

Environmental Monitoring Report

4th Quarterly Report
February 2016

VIE: Power Transmission Investment Program - Tranche 2 500 kV Pleiku–My Phuoc–Cau Bong Transmission Line

Prepared by Central Viet Nam Power Projects Management Board (CPPMB) for National Power Transmission Corporation and the Asian Development Bank.

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NATIONAL POWER TRANSMISSION CORPORATION
CENTRAL VIETNAM POWER PROJECTS MANAGEMENT BOARD

ENVIRONMENTAL MONITORING REPORT
FOR THE FOURTH QUARTER OF 2015

(October - December 2015)

PLEIKU – MY PHUOC – CAU BONG 500 KV TRANSMISSION LINE PROJECT
(POWER TRANSMISSION INVESTMENT PROGRAM - TRANCHE 2)
(LOAN 2959-VIE)

December 2015

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ABBREVIATIONS

ADB	Asian Development Bank
AFD	Agency of French Development
CEMP	Contractor's Environmental Management Plan
CPCs	Commune People's Committees
CPMB	Central Power Projects Management Board
DARD	Department of Agriculture and Rural Development
DONRE	Department of Natural Resources and Environment
DRCC	District Resettlement and Compensation Committee
EIA	Environmental Impact Assessment
EMF	Electric and Magnetic Fields
EMR	Environmental Monitoring Report
EMP	Environmental Management Plan
EO	Environmental Officer
EVN	Electricity of Vietnam
FGDs	Focus Group Discussions
GoV	Government of Vietnam
IDIs	In-depth interviews
IEE	Initial Environmental Examination
MONRE	Ministry of Natural Resources and Environment
NPT	National Power Transmission Corporation
PAHs	The project affected households
PAPs	The project affected peoples
PPC	Provincial People Committee
PTC3	Power Transmission Company No.3
PTC4	Power Transmission Company No.4
RoW	Right of Way
TL:	Transmission line

1. INTRODUCTION

1.1. Description of the subproject

1. The Socialist Republic of Viet Nam has applied for a loan from the Asian Development Bank (ADB) for the co-financing with Agency of French Development (AFD) towards the cost of the Power Transmission Investment Program, Tranche 2. Part of the proceeds of the loan will be applied for the construction of the Pleiku - My Phuoc - Cau Bong 500 kV transmission line. The National Power Transmission Corporation (NPT) is the investor and executing agency. The Central Vietnam Power Project Management Board (CPMB) is the management and implementing agency for the subproject. The Pleiku - MyPhuoc - Cau Bong 500kV transmission line is a high priority project and is one of several projects for construction to meet its target of connecting 90% of the population to electricity by 2020 and 100% by 2025. The TL will meet the energy demand in the southern part of Vietnam growing at 14% per year and up to 25% in 2015. The TL constructed together along with the expansion of Pleiku substation will enhance power supply reliability for the rapid development in the southern provinces of Vietnam.

1.2. Location of the subproject

2. The Pleiku - My Phuoc - Cau Bong 500 kV transmission line is 437 km in length and traverses 5 provinces (Gia Lai, DakLak, DakNong, BinhPhuoc and Binh Duong) and Ho Chi Minh City. The TL does not cross or intrude into any buffer areas or any possible planned future extension of conservation areas (Figure 1).

1.3.Environmental Monitoring and Reporting Requirements

3. In compliance with Vietnamese policy, an EIA report met requirements of GoV Ministry of Natural Resources and Environment was prepared and approved in August 2011. Based on the ADB's Safeguard Policy Statement 2009 (SPS) the subproject was classified as Category B project and an IEE with EMP was prepared and approved in 2012. The EMP has become a condition of the loan.

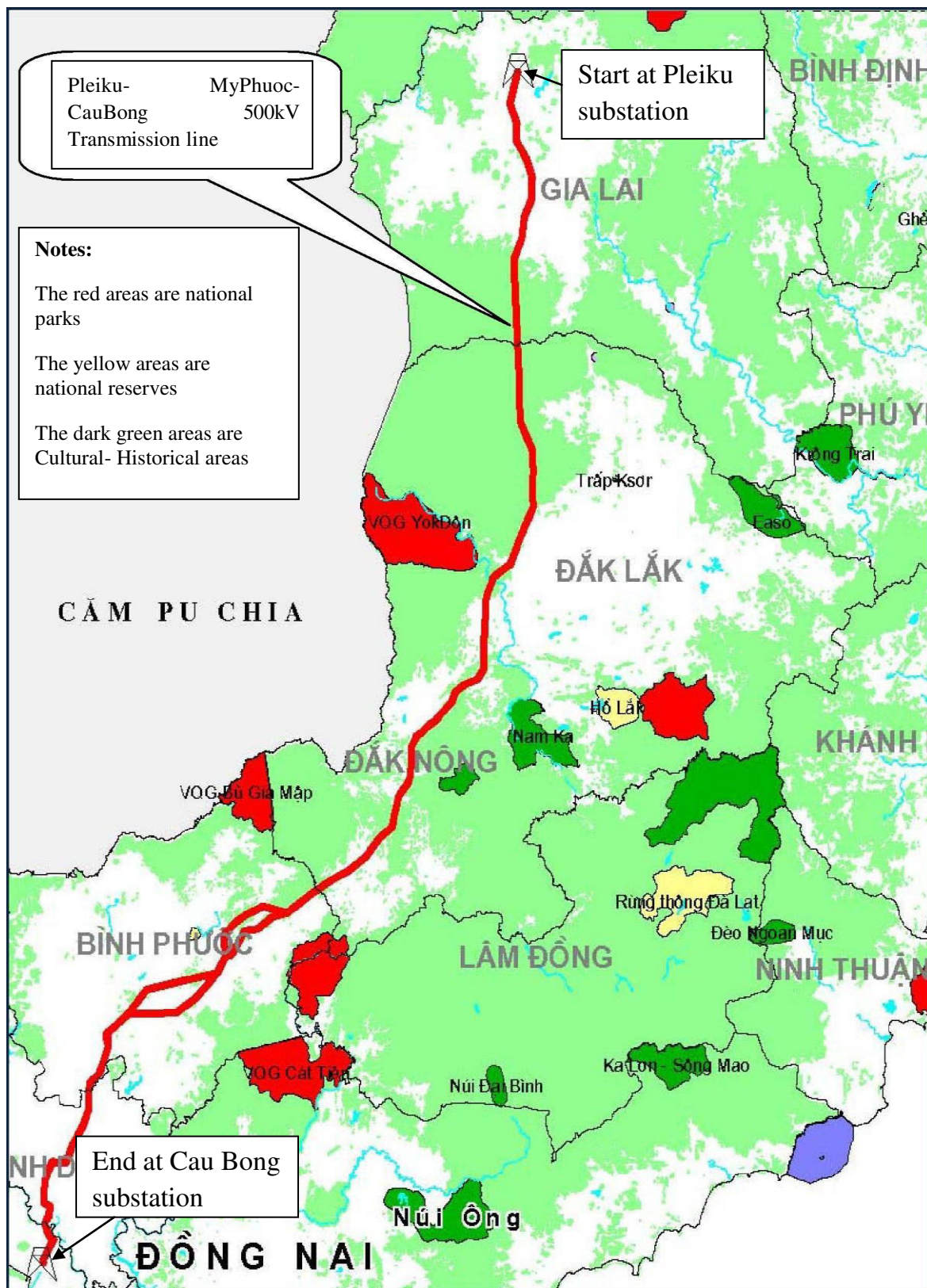


Figure 1: Location of 500kV Pleiku - My Phuoc - Cau Bong transmission line with regard to natural conservation areas

4. As defined in the approved IEE and EMP, the subproject management unit-Central Power Projects Management Board (CPMB), contractors and the construction monitoring and operating units (PTC3 & PTC4) are the key agencies who are responsible for implementing the mitigation measures proposed in the EMP. During the operation phase, PTC3 and PTC4 will be responsible for complying with the EMP requirements that are control of vegetation along the RoW and control of development within the RoW. The Environmental Officer (EO) of PTC3 and PTC4 will arrange to check compliance with the EMP requirements. Other issues such as work place safety when operating within high voltage areas will be addressed by PTC3 and PTC4's own safety operating procedures which they will apply.

5. Pursuant to the official letter of Asian Development Bank (ADB) dated 09 October 2015 regarding requirements of quarterly environmental monitoring reports until the project completion of Tranche 2 (dated 31/05/2016) - Loan2959 and adjustment of the scope of work of the national safeguard specialist on environment (called consultant) to meet the requirements of the loan agreement was signed on 21 December 2012, the consultant has been required to support the EVNNPT - CPMB in preparing quarterly environmental monitoring reports for the submission to the ADB until the project completion based on the loan agreement. The first quarter environmental monitoring report (EMR) 2015 and the second quarter EMR 2015 have been approved and disclosed on ADB website in December 2015.

2. RESULTS OF ENVIRONMENTAL MONITORING

2.1 Subproject Operation Status

6. Since receiving the TL from CPMB in May 05, 2014, both PTC3 and PTC4 have implemented the operation and management of the TL directly. They have arranged and maintained the operation and management teams (called the local Power Transmission Units) in charge of each TL segment to perform their tasks. PTC3 includes three (03) local units being Gia Lai Power Transmission, Dak Lak Power Transmission and Dak Nong Power Transmission. PTC4 includes two (02) local units such as the Eastern Power Transmission 2 (responsible for the section from Binh Phuoc to Binh Duong province) and Eastern Power

Transmission 1 (responsible for the section in Ho Chi Minh City). Each local unit regularly has three (03) main functional divisions responsible for safety of the TL operation which are technical division, environmental safeguard division and communication division. These divisions work independently but support each other in sharing information related to the TL. Therefore, the TL operation has been stable and safe.

2.2. Compliance with Environmental Management Plan

2.2.1. Monitoring Activities

7. During the fourth quarter of 2015, monitoring and compliance with the environmental management plan of CPMB, PTC3 and PTC4 and the relevant parties was built based on an organization structure. The organization structure for implementing the environmental monitoring task was closely established (Figure 2), the information on occupation and community health and safety and other environmental impacts was quickly reflected to PMU, concurrently the duties of parties including PMU, the national safeguard specialist on environment, management and operating units (PTC3 & PTC4), local authorities and communities have been determined clearly and closely.

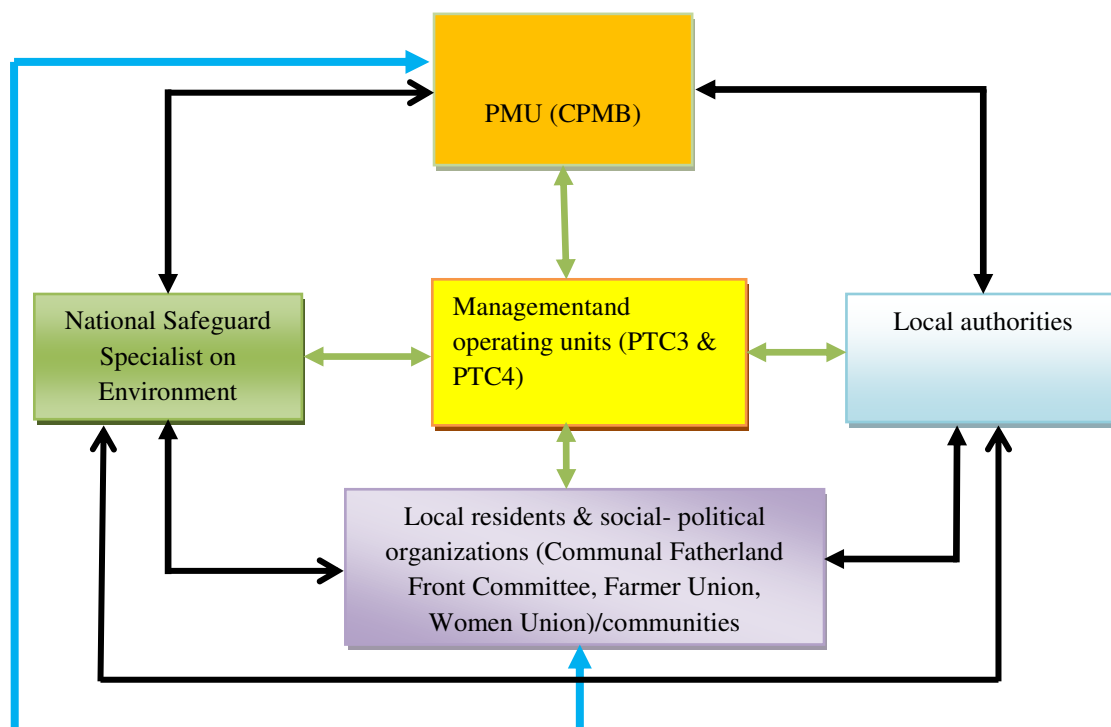


Figure 2: Organization structure of the environmental monitoring

8. The participatory approach was used in the environmental monitoring during the fourth quarter of 2015. Bases for the environmental monitoring are relevant legal documents in Vietnam, the Safeguard Policy Statement of ADB 2009 (SPS), and the approved IEE and EMP. The environmental monitoring was conducted with a combination of qualitative and quantitative methods. The data for the environmental monitoring included the secondary data from previous environmental monitoring and compliance reports of the subproject from CPMB, PTC3 and PTC4 and provincial reports & decisions and the primary data collected through observation and in-depth interviews.

2.2.2. Compliance with Environmental Management Plan Issues Raised in Previous Monitoring Period and its Effectiveness

9. In order to dismantle the houses and physical structures within the RoW which existed before the start of subproject implementation, the CPMB has closely worked with the DRCCs and CPCs to get information relating to structures existing within the RoW. From which, CPMB has directing and coordinating with the DRCCs and CPCs with the support of local social-political organizations (Communal Fatherland Front Committee, Farmer Union, Women Union) in order to totally dismantle structures within the RoW as required in the EMP. As a result, the number of structures within the RoW has reduced from 13 in the third quarter to 10 in the fourth quarter. At the present, all of 10 structures are temporary shelters/camps in Gia Lai, Dak Nong and Binh Duong province.

10. For the replacement afforestation, on 01 October 2015 CPMB transferred the required amount of money (VND 799.998.685) to the Dak Nong Forest Development and Protection Fund. However, the afforestation must depend on the provincial plantation scheme for several projects. The PPC/DARD will inform CPMB of location for replacement afforestation and assign afforestation units for tracking. Besides, CPMB has constantly urged the PPC in Dak Lak, Gia Lai and DakNong provinces to accelerate afforestation plans for implementation.

11. During the fourth quarter of 2015, CPMB has closely coordinated with PTC4 to install 35 sets of earthing for houses and structures along the TL. It totally achieved 100% of the earthing.

2.2.3. Compliance with Environmental Management Plan During Current Monitoring Period and its Effectiveness

12. During the fourth quarter of 2015, site observation along the Pleiku- My Phuoc- Cau Bong 500kV transmission line shows that the PTC3 and PTC4 have generally complied with the EMP and relatively well controlled the vegetation along the RoW and control of development within the RoW. In addition, the coordination of the local Power Transmission Units of PTC3 & PTC4, the representatives of CPCs, the communities, CPMB and the relevant departments is well done on implementation of the environment safety measures.

13. In fact, safe operating procedures have been established and strictly complied by PTC3 and PTC4. They have arranged the operation and management teams (called the local Power Transmission Units) in charge of each TL segment to perform their tasks. Most of the mitigation measures proposed in the IEE with EMP have been applied. Thus none of accidents, risks, emergencies on fire, lightning or electrocution are found within the period. The local Power Transmission Units of PTC3 and PTC4 have implemented control of vegetation along the RoW and control of development within the RoW and monitored electric and magnetic fields.

a) Control of vegetation along the RoW

14. Workers of the local Power Transmission Units of PTC3 and PTC4 monthly trim vegetation within and along the RoW to meet the necessary conductor safety clearances. Machetes, hammers, saws have been used to trim plants. They did not use herbicides and pesticides to control vegetation growth as required in the EMP.

15. No invasive species including *Mimosa pigra* has been discovered along the RoW so far.

b) Control of development within the RoW

16. CPMB has coordinated with PTC3, PTC4 and related communal governments & social- political organizations (Communal Fatherland Front Committee, Farmer Union, Women Union) to urge and facilitate the local people to dismantle the built works completely. PTC3 and PTC4 have arranged the operation and management teams (called the local Power Transmission Units) in charge of each TL segment to perform their tasks for controlling the development within the RoW. Staff and workers of the Units regularly check all items of the TL along the RoW, monthly implementing direct observation,

going through densely populated areas to directly consult the local people about potential risks to people and the TL to get solutions timely. PTC3 and PTC4 have checked the earthing of the buildings near the RoW for additional earthing. PTC3 and PTC4 continually implemented a propaganda program for electrical safety based on the Circular No.03/2010/TT-BCT and the Decree No. 14/2014/NĐ-CP. The interviewed people said that the units continually combined a diversity of communicative tools for the propaganda such as communal speaker, leaflet, banners and meetings. As a result, all new buildings have been earthed with the technical support by PTC3 & PTC4.

c) Monitoring on Electric and Magnetic Fields (EMF)

17. Based on the GOV's environmental policy, EMF is required to monitor two times per year so during this monitoring period, EMF was monitored at sensitive places by both PTC3 and PTC4. The monitoring on EMF showed that: (i) Electric field levels in December 2015 are generally lower than in the previous period (June 2015); (ii) Electric field in some areas in Gia Lai, Binh Phuoc and Binh Duong province still excess the permissible limit (5kV/m); (iii) Electric field levels measured in Dak Lak, Dak Nong and Ho Chi Minh City are lower than the permissible limit; (iv) Electric field in some residential areas was also measured in Binh Phuoc province in which there were many houses concentrated near the TL and the recorded electric field levels in houses are varied from 0.00195 to 0.08kV/m, the ones at outdoors from 0.0023 to 2.6kV/m (Please see Annex 1, 2, 3 & 4).

2.2.4. Recommendation for Actions

18. Recommended actions for CPMB:

(i) CPMB will continually work with the DRCCs and CPCs with the support of local social- political organizations (Communal Fatherland Front Committee, Farmer Union, Women Union) in order to totally dismantle 10 structures within the RoW as required in the EMP;

(ii) CPMB will constantly urge the PPCs to accelerate afforestation plans for implementation to complete the responsibility.

19. Recommended actions for both PTC3 and PTC4: Both units will maintain safe operating procedures, activities for control of vegetation along the RoW, control of development within the RoW as previous periods for compliance

with SPS and irregular inspection of EMF when receiving any complaints of electric and magnetic fields from residents along the RoW.

3. CONCLUSION AND RECOMMENDATIONS

3.1. Summary of Monitoring Results

20. In general, the environmental issues raised in the previous monitoring period have been paid attention to and resolved step by step and the EMP during the current monitoring period is strictly complied by relevant parties: (i) CPMB have closely coordinated with PTC4 to complete 100% of the earthing; (ii) CPMB worked with the DRCCs and CPCs with the support of local social - political organizations to dismantle 03 structures within ROW of which 01 structure was determined as a house; (iii) CPMB has transferred the amount of money (VND 799.998.685) to the Dak Nong Forest Development and Protection Fund and constantly urged the PPC in DakLak, Gia Lai and Dak Nong province to accelerate afforestation plans for implementation; (iv) PTC3 and PTC4 have seriously taken safe operating procedures, well controlled vegetation along the RoW and development within the RoW, periodically monitored EMF and implemented a variety of communication activities on electrical safety. As results, none of accidents, risks or emergencies on fire, lightning and electrocution happened, all new buildings have been earthed and local people committed to compliance with the Decree No.14/2014/NĐ-CP.

3.2. Summary of Recommended Actions

21. Through the inspection and monitoring have been done by the consultant, it showed that the implementation of the environmental mitigation measures of the subproject has achieved significant results but not yet completed. Up to the present, the required payment for replacement afforestation has been transferred the provincial Forest Development and Protection Funds in Dak Lak, Gia Lai and Dak Nong province but the afforestation has not been implemented yet because it depends on afforestation schemes of each province for several projects; there are still 10 physical structures within RoW. These issues should be continually resolved in the next period. To ensure full compliance with the ADB's environmental policy specified in the EMP, CPMB and the Operation and Management Units (PTC3& PTC4) should have close coordination with local authorities to complete their responsibilities.

Annex1: Electric field strength levels in Gia Lai province in January 2016 (PTC3)

Nr.	In between the Picket No.	Electric field (kV/m)	Temperature (°C)	measuring time
1	10-11	4.5	27.5	5/01/2016
2	45-46	6.5	26,5	5/01/2016
3	70-71	4.6	27.0	5/01/2016
4	96-97	4.7	28.0	5/01/2016
5	103-104	5.7	27.7	5/01/2016

Annex 2: Electric field strength levels below the TL in some places in Binh Phuoc province December 2015 (PTC4)

Nr.	In between the Picket No.	Note	Electric field (kV/m)
1	6006-6006 (660-661)	Crossing road	6.2
2	6206-6207 (693-694)	Crossing provincial road No.741	8.2
3	6213-6214 (700-701)	Crossing provincial road No.741	6.27
4	6302-6303 (707-708)		9.09
5	6403-6404 (721-722)		5.56

Annex 3: Electric field levels in house and outdoors at 21 houses along the RoW in Binh Phuoc province in December, 2015 (PTC4)

Nr.	In between the Picket No.	Household Owner	Electric field (kV/m)	
			In House	Outdoors
I. Bu Dang district				
1	5112 - 5113	Huỳnh Văn Tấn	0.044	0.074
2	5117 - 5118	Văng Chủ	0.06	4.9
3	5118 - 5201	Thái Hữu Châu	0.042	1.25
4		Phạm Thế Minh	0.036	1.15
5	5409 - 5501	Văng Chủ	0.056	2.6
6	5404 - 5405	Ngô Thị Hiện	0.042	0.084
7	5405 - 5406	Nhữ Đăng Quân	0.64	1.34
8	5401 - 5402	Văng Chủ	0.0036	0.086
10	5702 - 5703	Phạm Bá Thông	0.034	1.032
II. Dong Phu district				
1	6009-6010(664-665)	Bùi Văn Việt	0.0034	0.0183
2	6110-6111(683-684)	Trần Thị Oanh	0.00195	0.0023
III. Chon Thanh district				
1	737 - 738	Phạm Văn Thỏa	0.074	0.85
2	742 - 743	Lê Thị Mười	0.08	0.87
3	742 - 743	Phạm Đình Điều	0.066	0.81
4	742 - 743	Hồ Sỹ Tường	0.071	0.77
5	742 - 743	Vũ Mạnh Tuyên	0.077	0.87
6	743 - 744	Phạm Thị Thúy Hà	0.08	1.01
7	743 - 744	Phí Xuân Trượt	0.069	0.88
8	743 - 744	Phạm Đình Tuân	0.067	0.74
9	745 - 746	Nhà vắng chủ	0.087	1.14

Annex 4: Electric field at some points in Binh Duong province in December 2015 (PTC4)

TRUYỀN TẢI ĐIỆN MIỀN ĐÔNG 2
ĐỘI TĐ THỦ DẦU MỘT

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM

Độc lập - Tự do - Hạnh phúc

Thủ Dầu Một, ngày 29 tháng 12 năm 2015

KẾT QUẢ ĐO CƯỜNG ĐỘ ĐIỆN TRƯỜNG ĐƯỜNG DÂY 500KV PLEIKU - MỸ PHƯỚC - CẦU BÔNG

- Thời gian đo: Từ 9h10' đến 15h00', ngày 24 tháng 12 năm 2015.

- Máy đo: Hiệu HOLADAY Hi 3604 - Hi 3616

- Vị trí đo cách mặt đất: 1m.

- Thời tiết: Nắng ráo.

Kết quả đo như sau:

Stt	Khoảng trụ	Giá trị cường độ điện trường (kV/m)		Địa phương	Ghi chú
		Trong hành lang	Ngoài hành lang		
01	7012-7101	5.1	2.7	X. Lai Uyên - H. Bàu Bàng	Vượt đường bộ
02	7111-71A01	4.8	2.4	X. Tân Hưng - H. Bàu Bàng	Vượt đường bộ
03	71A04-71A05	4.5	2.3	X. Tân Hưng - H. Bàu Bàng	Vượt đường bộ
04	71A09-71A10	4.9	2.7	X. Lai Hưng - H. Bàu Bàng	Vượt đường bộ
05	7203-7204	5.2	2.5	X. Lai Hưng - H. Bàu Bàng	Vượt đường bộ
06	7207-7208	4.7	2.3	X. Lai Hưng - H. Bàu Bàng	Vượt đường bộ
07	7302-7303	4.8	2.6	X. Lai Hưng - H. Bàu Bàng	Vượt đường bộ
08	7310-7401	4.3	2.2	X. Long Nguyên - H. Bàu Bàng	Vượt đường bộ
09	7501-7502	5.1	2.9	P. An Điền - H. Bến Cát	Vượt đường bộ
10	7502-7601	4.9	2.7	P. An Điền - H. Bến Cát	Vượt đường bộ
11	7702-7703	5.3	2.8	P. An Điền - H. Bến Cát	Vượt đường bộ
12	7804-7805	5.1	2.6	P. An Điền - H. Bến Cát	Vượt đường bộ
13	7805-7901	4.8	2.6	P. An Điền - H. Bến Cát	Vượt đường bộ
14	7905-7906	5.5	2.9	P. An Điền - H. Bến Cát	Vượt đường bộ
15	7907-8001	5.2	2.7	P. Phú An - H. Bến Cát	Vượt đường bộ