	As required	No marginal cost	IA/DONRE	ESU
UXO survey, and removal	Injured worker or public	12. Ensure GoV military is consulted and clears UXO areas where necessary	All construction sites.	Beginning of Subproject	Once	See Monitoring Plan below	EA/IA	IA/GoV
Develop bid documents	No negative environmental impact	13. Ensure EMP is appended to contractor tender documents, and that tender documents instruct contractors to use EMP to construct their CEMPs, and that CEMPs must be budgeted. 14. Specify in bid documents that contractor must provide staff with training and experience with implementing CEMPs	All subproject areas	Before construction begins	Once for all tenders	No marginal cost	PIC	EA/IA
Awareness of physical cultural resources in area	No negative environmental impact	15. EA to review potential locations of physical resources, and explain possible PCR to contractors and PIC.	All subproject areas	Before construction begins	Once	No marginal cost	EA/IA	IA/ESU

Obtain and activate permits and licenses	Prevent or minimize impacts	16. Contractors to comply with all statutory requirements set out by GoV for use of construction equipment, and operation of construction plants such as concrete batching.	For all construction sites	Beginning of construction	Once	No marginal cost	EA/PIC	ESU and contractors
Capacity development	No negative environmental impact	17. Develop and schedule training plan for IA/ESU/EO to be able to fully implement CEMP, and to manage implementation of mitigation measures by contractors. 18. Create awareness and training plan for contractors whom will implement mitigation measures.	All subproject areas	Before construction begins	Initially, refresher later if needed	No marginal cost	PIC	PIC
Recruitment of workers	Spread of sexually transmitted disease	19. Use local workers as much as possible thereby reducing number of migrant worker	All work forces.	Throughout construction phase	Worker hiring stages	No marginal cost	EA/IA	Contractor's bid documents

Table 22. Impact mitigations for construction of 500 kV Chon Thanh substation

Subproject Activity	Potential Environmental Impacts	Proposed Mitigation Measures	Location	Timing	Activity Reporting	Estimated Cost[18] (USD)	Responsibility	
							Supervision	Implementation
Initiate EMP and sub-plans,	Prevent or minimize impacts	1. Initiate EMP and CEMP including individual management sub-plans for different potential impact areas that are completed in pre-construction phase (see sub-plan guidance below).	For all construction sites	Beginning of construction	Once	No marginal cost	IA/PIC	ESU and contractors
Worker camps	Pollution and social problems	2. Locate worker camps away from human settlements. 3. Ensure adequate housing and waste disposal facilities including pit latrines and garbage cans. 4. A solid waste collection program must be established and implemented that maintains a clean worker camps 5. Locate separate pit latrines for male and female workers away from worker living and eating areas. 6. A clean-out or infill schedule for pit latrines must be established and implemented to ensure working latrines are available at all times. 7. Worker camps must have adequate drainage. 8. Local food should be provided to worker camps. Guns and weapons not allowed in camps. 9. Transient workers should not be allowed to interact with the local community. HIV/AIDS education should be given to workers. 10. Camp areas must be restored to original condition after construction completed.	All worker camps	Throughout construction phase	Monthly	No marginal cost	PIC/IA/ESU	contractor
Training and capacity	Prevent of impacts through education	11. Implement training and awareness plan for IA/ESU//EO and contractors.	IA office, construction sites	Beginning of construction	After each event	No marginal cost	PIC	PIC/ESU
Implement Construction materials	Pollution, injury, increased traffic,	12. All required borrow pits should be approved by DONRE. 13. Select pits in areas with low gradient and as close as possible to	For all construction	Throughout construction	Monthly	No marginal cost	PIC/IA/ESU	contractor

[18] Costs will need to be updated during detailed design phase.

acquisition, transport, and storage sub-plan	disrupted access	construction sites. 14. Required aggregate volumes must be carefully calculated prior to extraction to prevent wastage. 15. Pits should not be located near surface waters or cultural property or values. 16. All topsoil and overburden removed should be stockpiled for later restoration. 17. All borrow pits should have a fence perimeter with signage to keep public away. 18. After use pits should be dewatered and permanent fences installed with signage to keep public out, and restored as much as possible using original overburden and topsoil. 19. Unstable slope conditions in/adjacent to the pit caused by the extractions should be rectified with tree planting. 20. Define and schedule how materials are extracted from borrow pits, transported, and handled and stored at sites. 21. Define and schedule how fabricated materials such as steel, wood structures, and scaffolding will transported and handled. 22. All aggregate loads on trucks should be covered. .	areas.	phase				
DBST [low grade asphalt] production, and application to create / restore any road works	Air pollution, land and water contamination, and traffic and access problems,	23. Piles of aggregates at sites should be used/or removed promptly, or covered and placed in non- traffic areas 24. Stored paving materials e.g., DBST or asphalt, well away from all human activity and settlements, and cultural (e.g., schools, hospitals), and ecological receptors. Bitumen production and handling areas should be isolated. 25. Contractors must be well trained and experienced with the production, handling, and application of bitumen. 26. All spills should be cleaned immediately and handled as per hazardous waste management plan, and according to GoV regulations. 27. Bitumen should only be spread near any surface waters, or near any human activities. 28. Bitumen should not be used as a fuel.	For all construction areas.	Throughout construction phase	Monthly	No marginal cost	PIC/ESU	contractor

Implement Spoil management subplan	Contamination of land and surface waters from excavated spoil, and construction waste	29. Uncontaminated spoil to be disposed of in GoV-designated sites, which must never be in or adjacent surface waters. Designated sites must be clearly marked and identified. 30. Spoil must not be disposed of on sloped land, near cultural property or values, or on/near any other culturally or ecologically sensitive feature. 31. Where possible spoil should be used at other construction sites, or disposed in spent borrow pits. 32. A record of type, estimated volume, and source of disposed spoil must be recorded. 33. Contaminated spoil disposal must follow GoV regulations including handling, transport, treatment (if necessary), and disposal. 34. Suspected contaminated soil must be tested, and disposed of in designated sites identified as per GoV regulations. 35. Before treatment or disposal contaminated spoil must be covered with plastic and isolated from all human activity.	All excavation areas	Throughout construction phase	Monthly	See Monitoring Plan for contaminated soil analyses	PIC/ESU and DONRE	contractor
Implement Solid and liquid construction waste sub-plan	Contamination of land and surface waters from construction waste	36. Management of general solid and liquid waste of construction will follow GoV regulations, and will cover, collection, handling, transport, recycling, and disposal of waste created from construction activities and worker force. 37. Areas of disposal of solid and liquid waste to be determined by GoV. 38. Disposed of waste should be catalogued for type, estimated weigh, and source. 39. Construction sites should have large garbage bins. 40. A schedule of solid and liquid waste pickup and disposal must be established and followed that ensures construction sites are as clean as possible. 41. Solid waste should be separated and recyclables sold to buyers in community. <u>Hazardous Waste</u> 42. Collection, storage, transport, and disposal of hazardous waste such as used oils, gasoline, paint, and other toxics must follow GoV regulations. 43. Wastes should be separated (e.g., hydrocarbons, batteries, paints,	All construction sites and worker camps	Throughout construction phase	Monthly	No marginal cost	PIC/ESU and DONRE	contractor

		organic solvents) 44. Wastes must be stored above ground in closed, well labeled, ventilated plastic bins in good condition well away from construction activity areas, all surface water, water supplies, and cultural and ecological sensitive receptors. 45. All spills must be cleaned up completely with all contaminated soil removed and handled with by contaminated spoil sub-plan.						
Implement Noise and dust sub-plan	Dust Noise	46. Regularly apply wetting agents to exposed soil and construction roads. 47. Cover or keep moist all stockpiles of construction aggregates, and all truck loads of aggregates. 48. Minimize time that excavations and exposed soil are left open/exposed. Backfill immediately after work completed. 49. As much as possible, restrict working time at substation site between 07:00 and 17:00. 50. Maintain equipment in proper working order 51. Replace unnecessarily noisy vehicles and machinery. 52. Vehicles and machinery to be turned off when not in use. 53. Construct temporary noise barriers around excessively noisy activity areas where possible.	All construction sites.	Fulltime	Monthly	No marginal cost	PIC/ESU	contractor
Implement Utility and power disruption sub-plan	Loss or disruption of utilities and services such as water supply and electricity	54. Develop carefully a plan of days and locations where outages in utilities and services will occur, or are expected. 55. Contact local utilities and services with schedule, and identify possible contingency back-up plans for outages. 56. Contact affected community to inform them of planned outages. 57. Try to schedule all outages during low use time such between 24:00 and 06:00.	All construction sites.	Fulltime	Monthly	No marginal cost	PIC/ESU and Utility company	contractor
Implement Tree and vegetation removal, and site restoration	Damage or loss of trees, vegetation, and landscape	58. Contact DARD for advice on how to minimize damage to trees and vegetation along transmission line 59. Restrict tree and vegetation removal to within RoWs. 60. Within RoWs minimize removals of trees and install protective physical barriers around trees that do not need to be removed.	All construction sites.	Beginning and end of Subproject	Monthly	No marginal cost	PIC/ESU	contractor

sub-plan		61. Where possible all RoWs to be re-vegetated and landscaped after construction completed. Consult DARD to determine the most successful restoration strategy and techniques. Aim to replant three trees for each tree removed. 62. Restore sections of roads damaged by the construction of facilities.						
Implement Erosion control sub-plan	Land erosion	63. Berms, and plastic sheet fencing should be placed around all excavations and earthwork areas. 64. Earthworks should be conducted during dry periods. 65. Maintain a stockpile of topsoil for immediate site restoration following backfilling. 66. Protect exposed or cut slopes with planted vegetation, and have a slope stabilization protocol ready. 67. Re-vegetate all soil removal areas immediately after work completed.	All construction sites	Throughout construction phase	Monthly	No marginal cost	PIC/ESU	contractor
Implement worker and public safety sub-plan	Public and worker injury, and health	68. Proper fencing, protective barriers, and buffer zones should be provided around all construction sites. 69. Sufficient signage and information disclosure, and site supervisors and night guards should be placed at all sites. 70. Worker and public safety guidelines of MOLISA should be followed. 71. Population near possible blast areas should be notified 24 hrs ahead, and evacuated well before operation. Accepted GoV blast procedures and safety measures implemented. 72. Speed limits suitable for the size and type of construction vehicles, and current traffic patterns should be developed, posted, and enforced on all roads used by construction vehicles. 73. Standing water suitable for disease vector breeding should be filled in. 74. Worker education and awareness seminars for construction hazards should be given at beginning of construction phase, and at ideal frequency of monthly. A construction site safety program should be developed and distributed to workers. 75. Appropriate safety clothing and footwear should be mandatory for all construction workers. 76. Adequate medical services must be on site or nearby all construction	All construction sites.	Fulltime	Monthly	No marginal cost	PIC/ESU	contractor

		sites. 77. Drinking water must be provided at all construction sites. 78. Sufficient lighting to be used during necessary night work. 79. All construction sites should be examined daily to ensure unsafe conditions are removed.						
Civil works	Degradation of water quality and aquatic resources	80. Protective berms, or plastic sheet fencing should be placed between all earthworks and surface waters. 81. Erosion channels must be built around aggregate stockpile areas to contain rain-induced erosion. 82. Earthworks should be conducted during dry periods. 83. All construction fluids such as oils, and fuels should be stored and handled well away from surface waters. 84. No waste of any kind is to be thrown in surface waters. 85. No washing or repair of machinery near surface waters. 86. Pit latrines to be located well away from surface waters. 87. No unnecessary earthworks in or adjacent to water courses. 88. All irrigation canals and channels to be protected the same way as rivers, streams, and lakes	All construction sites	Throughout construction phase	Monthly	No marginal cost	PIC/ESU	contractor
Civil works	Degradation of terrestrial resources	89. No unnecessary cutting of trees along RoW. 90. All construction fluids such as oils, and fuels should be stored and handled well away from forested and plantation areas. 91. No waste of any kind is to be discarded on land or in forests/plantations.	All construction sites	Throughout construction phase	Monthly	No marginal cost	PIC/ESU	contractor
Implement Construction and urban traffic sub-plan	Traffic disruption, accidents, public injury	92. Schedule construction vehicle activity during light traffic periods. Create adequate traffic detours, and sufficient signage and warning lights. 93. Post speed limits, and create dedicated construction vehicle roads or lanes. 94. Inform community of location of construction traffic areas, and provide them with directions on how to best co-exist with construction vehicles on their roads. 95. Demarcate additional locations where pedestrians can develop road	All construction sites	Fulltime	Monthly	No marginal cost	PIC/ESU	contractor

		crossings away from construction areas. 96. Increase road and walkway lighting where necessary for safety.						
Implement Construction Drainage sub-plan	Loss of drainage and flood storage	97. Provide adequate short-term drainage away from construction sites to prevent ponding and flooding. 98. Manage to not allow borrow pits and quarries to fill with water. Pump periodically to land infiltration or nearby water courses. 99. Install temporary storm drains or ditches for construction sites 100. Ensure connections among surface waters (ponds) are maintained or enhanced to sustain existing stormwater storage capacity. 101. Protect surface waters from silt and eroded soil.	All areas with surface waters	Design and construction phases	Monthly	No marginal cost	PIC/ESU	contractor
Civil works and Chance finds sub-plan	Damage to cultural property or values, and chance finds	102. As per detailed designs all civil works should be located away from all physical cultural property and values. 103. Chance finds of valued relics and cultural values should be anticipated by contractors. Site supervisors should be on the watch for finds. 104. Upon a chance find all work stops immediately, find left untouched, and EA/IA notified to determine if find is valuable. The Culture Division of the DCST notified by telephone if valuable. 105. Work at find site will remain stopped until DCST allows work to continue.	All construction sites	At the start , and throughout construction phase	Monthly	No marginal cost	PIC/ESU	contractor

Table 23. Impact mitigations for operation of 500 kV Chon Thanh substation

Subproject Activity	Potential Environmental Impacts	Proposed Mitigation Measures	Location	Timing	Activity Reporting	Estimated Cost[19] (USD)	Responsibility	
							Supervision	Implementation
Operation of new substation	Increased risk of worker or public injury	1. Occupational health and safety regulations and guidelines of MOLISA should be applied to operations of substation. 2. Ensure substation property is adequately fenced with clearly visable danger warning signs to keep public out. 3. Store and handle transformer fluids and other hazardous materials according to international procedures and standards	At substation	Fulltime	Biannual	O and M	PTC4	
Operation of 220 kV and 500 kV connector lines of substation								
Operation of new transmission line	Increased risk of worker or public injury	4. Occupational safety and health regulations and guidelines of MOLISA should be applied to operations and maintenance of TL 5. Ensure TL towers are marked with clearly visable danger warning signs to keep public out.	At all TL towers	Fulltime	Biannual	O and M	PTC4	

[19] Costs will need to be updated during detailed design phase.

D. Monitoring Plan

103. The environmental monitoring plan for the three phases of subproject implementation is provided in Table 25 which consists of environmental indicators, the sampling locations and frequency, method of data collection, responsible parties, and estimated costs. The purpose of the monitoring plan is to determine the effectiveness of the impact mitigations, and to document unexpected positive or negative environmental impacts of the subproject.

104. The independent environmental monitoring consultant (EMC) as coordinated with the ESU/EO of the Contractor will implement the environmental monitoring program with the EMC taking responsibility for all environmental sampling that must be analyzed in a laboratory. The PIC/IA will provide logistical support to the EMC and EO where necessary for the environmental monitoring plan.

105. The standards for ambient environmental quality (e.g., water and air quality) for Viet Nam listed in section II will guide the monitoring program. The environmental standards provided by the Environmental, Health and Safety Guidelines of the IFC/World Bank (2007) should be followed to supplement standards that are not provided by the GoV.

106. After construction is completed, the potential impacts of the operation of the new Chon Thanh kV substation and connector lines will be monitored by the CPPMB. Monitoring of the success of the minor resettlement in the affected areas will be undertaken as part of the separate RP prepared for the subproject.

Performance Monitoring

107. Performance monitoring is required to assess the overall performance of the EMP. A performance monitoring system is normally developed by the EA for the entire subproject. Selected indicators of major components of the environment that will be affected primarily by the construction phase are drawn from the mitigation and monitoring plans and summarized in Table 26.

E. Reporting

108. Regular reporting on the implementation of mitigation measures, and on monitoring activities during construction phase of the subproject is required. Reporting is the responsibility of IA/ESU and should be conducted in conjunction with regular meetings with stakeholders as part of the continuation of stakeholder communications. The mitigation and monitoring plans (Tables 22-25) summarize proposed timing of reporting.

109. A report on environmental monitoring and implementation of EMP will be prepared quarterly for the EA by the IA/ESU. The IA report will compile monthly reports provided by the EO of Contractor, the reports of the EMC on monitoring, and input from the ES of the PIC. The IA/ESU report will also be sent to the DONRE and ADB. The reports will table all indicators measured with the monitoring plan of EMP including performance monitoring indicators (Table 25), and will include relevant GoV environmental quality standards. A semi-annual report on the environment monitoring of the subproject must be prepared and submitted to the ADB by the EA

Table 24. Environmental monitoring plan for the 500 kV Chon Thanh substation

ENVIRONMENTAL EFFECTS MONITORING							
Environmental Indicators	**Location**	**Means of Monitoring**	**Frequency**	**Reporting**	**Responsibility**		**Estimated Cost (USD)**
					Supervision	**Implementation**	
Pre-construction Phase – Review Baseline Conditions							
Review where necessary baseline on sensitive receptors (e.g., cultural property and values, new schools or hospitals, rare/endangered species, critical habitat at all substation areas.	A) Substation location including access road B) RoWs for connector lines	Original field work, community consultations	Once	Once	PIC/ESU	Environmental Monitoring Consultant	$1,000.
A) Qualitative air quality: dust, noise B) Visual qualitative affected surface water quality, i.e., TSS, oil and grease,	A) At SS and along connector lines B) At SS and along connector lines	Using field and analytical methods approved by DONRE.	A) One day and one night measurement b) One measurement	One baseline supplement report before construction phase starts	PIC/ESU	Environmental Monitoring Consultant	A) $1,000 B) $1,000.
Inventory of present and past land uses that could cause contaminated soil.	Possible contaminated lands at all excavation sites	Using field and analytical methods approved by DONRE.	Once	Once	PIC/ESU	Environmental Monitoring Consultant	$500.
Construction of Chon Thanh substation and connector lines							
Analysis of soil quality (heavy metals (As, Cd, Pb, oil and grease,	Possible contaminated lands at all excavation sites	Using field and analytical methods approved by DONRE.	**Once if needed**	Once	ESU	Environmental Monitoring	$2,500.

hydrocarbons).						Consultant	
A) Qualitative air quality: dust, noise B)) Visual affected surface water quality TSS, oil and grease C) Analysis of contaminated soil quality (heavy metals (As, Cd, Pb, Hg, Mn), hydrocarbons. D) Domestic (worker) and construction solid waste inside and outside construction sites including worker camps. E) Public comments and complaints F) Incidence of worker or public accident or injury	A and B): Baseline sites of pre-construction phase. C) At sites where contaminated soil is suspected. D) All construction sites and worker camps E) Using hotline number placed at construction areas F) At all construction areas	A – C : Using field and analytical methods approved by DONRE. Include visual observations of dust and noise from contractor and public reports . D) Visual observation E) Information transferred by telephone hotline number posted at all construction sites. F) regular reporting by contractors/ESU	(A – B): Quarterly during construction periods Daily visual records C) Once at start of excavations D) Monthly E) Continuous public input F) Continuous	Monthly	(A - D):		A and B: $1,000./yr C: $1,000./yr D: no marginal cost
					ESU	Monitoring Consultant	
					(E and F) and daily observations:		E: $1,000./yr F: no marginal cost
					IA/ESU	contractor	
Operation of Chon Thanh substation and connector lines							
Incidence of worker accidents, or spills on hazardous materials	At substation and along connector lines	Regular documentation and reporting	Continuous	Quarterly	PTC4		O and M

Table 25. Performance monitoring indicators for Chon Thanh subproject

Environmental Component	Key Indicator	Performance Objective	Data Source
Pre-construction Phase			
Public Consultation and Disclosure	Affected public and stakeholders	Meetings with public stakeholders contacted during IEE and new stakeholders convened for follow-up consultation and to introduce grievance mechanism	Minutes of meeting, and participants list
EMP	Final EMP	All stakeholders contacted during IEE re-contacted for follow-up consultation	EMP
Bid Documents	Requirements of EMP (CEMP[20])	EMP appended to bidding documents with clear instructions to bidders for CEMP	Bid documents
Training of IA/ESU	Training course(s) and schedule	By end of pre-construction phase, required course(s) that will be delivered are designed and scheduled	Course(s) outline, participants, and schedule
Construction Phase			
Affected water quality	Visual TSS, oil and grease,	GoV environmental standards and criteria met	Monitoring by EMC[21]
Air quality	Visual dust and noise	Levels never exceed pre-construction baseline levels	EMC and contractor monitoring reports,
Soil quality	Solid and liquid waste	Rigorous program of procedures and rules to collect and store all waste from construction camps and sites practiced.	Contractor and EMC monitoring reports
Hazardous materials and waste	Oil, gasoline, grease	Rigorous program of procedures to manage and store all waste from construction camps and sites practiced.	Contractor and EMC monitoring reports
Public and worker safety	Frequency of injuries	Adherence to GoV occupational health and Safety regulations[22]	Contractor reports
Cultural property	Incidence of damage, or complaints	No valued cultural property, or unearthed valuable relic is harmed in any way	Public input, contractor reports, public input, EMC reports
Traffic	Frequency of disruptions and blocked roadways	Disruptions, stoppages, or detours are managed to absolute minimum.	Public input, contractor reports, EMC reports

[20] Contractor Environmental Management Plan developed from EMP in contractor bidding document
[21] Environmental Monitoring Consultant hired to assist implementation of Environmental Monitoring Plan
[22] OSH Guidelines provided by MOLISA, *or* IFC World Bank EHS (2007) *for* Electric Power Transmission & Distribution

Environmental Component	Key Indicator	Performance Objective	Data Source
Operation of Chon Thanh substation and connector lines			
Worker and Public Safety	Frequency of accidents and spills	No increase in pre-construction frequency	EA

F. Estimated Cost of EMP

110. The marginal costs for implementing the EMP are primarily for environmental monitoring because the costs for implementing impact mitigation measures are included with the construction costs in Contractor bid documents. The preliminary cost for the implementation of the EMP for the subproject including an estimated environmental training budget for NPT / PPBM is approximately USD $17,000.00 which is summarized in Table 27. The environmental costs in Table 27 are primarily for field sampling which include professional per diems of technicians.

Table 26. Estimated costs for Environmental Monitoring Plan of EMP

Activity Type	Estimated Cost (USD)
Pre-construction Phase	
Updating Environmental Baseline	
cultural receptors	$1,000.00
environmental quality	$2,500.00
Construction Phase	
environmental quality	$6,500.00
public consultation	$2,000.00
Operation Phase	
environmental quality	no cost
public input	no cost
Training and capacity development of NPT / PPBM / ESU	$5,000.00
Total	**$17,000.00**

111. An estimated budget of USD $5,000.00 is required for training of the EA/IA/ESU on environmental assessment and management, and the implementation of the EMP. The estimated costs of the EMP and training will need to be updated by the PIC in conjunction with the IA/ESU during the pre-construction phase.

X. EMERGENCY RESPONSE PLAN

112. The Contractor must develop emergency or incident response procedures during construction and operation phases of the new 500 kV Chon Thanh substation and connector lines to protect workers and the public. The emergency response plan (ERP) outlines the roles and responsibilities of persons from first identification of an incident or emergency to the final steps of

safe and complete closure of the situation. The detailed requirements for the ERP are described in Appendix D.

XI. INSTITUTIONAL CAPACITY REVIEW AND NEEDS

113. Currently there is insufficient experience and capacity for environmental assessment and management in CPPMB for the implementation of the EMP, and to develop future safeguards for the non-core subprojects. The PIC with assistance from the ESU/IA of the subproject will develop and deliver training courses to the IA staff including the EO of the Contractor. The purpose of the course(s) is to strengthen the ability of the project owner including the ESU to oversee implementation of the EMP by construction Contractors, and EMC. Costs for training should be included with costs for implementation of the EMP.

114. Training on the implementation of an EMP should address two thematic areas. The first area should be principles environmental assessment and management focused on the potential impacts of subproject activities on the natural and social environments. The second area should be environmental safeguard requirements of the ADB and GoV with specific reference to the EMP.

XII. CONCLUSIONS AND RECOMMENDATION

115. The initial examination of the 500 kV Chon Thanh substation and 220 kV and 500 kV connector lines in Binh Phuoc province indicates that potential environmental impacts are construction-related impacts and disturbances that can be mitigated and managed.

116. The public consultation meetings underscored the need for effective management of construction impacts such as noise, dust, traffic disruptions, and public safety. Follow-up meetings with the consulted stakeholders to address any construction-related issues are required. The civil construction impacts of elevated dust, noise, traffic disruptions, erosion and sedimentation, and public and worker safety can be managed effectively with standard construction practices (e.g., EHS Guidelines, IFC/World Bank Group, 2007, *for* Electric Power Transmission & Distribution.

117. The IEE concludes that the description of the feasibility design of the subproject combined with available information on the affected environment is sufficient to identify the scope of potential environmental impacts of the subproject. Providing that significant changes do not occur to the design of one or more of the subproject components, and that new sensitive environmental or PCR components are not identified in pre-construction phase, further detailed environmental impact assessment (EIA) of the subproject is not required.

APPENDIX A: RAPID ENVIRONMENTAL ASSESSMENT OF SUBPROJECT

Rapid Environmental Assessment Checklist Power Transmission

Country / Project Title: Preparation for Tranche 3 as part of the MFF Power Transmission Investment Program financed by ADB: Chon Thanh 500 kV Substation

Sector / Division: Energy / SEEN

Screening Questions	Yes	No	Remarks
A. PROJECT SITING IS THE PROJECT AREA ADJACENT TO OR WITHIN ANY OF THE FOLLOWING ENVIRONMENTALLY SENSITIVE AREAS?			
▪ CULTURAL HERITAGE SITE		X	
▪ PROTECTED AREA		X	
▪ WETLAND		X	
▪ MANGROVE		X	
▪ ESTUARINE		X	
▪ BUFFER ZONE OF PROTECTED AREA		X	
▪ SPECIAL AREA FOR PROTECTING BIODIVERSITY		X	
B. POTENTIAL ENVIRONMENTAL IMPACTS WILL THE PROJECT CAUSE…			
▪ encroachment on historical/cultural areas, disfiguration of landscape and increased waste generation?		X	
▪ encroachment on precious ecosystem (e.g. sensitive or protected areas)?		X	
▪ alteration of surface water hydrology of waterways crossed by roads and resulting in increased sediment in streams affected by increased soil erosion at the construction site?		X	
▪ damage to sensitive coastal/marine habitats by construction of submarine cables?		X	
▪ deterioration of surface water quality due to silt runoff, sanitary wastes from worker-based camps and chemicals used in construction?		X	The EMP include mitigation measures for managing waste from temporary construction camps.
▪ increased local air pollution due to rock crushing, cutting and filling?		X	No such activities on construction sites
▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?	X		The EMP will prescribes mitigation measures and existing national and international guidelines and policy

Screening Questions	Yes	No	Remarks
▪ chemical pollution resulting from chemical clearing of vegetation for construction site?		X	
▪ noise and vibration due to blasting and other civil works?	X		Minimal noise is anticipated during construction and installation of towers. EMP prescribes noise and dust mitigation plans. There will be no blasting..
▪ dislocation or involuntary resettlement of people?		X	.
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?		X	
▪ social conflicts relating to inconveniences in living conditions where construction interferes with pre-existing roads?	X		Minor potential impact. The EMP includes mitigation measures for managing traffic caused by construction to prevent of minimize disturbance to regular traffic and local community
▪ hazardous driving conditions where construction interferes with pre-existing roads?	X		As above mitigation measures EMPs exists for managing construction truck traffic to prevent of minimize disturbance to regular traffic and local community
▪ creation of temporary breeding habitats for vectors of disease such as mosquitoes and rodents?		X	
▪ dislocation and compulsory resettlement of people living in right-of-way of the power transmission lines?		X	
▪ environmental disturbances associated with the maintenance of lines (e.g. routine control of vegetative height under the lines)?	X		New transmission lines will require regular maintenance causing minor local disturbances
▪ facilitation of access to protected areas in case corridors traverse protected areas?		X	
▪ disturbances (e.g. noise and chemical pollutants) if herbicides are used to control vegetative height?		X	Herbicides will not be used during construction
▪ large population influx during project construction and operation that cause increased burden on social infrastructure and services (such as water supply and sanitation systems)?	X		Migrant worker population will be small, however, EMP have mitigation measures managing influx and activities of workers and temporary camps. Use of local workers will be maximized.
▪ social conflicts if workers from other regions or countries are hired?	X		As above
▪ poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases from workers to local populations?	X		The EMP prescribe mitigation measures for solid and liquid waste management in temporary construction worker camps.
▪ risks to community safety associated with maintenance of lines and related facilities?		X	
▪ community health hazards due to electromagnetic fields, land subsidence, lowered groundwater table, and salinization?		X	Human health effects of EMF have not been established by international medical community (see Appendix of IEE). Land subsidence, lowering of groundwater table and salinization are not expected to occur .

Screening Questions	Yes	No	Remarks
▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?	X		Minimal risks if any. Information campaign will be provided to community prior to and during construction. EMP will have provisions to reduce or mitigate these impacts.
▪ community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project (e.g., high voltage wires, and transmission towers and lines) are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?	X		Minimal risks if any. Information campaign will be provided to community prior to and during construction. EMP will have provisions to reduce or mitigate these impacts.

Checklist for Preliminary Climate Risk Screening

Country/Project Title: Preparation of Tranche III of MFF for Power Distribution Development Project: 500 kV Chon Thanh Substation

Sector: Power Transmission

Subsector: Transmission

Division/Department: SEEN / SERD

Screening Questions		Score	Remarks
Location and Design of project	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?	0	No. Chon Thanh substation site is inland and located on well drained plantation areas
	Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)?	0	No.
Materials and Maintenance	Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?	0	
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s) ?	0	
Performance of project outputs	Would weather/climate conditions, and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?	0	

Result of Initial Screening (Low, Medium, High): Low

Other Comments: n/a

APPENDIX B: MINUTES AND PARTICIPANTS OF PUBLIC CONSULTATIONS

10

ADB TA-7742 VIE: Power Transmission Investment Program (MFF)
CHƯƠNG TRÌNH ĐƯỜNG DÂY TRUYỀN TẢI ĐIỆN (MFF)

Tiểu dự án Trạm biến áp 500kV Chơn Thành và đấu nối

CỘNG HOÀ XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự Do - Hạnh phúc
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Minh Thành, Ngày 24 tháng 03 năm 2015

BIÊN BẢN HỌP THAM VẤN CỘNG ĐỒNG VỀ ĐÁNH GIÁ MÔI TRƯỜNG VÀ TÁI ĐỊNH CƯ

Tiểu dự án: Trạm biến áp 500kV Chơn Thành và đấu nối
Phường/Xã: Minh Thành, Quận/Huyện: Chơn Thành Thành phố tỉnh Bình Phước

1. Thành phần tham dự

- Ông/Bà: Phạm Đình Tùng Chức vụ: P. chủ tịch UBND xã
- Ông/Bà: Huỳnh Thị Ngọc Hoa Chức vụ: Chủ tịch hội phụ nữ
- Ông/Bà: Lê Văn Nhơn Chức vụ: Đại diện cộng đồng
- Ông/Bà: Lê Kim Anh Chức vụ: Chuyên gia ADB
- Ông/Bà: Lưu Văn Huyến Chức vụ: Chuyên gia ADB
- Ông/Bà: Trần Hữu Phước Chức vụ: Chuyên viên PECC3
- Đại diện những người bị ảnh hưởng: .....người (*chi tiết xem danh sách đính kèm*)

2. Nội dung tham vấn

- ***Tư vấn thiết kế giới thiệu dự án***: Vị trí trạm, tuyến đường; vị trí và chiều dài tuyến trên địa bàn phường, xã.
- ***Tư vấn môi trường trình bày về:*** Chính sách môi trường của ADB; Các quy định về môi trường trong ngành điện của chính phủ Việt Nam; Các tác động về môi trường và các biện pháp giảm thiểu tương ứng (như trong IEE); Cơ chế khiếu nại khi có các vấn đề môi trường xảy ra

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Tiểu dự án

3. Ý kiến thảo luận

3.1 Về các tác động môi trường tiêu cực và biện pháp giảm thiểu

Dự án khi chuẩn bị mặt bằng có thể phát sinh chất thải rắn thực vật, trong giai đoạn xây dựng có thể phát sinh nước thải, bụi cát, dầu mỡ thi công và chuyển nguyên vật liệu. Biện pháp giảm thiểu: Dự án đường dây ít gây ô nhiễm môi trường trong suốt toàn bộ quá trình xây dựng thiên khai dự án. Nếu có phát sinh chủ đầu tư dự án yêu cầu đơn vị thi công phải thu gom và đảm bảo không gây ô nhiễm môi trường.

Đường dây đi qua khu dân cư có ảnh hưởng đến môi trường và cuộc sống người dân do phát sinh điện từ trường. Biện pháp giảm thiểu: Khi thiết kế và vận hành đường dây. Chủ đầu tư đảm bảo điện từ trường phát sinh không gây ảnh hưởng đến môi trường và người dân theo đúng quy định của nhà nước.

3.2 Về các vấn đề thu hồi đất và các tài sản trên đất và các chính sách

Đất đai và nhà cửa nằm trong hành lang an toàn có được bồi thường, hỗ trợ hay không?

Đất đai, tài sản trên đất sẽ được bồi thường, hỗ trợ theo đúng Luật đất đai, nghị định về hướng dẫn luật đất đai và Nghị định 14 của chính phủ.

Tại sao thiết kế không thẳng mà đi vòng khi qua vùng cao su?

Dự án ưu tiên thiết kế đi thẳng tuy nhiên một vài vị trí phải né vòng để tránh vào đất ở, khu dân cư, khu quy hoạch địa phương.

Khi thu hồi đất, cây cối phải bồi thường thỏa đáng cho người dân bằng hoặc cao hơn giá trị bù dự án đường dây.

Cung cấp các số liệu chính xác cho người dân khi đo kiểm cắm mốc.

Tiểu dự án

Cần minh bạch niêm yết công khai đền giá bồi thường để người dân nắm rõ.
Trong khu vực đất của xã chủ yếu chỉ có thể trồng cây cao su vì vậy yêu cầu nhà nước hỗ trợ và giảm thiểu diện tích đất bị ảnh hưởng trong hành lang lưới điện

4. Kết luận

Chính quyền và nhân dân xã mình thành thống nhất chủ trương đầu tư xây dựng dự án.

Đại diện Chủ đầu tư	Đại diện cộng đồng	Đại diện tư vấn	Đại diện UBND xã
	Lê Văn Nhoi	Trần Xuân Phúc	KT. CHỦ TỊCH Phạm Đình Cùng

ADB TA-7742 VIE: Power Transmission Investment Program (MFF)
CHƯƠNG TRÌNH ĐƯỜNG DÂY TRUYỀN TẢI ĐIỆN (MFF)

Tiểu dự án TBA 500 KV Chơn thành và đấu nối

PUBLIC CONSULTATION ON ENVIRONMENT AND SOCIAL/RESETLEMENT

THAM VẤN CỘNG ĐỒNG VỀ MÔI TRƯỜNG VÀ XÃ HỘI/TÁI ĐỊNH CƯ

LIST OF PARTICIPANTS
DANH SÁCH NGƯỜI THAM DỰ

Date (Ngày tháng) : 24/03/2015
Location (địa điểm) : Xã Minh Thành

No. TT	Họ và tên (Name)	Nam (M)	Nữ (F)	Chức vụ (Position)	Cơ quan/Địa chỉ (Organization/Address)	Chữ ký (Signature)
1	Huỳnh Thị Nguyệt Hoa		x			
2	Nguyễn Văn Hướng		x			
3	Trần Thị Nga		x			
4	Nguyễn Văn Thanh	x				
5	Trần Văn Dậu				Ấp 5 Tổ 5	
6	Trần thị Bé				Ấp 5 Tổ 5	
7	Lê Văn Nhẫn	x			Ấp 3 Tổ 2.	
8	Nguyễn Đình Phú	x				
9	Nguyễn Đình Tùa				Ấp 4.	
10	Vũ Khắc Trường			CB.GTXD	Xã Minh thành	
11	Hồ Đắc Cường				Ấp 3	
12	Trần Nhật Linh	x			Ấp 3	
13	Đào Văn Huy	x		P CTHND		
14	Đồng Nguyễn Thường Việt				Ấp 1	
15	Lê Thị Phương Chi		X		Ấp 2	
16	Lê Thị Tường		X	PCT. HPN xã	UBND	
17	Hoàng Thị Oanh		x		ấp 5	
18,	Đỗ Thị Sáng		x		ấp 5	
19,	Đỗ Thị Nhung		x		ấp 5	
20	Phạm văn Bình		x		ấp 4	
21	Huỳnh Tân		x		ấp 4	
22	Hoàng Thị Tính		X		Ấp 3	

Tiểu dự án

93	Đào Văn Nhạc				Ấp 5, M Thành	
94	Tăng Quang Nhàng				Ấp 9, M Thành	
95	Liêu Văn Sáu				Ấp 7, M Thành	
96	Nguyễn Đức Hùng				Ấp 1, M Thành	
97	Nguyễn Văn Chiến				Ấp 5, M Thành	
98	Thái Văn Thông				Ấp 5, M Thành	

Tiểu dự án Trạm biến áp 500kV Chơn thành và đấu nối

CỘNG HOÀ XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự Do - Hạnh phúc
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Nha Bích..., Ngày 25 tháng 03 năm 2015

BIÊN BẢN HỌP THAM VẤN CỘNG ĐỒNG VỀ ĐÁNH GIÁ MÔI TRƯỜNG VÀ TÁI ĐỊNH CƯ

Tiểu dự án: TBA 500kV Chơn Thành và đấu nối
Phường/Xã: Nha Bích, Quận/Huyện: Chơn Thành Thành phố tỉnh Bình Phước

1. Thành phần tham dự

- Ông/Bà: Lâm Bích Xê A Chức vụ: Chủ tịch UBND xã
- Ông/Bà: Thị Cúc Chức vụ: Chủ tịch Hội phụ nữ
- Ông/Bà: Lê Bá Thế Chức vụ: Chủ tịch Hội nông dân
- Ông/Bà: Trương Văn Ngon Chức vụ: đại diện cộng đồng
- Ông/Bà: Lê Kim Anh Chức vụ: Chuyên gia ADB
- Ông/Bà: Trần Hữu Thiết Chức vụ: chuyên gia PECC3.
- Đại diện những người bị ảnh hưởng: .....người (*chi tiết xem danh sách đính kèm*)

2. Nội dung tham vấn

- ***Tư vấn thiết kế giới thiệu dự án***: Vị trí trạm, tuyến đường; vị trí và chiều dài tuyến trên địa bàn phường, xã.
- ***Tư vấn môi trường trình bày về:*** Chính sách môi trường của ADB; Các quy định về môi trường trong ngành điện của chính phủ Việt Nam; Các tác động về môi trường và các biện pháp giảm thiểu tương ứng (như trong IEE); Cơ chế khiếu nại khi có các vấn đề môi trường xảy ra

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Tiểu dự án – TBA 500 kV Chơn Thành và đấu nối

3. Ý kiến thảo luận

3.1 Về các tác động môi trường tiêu cực và biện pháp giảm thiểu

– Bề rộng hành lang tuyến của đường dây là bao nhiêu m ? cần thiết kế không gây ảnh hưởng đến cây cối, hoa màu người dân.

Biện pháp giảm thiểu: Về rộng hành lang an toàn thiết kế theo Nghị định 14 của Ngành điện và hạn chế tối đa ảnh hưởng đến cây cối, hoa màu người dân.

– Điện từ trường sẽ gây ảnh hưởng đến sức khỏe người dân, cần có biện pháp giảm thiểu. Người dân sống dưới đường dây sẽ nguy hiểm và dễ bị ảnh hưởng nhiều nhất. Biện pháp giảm thiểu: điện từ trường của đường dây được thiết kế để không gây ảnh hưởng đến sức khỏe người dân, hỗ trợ cho người dân dưới hành lang an toàn.

3.2 Về các vấn đề thu hồi đất và các tài sản trên đất và các chính sách

– Đường dây đi qua diện tích đất ảnh hưởng nhiều đến diện tích đất canh tác người dân thì giải quyết như thế nào? Khi diện tích đất bị ảnh hưởng > 70% thì nhà nước sẽ đền bù 100% giá trị đất của người dân.

– Đơn giá bồi thường phải bằng hoặc cao hơn giá thị trường.

Đơn giá bồi thường hiện nay đã được chính phủ và nhà tài trợ (ADB) đưa ra chính sách và đơn giá bồi thường bằng hoặc cao hơn giá thị trường.

– Khi tiến hành dự án người dân bị ảnh hưởng yêu cầu nhà nước hỗ trợ như vậy vấn đề người dân chuyển đổi nghề nghiệp, thay đổi nguồn kiếm sống đảm bảo đời sống người dân.

– Nhà của được phép tồn tại trong hành lang an toàn không?

Tiểu dự án TBA 500 KV chơn thành và đấu nối

đối với DD 220 KV nhà cửa và công trình được phép tồn tại dưới hành lang an toàn và được sửa chữa, cải tạo, tiếp địa mới

tạo điều kiện, nguồn vốn giúp đỡ phụ nữ trong khu vực bị ảnh hưởng từ phụ nữ ổn định cuộc sống

4. Kết luận

UBND xã và nhân dân xã nhà bích thống nhất việc xây dựng dự án trên địa bàn xã

Đại diện Chủ đầu tư	Đại diện cộng đồng	Đại diện tư vấn	Đại diện UBND xã
	Trương Văn Ngọn	Trần Xuân Phú	CHỦ TỊCH Lâm Phích Xô A

ADB TA-7742 VIE: Power Transmission Investment Program (MFF)
CHƯƠNG TRÌNH ĐƯỜNG DÂY TRUYỀN TẢI ĐIỆN (MFF)

Tiểu dự án - TBA 500 kV Chơn Thành và đấu nối

PUBLIC CONSULTATION ON ENVIRONMENT AND SOCIAL/RESETLEMENT

THAM VẤN CỘNG ĐỒNG VỀ MÔI TRƯỜNG VÀ XÃ HỘI/TÁI ĐỊNH CƯ

LIST OF PARTICIPANTS
DANH SÁCH NGƯỜI THAM DỰ

Date (Ngày tháng): 25/03/2015
Location (địa điểm): Xã Nha Bích

No. TT	Họ và tên (Name)	Nam (M)	Nữ (F)	Chức vụ (Position)	Cơ quan/Địa chỉ (Organization/Address)	Chữ ký (Signature)
1	Lê Bá Thế	1963		chủ tịch HĐND xã	xã Nha Bích	
2	Phi Cúc	1976	1976	chủ tịch Hội PN	xã nha bích	
3	Bùi Thị Bảng Thi	1958		nông	xã nha bích	
4	Huỳnh T. Ánh Minh	Nữ		làm rẫy	ấp Suối Ngang	
5	Lê văn Xếp	Nam		làm rẫy	ấp Suối Ngang	
6	Trần Xuân Bích	Nam		làm rẫy	Ấp Suối Ngang	
7	Lê Văn Xếp	Nam		làm Rẫy	Ấp Suối ngang	
8	Nguyễn văn Thắng	Nam		làm Rẫy	Ấp Suối ngang	
9	Châu Nhật Hiền	Nam		làm Rẫy	Ấp Suối Ngang	
10	Nguyễn Văn Dũng	Nam		làm rẫy	Ấp Suối Ngang	
11	Nguyễn Thị Ly	Nữ		công nhân	Ấp Suối Ngang	
12	Nguyễn Văn Dũng (56)	Nam		làm Rẫy	Ấp Suối Ngang	
13	Trương Văn Ngon				Ấp Suối Ngang	
14	Nguyễn Văn					
14	Trần Văn Thùy	Nam		làm rẫy	11	
15	Hồ Thị Kim Nga		Nữ	Làm rẫy	1	

 Public consultation meeting at Minh Thanh commune	 Public consultation meeting at Nha Bich commune

APPENDIX C: CERTIFICATE OF EIA FOR CHON THANH SUBSTATION

ỦY BAN NHÂN DÂN **TỈNH BÌNH PHƯỚC**	**CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM** **Độc lập - Tự do - Hạnh phúc**
Số: 2946 /QĐ-UBND	*Bình Phước, ngày 31 tháng 12 năm 2014*

QUYẾT ĐỊNH

Phê duyệt Báo cáo đánh giá tác động môi trường Dự án trạm biến áp 500kV Chơn Thành và Đấu nối tại huyện Chơn Thành, tỉnh Bình Phước do Ban Quản lý các công trình điện Miền Trung Tổng công ty truyền tải điện Quốc gia làm chủ đầu tư

CHỦ TỊCH UBND TỈNH BÌNH PHƯỚC

Căn cứ Luật Tổ chức HĐND và UBND ngày 26/11/2003;

Căn cứ Luật Bảo vệ môi trường ngày 29/11/2005;

Căn cứ Nghị định số 29/2011/NĐ-CP ngày 18/4/2011 của Chính phủ Quy định về đánh giá môi trường chiến lược, đánh giá tác động môi trường, cam kết bảo vệ môi trường (Điều 19, 20);

Căn cứ Thông tư số 26/2011/TT-BTNMT ngày 18/7/2011 của Bộ Tài nguyên và Môi trường quy định chi tiết một số điều của Nghị định số 29/2011/NĐ-CP ngày 18/4/2011 của Chính phủ quy định về đánh giá môi trường chiến lược, đánh giá tác động môi trường, cam kết bảo vệ môi trường (Điều 15);

Căn cứ Quyết định số 1469/QĐ-UBND ngày 21/6/2011 của UBND tỉnh Bình Phước về việc phân vùng môi trường tiếp nhận nước thải và khí thải công nghiệp trên địa bàn tỉnh Bình Phước đến năm 2020;

Xét đề nghị của Giám đốc Sở Tài nguyên và Môi trường tại Tờ trình số 760TTr-STNMT ngày 24/12/ 2014,

QUYẾT ĐỊNH:

Điều 1. Phê duyệt Báo cáo đánh giá tác động môi trường Dự án trạm biến áp 500kV Chơn Thành và Đấu nối tại huyện Chơn Thành, tỉnh Bình Phước (sau đây gọi tắt là Dự án) do Ban Quản lý dự án các công trình điện Miền Trung Tổng Công ty truyền tải điện Quốc gia (sau đây gọi tắt là Chủ đầu tư) với các nội dung sau:

1. Vị trí, quy mô của dự án:

1.1. Vị trí thực hiện dự án: huyện Chơn Thành, tỉnh Bình Phước.

1.2. Công suất của dự án: 500 kV.

2. Yêu cầu bảo vệ môi trường đối với Dự án:

2.1. Phải xây dựng hệ thống thoát nước mưa và nước thải riêng biệt. Đảm bảo toàn bộ nước thải sinh hoạt phát sinh từ dự án phải được xử lý đạt Quy chuẩn Việt Nam QCVN 14:2008/BTNMT trước khi thải ra môi trường.

1

2.2. Trong quá trình xây dựng và hoạt động của dự án phải đảm bảo đáp ứng các yêu cầu về tiếng ồn theo quy định tại các Quy chuẩn Việt Nam QCVN 26:2010/BTNMT và độ rung theo quy định tại Quy chuẩn Việt Nam QCVN 27:2010/BTNMT. Thực hiện các biện pháp giảm thiểu tác động tiêu cực đến môi trường do bụi và các khí độc hại phát sinh trong quá trình hoạt động của dự án. Nồng độ bụi và các khí thải độc hại trong môi trường không khí xung quanh phải đảm bảo đạt các Quy chuẩn Việt Nam QCVN 05:2013/BTNMT, QCVN 06:2009/BTNMT.

2.3. Thực hiện thu gom, vận chuyển và xử lý các loại chất thải rắn sinh hoạt theo đúng quy định và các nội dung đã được trình bày trong nội dung báo cáo. Đối với dầu từ máy biến áp và các chất thải nguy hại phát sinh trong quá trình hoạt động của dự án phải được thu gom, vận chuyển, lưu giữ và xử lý theo quy định tại Thông tư số 12/2011/TT-BTNMT ngày 14/4/2011 của Bộ Tài nguyên và Môi trường quy định về quản lý chất thải nguy hại.

2.4. Thực hiện các biện pháp quản lý và kỹ thuật phòng, chống và khắc phục các sự cố do cháy, nổ khi vận hành, sửa chữa và bảo dưỡng công trình, các rủi ro và sự cố môi trường khác.

2.5. Trong quá trình hoạt động, Chủ đầu tư phải nghiêm chỉnh vận hành các công trình xử lý chất thải như trong báo cáo đánh giá tác động môi trường đã nêu, nếu có các sự cố về môi trường phải thông báo ngay cho Sở Tài nguyên và Môi trường biết để kiểm tra, xử lý.

2.6. Định kỳ thực hiện Chương trình giám sát môi trường về nước thải, nước ngầm, không khí, giám sát điện từ trường và thực hiện công tác thu gom, xử lý chất thải rắn, chất thải nguy hại theo đúng nội dung Báo cáo đánh giá tác động môi trường được phê duyệt gửi báo cáo về Sở Tài nguyên và Môi trường. Chương trình giám sát điện từ trường phải thực hiện theo hướng dẫn của Bộ Công thương.

2.7. Thực hiện các yêu cầu của địa phương tại Công văn số 22/CV-UBND ngày 05/9/2014 của UBND xã Minh Thành về việc xin ý kiến tham vấn trong quá trình lập báo cáo đánh giá tác động môi trường của Dự án Trạm 500 kV Chơn Thành; Công văn số 07/CV-UBMTTQ ngày 05/9/2014 của UBMTTQ xã Minh Thành về việc xin ý kiến tham vấn trong quá trình lập báo cáo đánh giá tác động môi trường của Dự án Trạm 500 kV Chơn Thành; Công văn số 50/CV-UBND ngày 05/9/2014 của UBND xã Nha Bích về việc xin ý kiến tham vấn trong quá trình lập báo cáo đánh giá tác động của Dự án Trạm 500 kV Chơn Thành và Công văn số 02/CV-UBMTTQ ngày 05/9/2014 của UBMTTQ xã Nha Bích về việc xin ý kiến tham vấn trong quá trình lập báo cáo đánh giá tác động môi trường của Dự án Trạm 500 kV Chơn Thành. Phối hợp chặt chẽ với chính quyền địa phương trong quá trình thực hiện Dự án để đảm bảo an ninh trật tự và ưu tiên tuyển dụng lao động tại địa phương.

Điều 2. Sau khi báo cáo đánh giá tác động môi trường được phê duyệt, Chủ đầu tư có trách nhiệm: Lập, phê duyệt và niêm yết công khai kế hoạch quản lý môi trường của Dự án. Nghiêm túc thực hiện các yêu cầu về bảo vệ môi trường trong giai đoạn chuẩn bị đầu tư, giai đoạn thi công xây dựng và giai đoạn hoạt động của Dự án.

Điều 3. Trong quá trình thực hiện nếu Dự án có những thay đổi so với các khoản 1 và 2 Điều 1 của Quyết định này, Chủ đầu tư phải có văn bản báo cáo và chỉ được thực hiện những thay đổi sau khi có văn bản chấp thuận của UBND tỉnh Bình Phước.

Điều 4. Quyết định phê duyệt Báo cáo đánh giá tác động môi trường của Dự án là căn cứ để quyết định việc đầu tư dự án; là cơ sở để các cơ quan quản lý nhà nước có thẩm quyền kiểm tra, thanh tra việc thực hiện công tác bảo vệ môi trường của Dự án.

Điều 5. Uỷ nhiệm Sở Tài nguyên và Môi trường thực hiện việc kiểm tra, giám sát và xác nhận việc thực hiện các nội dung bảo vệ môi trường trong báo cáo đánh giá tác động môi trường đã được phê duyệt tại Quyết định này.

Điều 6. Các ông (bà) Chánh Văn phòng UBND tỉnh; Giám đốc Sở Tài nguyên và Môi trường, Chi cục trưởng Chi cục Bảo vệ môi trường, Chủ tịch UBND huyện Chơn Thành, Chủ tịch UBND xã Minh Thành, Chủ tịch UBND xã Nha Bích, Ban quản lý dự án các công trình điện Miền Trung - Tổng Công ty truyền tải điện Quốc gia và Thủ trưởng các cơ quan, đơn vị có liên quan chịu trách nhiệm thi hành Quyết định này, kể từ ngày ký./.

CHỦ TỊCH

Nơi nhận:
- Bộ TN&MT;
- CT, PCT;
- Như Điều 6;
- LĐVP, Phòng KTN;
- Lưu: VT(HH454).

ỦY BAN NHÂN DÂN TỈNH BÌNH PHƯỚC

Nguyễn Văn Trăm

BINH PHUOC PEOPLE'S COMMITTEE

SOCIALIST REPUBLIC OF VIETNAM
Independence – Freedom – Happiness

No: 2946/QĐ-UBND

Binh Phuoc, December 31st, 2014

DECISION

Approval of Environmental impact assessment report of Project
"500kV Chon Thanh substation and connection"
Location: Chon Thanh district, Binh Phuoc province
Investor: Central Power Projects Management Board - National Power Transmission Corporation

CHẢIRMAN OF BINH PHUOC PEOPLE'S COMMITTEE

Pursuant to Law on Organization of People's Council and People's Committee dated November 26th, 2005;

Pursuant to Law on Environmental Protection dated November 29th, 2005;

Pursuant to Decree no.29/2011/ND-CP dated April 18th, 2001 of the Government regarding Regulation on strategic environment assessment, environmental impact assessment, and environmental protection commitment;

Pursuant to Circular no. 26/2011/TT-BTNMT dated July 18th, 2011 of Ministry of Natural Resources and Environment clarifying some articles of Decree no.29/2011/ND-CP dated April 18th 2001 of the Government.

Pursuant to Decision No. 1649/QD-UBND dated 21th June 2011 of Binh Phuoc CPP on environmental the partition receiving wastewater and industrial emissions in the province of Binh Phuoc 2020;

With reference to the request of the Director of Binh Phuoc DONRE in the Official Document no. 760/TTr-STNMT dated 24th December 2014.

DECISION

Article 1. Approving the Environmental impact assessment report of Project "500KV Chon Thanh substation and connection" (hereinafter referred to as the project) prepared by the Central Power Projects Management Board (hereinafter referred to as the project owner) with the following main contents:

1. The location and scale of the Project:

1.1. The location of the Project: Chon Thanh District, Binh Phuoc Province.

1.2. The capacity of the Project: 500kV.

2. The environmental protection requirement for the project:

2.1. The project owner and operation unit must be build storm-water drainage system and waste water. Ensures that all domestic wastewater generated from the project must be treated to meet the Standards Vietnam QCVN 14: 2008 / BTNMT before being discharged into the environment.

2.2. In the process of construction and operation of the project must ensure it meets the requirements of noise as defined in Standards Vietnam QCVN 26: 2010 / BTNMT and vibration as prescribed in the Standards Vietnam QCVN 27 : 2010 / BTNMT. Implement measures to mitigate the negative impact on the environment by dust and toxic gases generated during the operation of the project. The concentration of dust and toxic gases in ambient air environment to ensure that they meet the standards Vietnam QCVN 05: 2013 / BTNMT, QCVN 06: 2009 / BTNMT.

2.3. Implement collection, transportation and disposal of solid waste activities as prescribed and the content was presented in contents of the report. As for oil from transformers and hazardous waste generated during the operation of the project must be collected, transported, stored and handled as prescribed in Circular No. 12/2011 / TT-BTNMT dated 14th April 2011 of the Ministry of Natural Resources and Environment regulations on hazardous waste management.

2.4. Implement management measures and technical prevention and fight and overcoming the incidents by fire or explosion in operation, repair and maintenance building, the risks and other environmental problem.

2.5. In the process operation, the investor must strictly operation of the Project, waste treatment as EIA report has indicated, if there are environmental incidents must immediately notify the Department of Natural Resources and Environment for inspection and handling.

2.6. Periodically implement of environmental monitoring program for wastewater, groundwater, air, electric magnetic monitoring and implementation of the collection and disposal of solid waste, hazardous waste in accordance with the content of EIA report approved and will submit a report for the Department of Natural Resources and Environment. The monitoring program electric magnetic field must follow the guidance of the Ministry of Industry and Trade.

2.7. implement the requirements of the local in document No. 22 / CV-UBND dated 5th Sep 2014 of Commune People's Committee of Minh Thanh reference Public consultations in the process writing EIA report of the project 500 kV Chon Thanh substation; Document No. 07 / CV- UBMTTQ dated 9th May 2014 of the Fatherland Front Committee of Minh Thanh commune reference public consultations in the process writing EIA report of the project 500 kV Chon Thanh substation; Document No. 50 / CV-UBND dated 5th Sep 2014 of Nha Bich CPC reference Public consultations in the process writing EIA report of the project 500 kV Chon Thanh substation; Document No. 02 / CV-UBMTTQ dated 9th May 2014 of the Fatherland Front Committee of Nha Bich commune reference Public consultations in the process writing EIA report of the project 500 kV Chon Thanh substation. Coordinate strictly with local authorities in the process of project implementation to ensure security, order and preferential employment labor in local.

Article 2. After EIA report is approved, the project owner shall be responsible: establish, approve and publicly list the environmental management plan of the project; strictly satisfy the requirements of environmental protection in the preparation period for investment, the construction period and operational period of the Project;

Article 3. During the implementation process, changes on the content of paragraphs 1 and 2 of Article 1 of this Decision, if any, shall be submitted in a written report by the project owner and shall only be made upon written approval of Binh Phuoc Province People's Committee.

Article 4. The Decision approving the report on the assessment of environmental impact shall act as the foundation for project investment decision; as a basis for the State's competent management agencies to supervise and inspect the implementation of environmental protection of the project.

Article 5. Authorizing the Director of the Department of Natural Resources and Environment to authenticate the supplemental cover page of the approved report on the assessment of environmental impact and execute the examination and monitoring on the implementation of environmental protection in the approved report on the assessment of environmental impact of this Decision.

Article 6. Mr. (Mrs.) Chief of Office of the People's Committees of the province, Director of

the Department of Natural Resources and Environment, Manager of Binh Phuoc Environmental Protection Agency, Chairman of Minh Thanh CPC, Nha Bich CPC, CPPMB-NPT and the Heads of agencies and units are responsible for executing this decision./../.

Destination:
- MoNRE;
- Chairman, Vice Chairman;
- As the article 6;
- LĐ-VP, KTN;

CHAIRMAN

Nguyen Van Tram

APPENDIX D: EMERGENCY RESPONSE PLAN

The Contractor must develop emergency or incident response procedures (ERP) during construction. In the operational phase the operator/civil authorities will have responsibility for any emergencies or serious incidents. The construction phase should ensure:

i) Emergency Response Team (ERT) of the Contractor as initial responder;
ii) the District fire and police departments, emergency medical service, the Department of Public Health (DPH), collectively referred to as the External Emergency Response Team (EERT), as ultimate responders.

118. The Contractor will provide and sustain the required technical, human and financial resources for quick response during construction.

Table 27. Roles and Responsibilities in Emergency Incident Response

Entity	Responsibilities
Contractor Team (ERT)	- Communicates / alerts the EERT. - Prepares the emergency site to facilitate the response action of the EERT, e.g., vacating, clearing, restricting site. - When necessary and requested by the EERT, lends support / provides assistance during EERT's response operations.
External Emergency Response Team (EERT)	- Solves the emergency/incident
Contractor Resources	- Provide and sustain the people, equipment, tools and funds necessary to ensure Subproject's quick response to emergency situations. - Maintain good communication lines with the EERT to ensure prompt help response and adequate protection, by keeping them informed of Subproject progress.

119. The ERT will be led by the senior Contractor engineer (designated ERTL) on site with a suitably trained foreman or junior engineer as deputy. Trained first-aiders and security crew will be the core members of the ERT.

120. The Contractor will ensure that ERT members are physically, technically and psychologically fit for their emergency response roles and responsibilities.

121. Prior to the mobilization of civil works, the Contractor, through its Construction Manager, ERTL, in coordination with the EA/IA, will meet with the ultimate response institutions to discuss the overall construction process, including, but not limited to:

i) Subproject sites;
ii) construction time frame and phasing;
iii) any special construction techniques and equipment that will be used; i
iv) any hazardous materials that will be brought to and stored in the construction premise and details on their applications and handling/management system;

v) the Contractor's Emergency Management Plan
vi) names and contact details of the ERT members

122. The objective of this meeting is to provide the ultimate response institutions the context for:

i) their comments on the adequacy of the respective Emergency Management Plans
ii) their own assessment of what types, likely magnitude and likely incidence rate of potential hazards are anticipated
iii) the arrangements for coordination and collaboration.

123. To ensure effective emergency response, prior to mobilization of civil works, the Contractor will:

i) set up the ERT;
ii) set up all support equipment and facilities in working condition
iii) made arrangements with the EERT;
iv) conducted proper training of ERT members, and encouraged and trained volunteers from the work force; v) conducted orientation to all construction workers on the emergency response procedures and facilities, particularly evacuation procedures, evacuation routes, evacuation assembly points, and self-first response, among others; and vi) conducted drills for different possible situations.

124. To sustain effective emergency response throughout Subproject implementation an adequate budget shall be provided to sustain the capabilities and efficiency of the emergency response mechanism, the emergency response equipment, tools, facilities and supplies. Drills and reminders will take place regularly, the former at least every two months and the latter at least every month.

Alert Procedures

125. Means of communicating, reporting and alerting an emergency situation may be any combination of the following: i) audible alarm (siren, bell or gong); ii) visual alarm (blinking/rotating red light or orange safety flag); iii) telephone (landline); iv) mobile phone; v) two-way radio; and vi) public address system/loud speakers. Some rules relative to communicating/alerting will be:

(i) Whoever detects an emergency situation first shall immediately :
- call the attention of other people in the emergency site,
- sound the nearest alarm, and/or
- report/communicate the emergency situation to the ERT.

(ii) Only the ERTL and, if ERTL is not available, the Deputy ERTL are authorized to communicate with the EERT. Exceptional cases to this rule may be necessary and should be defined in the Emergency Management Plans.

(iii) When communicating/alerting an emergency to the EERT, it is important to provide them with at least: i) the type of emergency situation; ii) correct location of the emergency; ii) estimated magnitude of the situation; iii) estimated persons harmed; iv) time it happened; v) in case of a spill, which hazardous substance spilled; and vi) in case of fire and explosion, what caused it. Such details would allow the EERT to prepare for the appropriate response actions. For an effective reporting/alerting of an emergency situation:

(i) The names and contact details of the relevant persons and institutions should be readily available in, or near to, all forms of communication equipment, and strategically posted (at legible size) in all Subproject sites and vehicles:

- Most relevant construction/operations staffs namely, the ERTL, Deputy ERTL, first-aiders, supervising engineers, foremen

- EERT institutions/organizations
- Concerned village authority/ies
- IA Office, SS

(ii) All Subproject sites should have good access to any combination of audible and visual alarms, landline phones, mobile phones and two-way radio communication at all times.

(iii) Contractor's construction vehicles should also be equipped with the appropriate communication facilities.

Emergency Response Situations

126. The following tables suggest general procedures that will be refined in the final EMP during detailed design, and described in more detail in the Emergency Management Plans of the Contractor.

Table 28. Evacuation Procedure

Procedure	Remarks
▪ Move out as quickly as possible as a group, but avoid panic.	▪ All workers/staff, sub-contractors, site visitors to move out, guided by the ERT.
▪ Evacuate through the directed evacuation route.	▪ The safe evacuation shall have been determined fast by the ERTL/Deputy ERTL and immediately communicated to ERT members.
▪ Keep moving until everyone is safely away from the emergency site and its influence area.	▪ A restricted area must be established outside the emergency site, all to stay beyond the restricted area.
▪ Once outside, conduct head counts.	▪ Foremen to do head counts of their sub-groups; ERTL/Deputy ERTL of the ERT.
▪ Once outside, conduct head counts.	▪ Foremen to do head counts of their sub-groups; ERTL/Deputy ERTL of the ERT.
▪ Report missing persons to EERT immediately.	▪ ERTL/Deputy ERTL to communicate with the EERT.
▪ Assist the injured in evacuation and hand them over to the ERT first-aiders or EERT medical group	▪ ERT to manage injured persons to ensure proper handling.
▪ If injury warrants special care, DO NOT MOVE them, unless necessary and instructed/directed by the EERT.	▪ ERTL/Deputy ERTL communicates with EERT to get instructions/directions in handling the injured.

Table 29. Response Procedure During Medical Emergency

Procedure	Remarks
▪ Administer First Aid regardless of severity immediately.	▪ Fundamentals when giving First Aid: - Safety first of both the rescuer and the victim. - Do not move an injured person unless: - victim is exposed to more danger when left where they are, e.g., during fire, chemical spill - it would be impossible for EERT to aid victims in their locations, e.g.,

Procedure	Remarks
	under a collapsed structure - instructed or directed by the EERT. ▪ First AID to be conducted only by a person who has been properly trained in giving First Aid.
▪ Call the EERT emergency medical services and/or nearest hospital.	▪ ERTL/Deputy ERTL or authorized on-site emergency communicator
▪ Facilitate leading the EERT to the emergency site.	▪ ERTL/Deputy ERTL to instruct: - an ERT member on- site to meet EERT in access road/strategic location. He/she shall hold orange safety flag to get their attention and lead them to site. - Other ERT members to clear access road for smooth passage of the EERT.
▪ If applicable, vacate site and influence area at once, restrict site, suspend work until further notice.	▪ Follow evacuation procedure.

Table 30. Response Procedure in Case of Fire

Procedure	Remarks
▪ Alert a fire situation.	▪ Whoever detects the fire shall immediately: - call the attention of other people in the site, - sound the nearest alarm, and/or - Foreman or any ERT member among the construction sub-group contacts the fire department (in this case it should be agreed on that it is alright for any ERT member in the sub-group to alert the fire department) - report/communicate the emergency situation to the ERTL/Deputy ERTL.
▪ Stop all activities/operations and evacuate.	▪ All (non-ERT) workers/staff sub-contractors, site visitors and concerned public to move out to safe grounds following the evacuation procedure.
▪ Activate ERT to contain fire/control fire from spreading.	▪ Guided by the training they undertook, ERT members assigned to mitigate the fire shall assess their own safety situation first before attempting to control fire spread.
▪ Call the nearest fire and police stations and, if applicable, emergency medical services.	▪ When alerting the EERT, ERTL will give the location, cause of fire, estimated fire alarm rating, any injuries.
▪ Facilitate leading the EERT to the emergency site.	▪ ERTL/Deputy ERTL to instruct: - an ERT member to meet the EERT in the access road or strategic location

Procedure	Remarks
	and lead them to the site. He/she shall hold the orange safety flag to get their attention and lead them to the site. - some ERT members to stop traffic in, and clear, the access road to facilitate passage of the EERT.
▪ ERT to vacate the site as soon as their safety is assessed as in danger.	▪ Follow appropriate evacuation procedure.

APPENDIX E: HEALTH EFFECTS OF ELECTROMAGNETIC RADIATION EMF

127. The popular concern of negative health effects of exposure to electromagnetic fields (EMF) originally arose from exposure to high voltage transmission lines. Today the concern of EMF has spread to exposure to personal electronic sources of EMF such as microwave ovens and cellular phones. The World Health organization (WHO) as part of their mandate for monitoring global human health with specific focus on developing countries recently conducted an extensive review and assessment http://www.who.int/peh-emf/en/ of the validity of the concerns of EMF.

128. Provided below is the recent review and critical summary conducted by WHO of the extensive research on human health and EMF which is reprinted verbatim below. The portion of the research database published in primary is referenced follows the summary.

129. In the area of biological effects and medical applications of non-ionizing radiation approximately 25,000 articles have been published over the past 30 years. Despite the feeling of some people that more research needs to be done, scientific knowledge in this area is now more extensive than for most chemicals. Based on a recent in-depth review of the scientific literature, the WHO concluded that current evidence does not confirm the existence of any health consequences from exposure to low level electromagnetic fields. However, it is believed that some gaps in knowledge about biological effects exist and need further research.

Effects on general health:

130. Some members of the public have attributed a diffuse collection of symptoms to low levels of exposure to electromagnetic fields at home. Reported symptoms include headaches, anxiety, suicide and depression, nausea, fatigue and loss of libido. To date, scientific evidence does not support a link between these symptoms and exposure to electromagnetic fields. At least some of these health problems may be caused by noise or other factors in the environment, or by anxiety related to the presence of new technologies.

Effects on pregnancy outcome

131. Many different sources and exposures to electromagnetic fields in the living and working environment, including computer screens, water beds and electric blankets, radiofrequency welding machines, diathermy equipment and radar, have been evaluated by the WHO and other organizations. The overall weight of evidence shows that exposure to fields at typical environmental levels does not increase the risk of any adverse outcome such as spontaneous abortions, malformations, low birth weight, and congenital diseases. There have been occasional reports of associations between health problems and presumed exposure to electromagnetic fields, such as reports of prematurity and low birth weight in children of workers in the electronics industry, but these have not been regarded by the scientific community as being necessarily caused by the field exposures (as opposed to factors such as exposure to solvents).

Cataracts

132. General eye irritation and cataracts have sometimes been reported in workers exposed to high levels of radiofrequency and microwave radiation, but animal studies do not support the idea that such forms of eye damage can be produced at levels that are not thermally hazardous. There is no evidence that these effects occur at levels experienced by the general public.

Electromagnetic fields and cancer

133. Despite many studies, the evidence for any effect remains highly controversial. However, it is clear that if electromagnetic fields do have an effect on cancer, then any increase in risk will be extremely small. The results to date contain many inconsistencies, but no large increases in risk have been found for any cancer in children or adults.

134. A number of epidemiological studies suggest small increases in risk of childhood leukemia with exposure to low frequency magnetic fields in the home. However, scientists have not generally concluded that these results indicate a cause-effect relation between exposure to the fields and disease (as opposed to artifacts in the study or effects unrelated to field exposure). In part, this conclusion has been reached because animal and laboratory studies fail to demonstrate any reproducible effects that are consistent with the hypothesis that fields cause or promote cancer. Large-scale studies are currently underway in several countries and may help resolve these issues.

Electromagnetic hypersensitivity and depression

135. Some individuals report "hypersensitivity" to electric or magnetic fields. They ask whether aches and pains, headaches, depression, lethargy, sleeping disorders, and even convulsions and epileptic seizures could be associated with electromagnetic field exposure.

136. There is little scientific evidence to support the idea of electromagnetic hypersensitivity. Recent Scandinavian studies found that individuals do not show consistent reactions under properly controlled conditions of electromagnetic field exposure. Nor is there any accepted biological mechanism to explain hypersensitivity. Research on this subject is difficult because many other subjective responses may be involved, apart from direct effects of fields themselves. More studies are continuing on the subject.

The focus of current and future research

137. Much effort is currently being directed towards the study of electromagnetic fields in relation to cancer. Studies in search for possible carcinogenic (cancer-producing) effects of power frequency fields is continuing, although at a reduced level compared to that of the late 1990's.

138. The long-term health effects of mobile telephone usage is another topic of much recent research. No obvious adverse effect of exposure to low level radiofrequency fields has been discovered. However, given public concerns regarding the safety of cellular telephones, further research aims to determine whether any less obvious effects might occur at very low exposure levels.

a. Key emergent points

- A wide range of environmental influences causes biological effects. 'Biological effect' does not equal 'health hazard'. Special research is needed to identify and measure health hazards.
- At low frequencies, external electric and magnetic fields induce small circulating currents within the body. In virtually all ordinary environments, the levels of induced currents inside the body are too small to produce obvious effects.
- The main effect of radiofrequency electromagnetic fields is heating of body tissues.
- There is no doubt that short-term exposure to very high levels of electromagnetic fields can be harmful to health. Current public concern focuses on possible long-term health effects caused by exposure to electromagnetic fields at levels below those required to trigger acute biological responses.
- WHO's International EMF Project was launched to provide scientifically sound and objective answers to public concerns about possible hazards of low level electromagnetic fields.
- Despite extensive research, to date there is no evidence to conclude that exposure to low level electromagnetic fields is harmful to human health.

- The focus of international research is the investigation of possible links between cancer and electromagnetic fields, at power line and radio frequencies.

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