

**Kingdom of Cambodia
Electricité du Cambodge**

**THE PREPARATORY SURVEY
FOR
THE PROJECT FOR
EXPANSION OF DISTRIBUTION LINES IN
SOUTHERN ECONOMIC CORRIDOR**

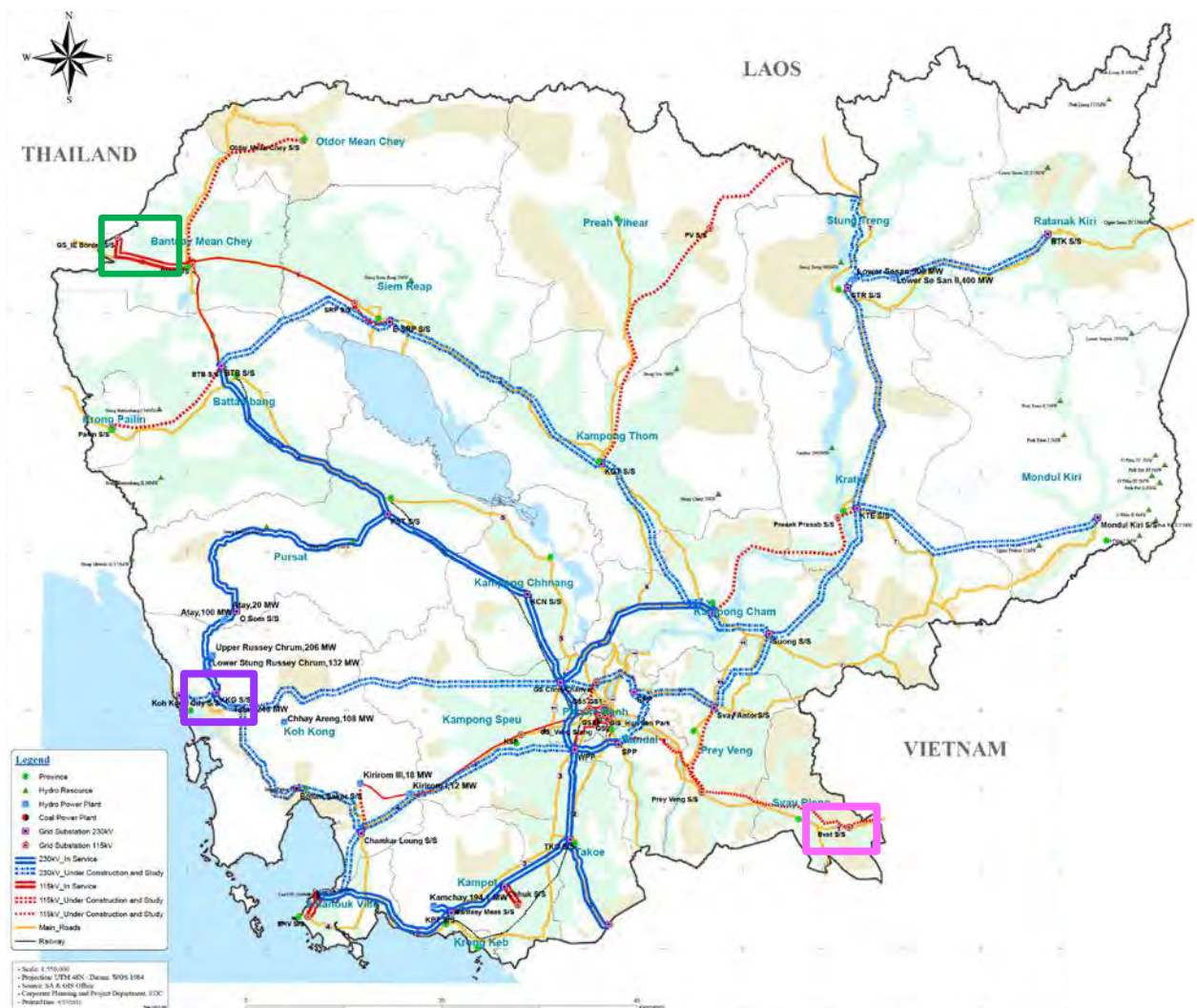
FINAL REPORT

October 2016

Japan International Cooperation Agency

**NEWJEC Inc.
The Chugoku Electric Power Co., Inc.**

IL
JR
16-080



- Bavet town of Svay Rieng Province
- Poipet town of Banteay Meanchey Province
- Koh Kong town of Koh Kong Province

Location Map of Project Sites in Kingdom of Cambodia

The Preparatory Survey for the Project for Expansion of Distribution Lines in Southern Economic Corridor

FINAL REPORT

Table of Contents

Chapter 1 Background of the Project

1.1	Background of the Project.....	1 - 1
1.2	Natural Conditions	1 - 2
1.3	Environmental and Social Considerations	1 - 4
1.3.1	Environmental Impact Assessment	1 - 4
1.3.1.1	Results of Environmental and Social Consideration Survey	1 - 4
1.3.1.2	Environmental Impact Assessment.....	1 - 5
1.3.1.3	Mitigation Measures and Their Cost	1 - 7
1.3.1.4	Environmental Management and Monitoring Plan.....	1 - 8
1.3.1.5	Stakeholder Consultation.....	1 - 9
1.3.2	Land Acquisition/Resettlement	1 - 13
1.3.2.1	Necessity of Land Acquisition and Resettlement	1 - 13
1.3.2.2	Comparison between JICA Guideline and Cambodian System.....	1 - 13
1.3.2.3	Scope of Land Acquisition and Resettlement.....	1 - 17
1.3.2.4	Compensation and Support Measures.....	1 - 17
1.3.2.5	Grievance Redress Mechanism.....	1 - 17
1.3.2.6	Implementation System	1 - 18
1.3.2.7	Implementation Schedule	1 - 18
1.3.2.8	Cost and Finances.....	1 - 18
1.3.2.9	Monitoring System	1 - 19
1.3.2.10	Public Consultation Meeting	1 - 19

Chapter 2 Contents of the Project

2.1	Basic Concept of the Project.....	2 - 1
2.1.1	Overall Goal and Project Objectives	2 - 1
2.1.2	Outline of the Project	2 - 1
2.2	Outline Design of the Japanese Assistance	2 - 3
2.2.1	Design Policy	2 - 3
2.2.2	Basic Plan (Construction Plan / Equipment Plan).....	2 - 5
2.2.3	Outline Design Drawing.....	2 - 13
2.2.4	Implementation Plan.....	2 - 14
2.2.4.1	Implementation Policy.....	2 - 14
2.2.4.2	Implementation Conditions	2 - 15
2.2.4.3	Scope of Works	2 - 15
2.2.4.4	Consultant Supervision.....	2 - 16
2.2.4.5	Quality Control Plan.....	2 - 18
2.2.4.6	Procurement Plan.....	2 - 19
2.2.4.7	Operational Guidance Plan.....	2 - 20

2.2.5	Implementation Schedule	2 - 21
2.3	Obligations of Recipient Country.....	2 - 22
2.4	Project Operation Plan	2 - 24
2.4.1	Basic Policy	2 - 24
2.4.2	Management Organization	2 - 24
2.5	Project Cost Estimation.....	2 - 25
2.5.1	Initial Cost Estimation.....	2 - 25
2.5.2	Operation and Maintenance Cost	2 - 25

Chapter 3 Project Evaluation

3.1	Preconditions.....	3 - 1
3.2	Necessary Inputs by Recipient Country	3 - 1
3.3	Important Assumptions	3 - 1
3.4	Project Evaluation	3 - 2
3.4.1	Relevance	3 - 2
3.4.2	Effectiveness.....	3 - 2

Appendices

Appendix 1 :	Member List of the Study Team
Appendix 2 :	Schedule of the Study
Appendix 3 :	List of Parties concerned in the Recipient Country
Appendix 4 :	Minutes of Discussions
Appendix 5 :	Environmental Check List
Appendix 6 :	Monitoring Form
Appendix 7 :	Minutes and Attendance Lists of Stakeholder Meetings
Appendix 8 :	Voltage Drop Study Details of Each Distribution Line
Appendix 9 :	List of Collected Data and Documents
Appendix 10 :	Route Map of Bavet
Appendix 11 :	Route Map of Poipet (1)
Appendix 12 :	Route Map of Poipet (2)
Appendix 13 :	Route Map of Koh Kong
Appendix 14 :	Chrak Mtes Substation
Appendix 15 :	EDC Svay Rieng Switching Station
Appendix 16 :	IE Substation
Appendix 17 :	Banteay Meanchey Substation
Appendix 18 :	MV Pole Arrangement

List of Figures

Figure 1.2-1	Temperature and Rainfall of Three Project Sites	1 - 2
Figure 1.2-2	Mapping of Flash Density caused by the Lightning	1 - 3
Figure 2.2-1	Project Implementation System	2 - 17

List of Tables

Table 1.1-1	Main Component of the Project requested by the RGC.....	1 - 2
Table 1.3-1	Result of Survey.....	1 - 4
Table 1.3-2	Environmental Impact Assessment.....	1 - 5
Table 1.3-3	Mitigation Measures	1 - 7
Table 1.3-4	Cost of Mitigation Measures.....	1 - 8
Table 1.3-5	Environmental Management and Monitoring Responsibilities	1 - 8
Table 1.3-6	Monitoring Plan	1 - 9
Table 1.3-7	Date of Stakeholder Meetings and Interview Survey	1 - 10
Table 1.3-8	Gap between JICA Guideline and Cambodian System.....	1 - 13
Table 1.3-9	Entitlement Matrix.....	1 - 17
Table 1.3-10	Compensation Schedule.....	1 - 18
Table 1.3-11	Compensation Rate.....	1 - 18
Table 2.2-1	Procurement of Major Equipment	2 - 4
Table 2.2-2	Bavet Area Demand Forecast (in 2021).....	2 - 6
Table 2.2-3	Poipet Area Demand Forecast (in 2021).....	2 - 6
Table 2.2-4	Koh Kong Area Demand Forecast (in 2021)	2 - 6
Table 2.2-5	Voltage Analysis Result (Bavet)	2 - 7
Table 2.2-6	Voltage Analysis Result (Poipet)	2 - 7
Table 2.2-7	Voltage Analysis Result (Koh Kong).....	2 - 8
Table 2.2-8	System Voltage.....	2 - 8
Table 2.2-9	Design Conditions of the Distribution	2 - 9
Table 2.2-10	MV Electrical Design Parameter	2 - 9
Table 2.2-11	LV Electrical Design Parameter.....	2 - 9
Table 2.2-12	Grounding System	2 - 10
Table 2.2-13	Minimum Clearance	2 - 10
Table 2.2-14	Voltage Variation.....	2 - 10
Table 2.2-15	Study on Overhead Line Support.....	2 - 11
Table 2.2-16	Watt-hour Meter.....	2 - 12
Table 2.2-17	Facilities to be provided under the Project	2 - 13
Table 2.2-18	Scope of Work between Japan and Cambodia	2 - 16
Table 2.2-19	Engineers Dispatched by Equipment Supplier.....	2 - 18
Table 2.2-20	Training Program on O&M Work.....	2 - 20
Table 2.2-21	Implementation Schedule.....	2 - 21

Table 3.4-1	Quantitative Effect	3 - 2
Table 3.4-2	Power Quality of SEZs from Interviews (1)	3 - 3
Table 3.4-3	Power Quality of SEZs from Interviews (2)	3 - 4
Table 3.4-4	Expected Effects for the Power Quality of SEZs by the Project.....	3 - 4

List of Photos

Photo 3.4-1	Primary School in Bavet	3 - 5
Photo 3.4-2	Hospital in Bavet.....	3 - 5

Abbreviations

Symbol	English
B/A	Banking Arrangement
C/P	Counterpart
CPTL	Cambodia Power Transmission Line Co.,
DAC	Development Assistance Committee
DAFF	Department of Agriculture Forestry and Fisheries
DCC	Design and Construct Contractor
DLMUPC	Department of Land Management, Urban Planning and Construction
DOE	Department of Environment
DPWT	Department of Public Works and Transport
EDC	Electricité du Cambodge
EIA	Environmental Impact Assessment
E/N	Exchange of Notes
GDP	Gross Domestic Product
GOJ	Government of Japan
GREPTS	General Requirements of Electric Power Technical Standards
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
JICA	Japan International Cooperation Agency
LBS	Load Breaking Switch
LV	Low Voltage
MAFF	Ministry of Agriculture Forestry and Fisheries
MME	Ministry of Mines and Energy
MCCB	Molded Case Circuit Breaker
MOWRAM	Ministry of Water Resources and Meteorology Department of Meteorology
MV	Medium Voltage
NGO	Non-Government Organization
OH	Overhead Line
O&M	Operation and Maintenance
PAP	Project Affected People
PIC	Partial Insulated Conductor
PIC	Project Implementation Consultant
PVC	Poly Vinyl Chloride
REE	Rural Electricity Enterprise
RGC	Royal Government of Cambodia
ROW	Right of Way
SEZ	Special Economic Zone
SREPTS	Specific Requirements of Electric Power Technical Standards of the Kingdom of Cambodia
S/S	Substation
SW/S	Switching station
UG	Underground Cable
UTS	Ultimate tensile strength
WB	World Bank
XLPE	Cross-linked Polyethylene

CHAPTER 1

BACKGROUND OF THE PROJECT

CHAPTER 1 BACKGROUND OF THE PROJECT

1.1 BACKGROUND OF THE PROJECT

Recently, the economy of Cambodia shows steady growth. In 2014, Gross Domestic Product (GDP) growth rate of 7.0% has been achieved, and the economy in Cambodia is expected to be soaring in the future. Along with the economic growth, the power demand is rapidly increasing, and the power generation and import during a period from 2003 to 2013 have been increasing at the average annual rate of 19.2%. Therefore, the expansion of facilities in the power sector is a pressing issue. Such being the situation, the “Power Development” is the important policy included in the “Infrastructure Development” which is one of the four pillars in the “Rectangular Strategy-Phase III” of the Royal Government of Cambodia (RGC).

Phnom Penh the capital city consumes almost 70% of the whole domestic power demand. And the household electrification rate is high with 95%. Moreover, corresponding to the growing power demand, the investment is diversified into the power facilities.

On the other hand, the household electrification rate in rural area stays only at 36%, and this rural electrification rate is rather low compared to the neighboring countries.

In each province of Svay Rieng, Banteay Meanchey and Koh Kong located along the southern economic corridor of the Mekong Region situated in the southern part of Indochina, the ratio of villages where the electric power is supplied from the national grid is low, i.e. at the rate of 19%, 66% and 38%, respectively. The lack of access to the electricity is one of the obstruction factors of an economic activity and a social service improvement of the local communities.

Industry of the border trade is actively run, because these area are easily accessible from the neighboring countries. Special Economic Zones (SEZs) are actively developed where the power supply depends on import from neighboring countries. However, in addition to the restriction on the power supply from neighboring countries, frequently occurred blackout and high power tariff by the captive power generation are one of the factors inhibit economic development in the country.

Under these situations, the RGC gives the rural electrification the status as one of the most prioritized policies in the "National Strategic Development Plan (2014-2018), and is implementing the expansion of power transmission and distribution systems in aforementioned three provinces by the government’s own capital or the financial support of other nation’s donors. However, the development of distribution lines to supply power from the existing/planned distribution network to SEZ is delayed.

Considering these situations, RGC officially requested the Government of Japan (GOJ) for the Grant Aid to improve the power supply, i.e. “IMPROVEMENT OF THE STABILITY OF POWER SUPPLY ALONG SOUTHERN ECONOMIC CORRIDOR PROJECT (the Project). In response to the request from the RGC, the Japan International Cooperation Agency (JICA), decided to conduct a Preparatory Survey (the Survey).

Table 1.1-1 Main Component of the Project requested by the RGC

Location	Required component	
Bavet town of Svay Rieng province	Underground Cable XLPE*, 3 × 300 mm ²	1.9 cct-km
	Underground Cable XLPE, 3 × 300 mm ² 5 Circuit	0.3 cct-km
	Overhead Line 240 mm ² Double Circuit	8.6 cct-km
	Overhead Line 240 mm ² Single Circuit	26.4 cct-km
	Distribution Transformer from 100kVA to 400 kVA	26 units
	Load Breaking Switch	9 units
Poipet town of Banteay Meanchey province	Underground Cable XLPE, 3x300 mm ²	0.9 cct-km
	Underground Cable XLPE, 3x240 mm ²	0.4 cct-km
	Overhead Line 240 mm ² Single Circuit	31.3 cct-km
	Overhead Line 150 mm ² Single Circuit	6.8 cct-km
	Load Breaking Switch	6 units
Koh Kong town of Koh Kong province	Underground Cable XLPE, 3x300mm ²	1.8 cct-km
	Overhead Line 240 mm ² Single Circuit	12.8 cct-km
	Load Breaking Switch	5 units

*XLPE stands for Cross-linked Polyethylene.

1.2 NATURAL CONDITIONS

(1) Temperature and Rainfall

Cambodia’s climate is dominated by the tropical monsoon and the savanna, which are known as rainy and dry season because of the distinctly marked seasonal differences. The southwest monsoon brings the rainy season from May to October, and the northeast monsoon flow of drier air lasts from November to March.

The characteristics of temperature are almost same among the project sites. The average minimum and maximum temperature within last three years are about 20°C and 35°C, respectively.

Svay Rieng and Banteay Meanchey belong to the savanna climate. The characteristic of rainfall is similar to each other. But it may be easy to form the damp area in Svay Rieng in rainy season, because it lies on alluvial bed of the Mekong basin and has the flat topography.

Koh Kong belongs to the tropical monsoon climate. The annual rainfall of Koh Kong exceeds three times of Svay Rieng or Banteay Meanchey.

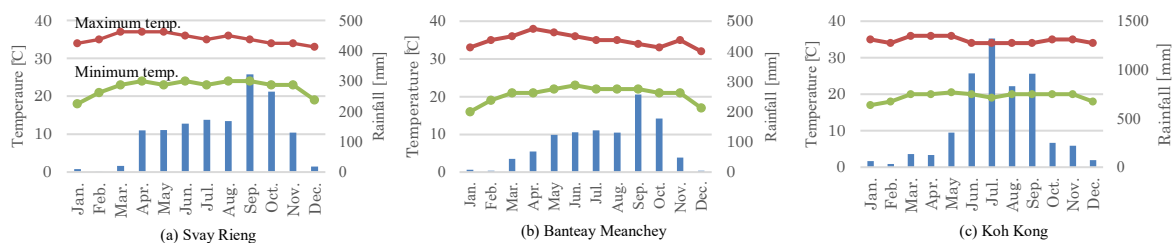


Figure 1.2-1 Temperature and Rainfall of Three Project Sites

Source: Ministry of Water Resources and Meteorology

(2) Typhoon

Typhoons, tropical cyclones, those often devastate coastal Vietnam rarely cause damage in Cambodia.

Ketsana Typhoon attacked northeast of Cambodia and gave the economic damage of 132 million US\$ scale in 2009.

Source: Cambodia Disaster Loss and Damage Analysis Report (1996-2013)
Source: Asian Disaster Reduction Center

(3) Humidity

The relative humidity is high at night throughout the year, usually exceeding 90%. During the daytime in the dry season, humidity averages about from 50% to 60%.

Source: Statistical Yearbook of Cambodia (2011)

(4) Lightning

The lightning strikes occur every year, especially in rainy season. Many people and houses encounter the damages of them. It is important to protect outside workers from the disasters during the construction period.

Figure 1.2-2 shows a mapping of flash density caused by the lightning. In Koh Kong, the high flash density area of over 50 counts/km²/year has been observed.

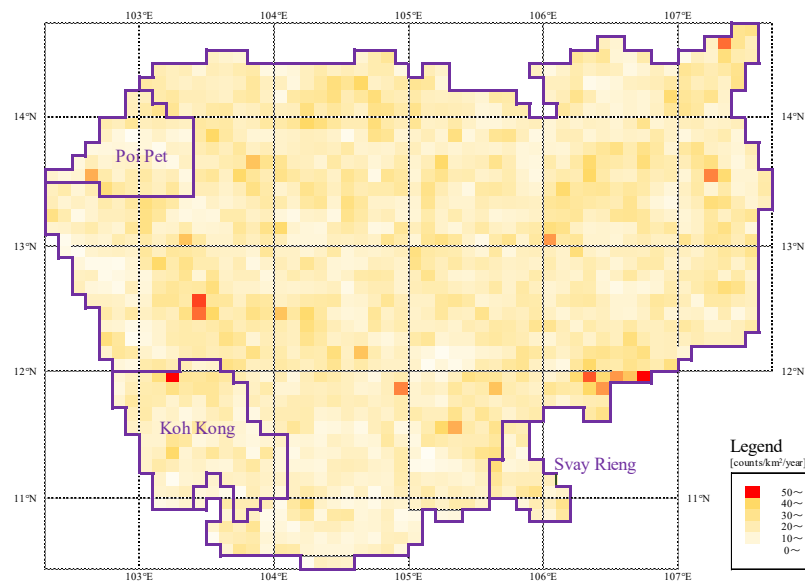


Figure 1.2-2 Mapping of Flash Density caused by the Lightning

Source: The Cambodian Daily
Source: The NASA Global Hydrology Resource Center.


1.3 ENVIRONMENTAL AND SOCIAL CONSIDERATIONS

1.3.1 Environmental Impact Assessment

1.3.1.1 Results of Environmental and Social Consideration Survey

The outline of result of the environmental and social consideration survey conducted according to the scoping is shown in Table 1.3-1.

Table 1.3-1 Result of Survey

Items	Survey result
Protected Area	<ul style="list-style-type: none"> ➤ The interview was conducted to Ministry of Agriculture, Forestry and Fisheries (MAFF) and Department of Agriculture, Forestry and Fisheries (DAFF) of Koh Kong which control protected forests; ➤ Main opinion <ul style="list-style-type: none"> - A part of the planned route is adjacent to the Southern Elephant Corridor Protected Forest. But there is no particular problem as long as the construction within ROW of road. <div style="text-align: center;">  <p style="text-align: right; font-size: small;">Source: JICA Study Team</p> </div> <p style="text-align: center;">Location of Southern Elephant Corridor Protected Forest</p>
Ecosystem	<ul style="list-style-type: none"> ➤ The interview was conducted to DAFF of Koh Kong and the trekking tour guide around the Southern Elephant Corridor Protected Forest and Cardamon Mountain; ➤ Main opinion <ul style="list-style-type: none"> - There is no sightings of elephant in the past several years.
Land acquisition/ resettlement	<ul style="list-style-type: none"> ➤ There are two markets, Chipu and Prasaut, along Route 1 which is the planned route. Some shops and houses encroach ROW. However the relocation of them is not required due to construction of poles in the space among buildings (Bavet). ➤ There are two markets of Seika Khmaer and Koun Trei village with few shops along Route 58 which is the planned route. Some shops and houses are scattered in ROW. However, construction of poles is planned to avoid them (Poipet). ➤ There are public offices along Route 48 which is the planned route. Some shops and houses are scattered in ROW. However, construction of poles is planned to avoid them (Koh Kong).
Existing Social Infrastructure and Social Service (including Traffic)	<ul style="list-style-type: none"> ➤ In Cambodia, the land traffic law (2006) defines ensuring safe and orderly traffic, protection of life, mitigation for the impact on human health and for odor. On the other hand, installation of traffic sign under construction is not defined.

Items	Survey result
Local Economy (Employment and Livelihood, etc.)	<ul style="list-style-type: none"> ➤ It is necessary to pay attention so as not to interfere commerce at market area (Bavet). ➤ There are commercial trees, coconut and mango, which are planted in ROW of the road. However location of poles is planned to decide so as to avoid cutting them at the detailed design stage. ➤ There are farm lands in ROW of the road. However poles is planned to be constructed so as to avoid them.
Working Condition (including working safety)	<ul style="list-style-type: none"> ➤ In Cambodia, the labor law (2002) defines the obligation to prepare the working provision and to ensure the safety of workers if the company has more than 8 workers.
Accident	<ul style="list-style-type: none"> ➤ In Cambodia, the land traffic law (2006) defines ensuring safe and orderly traffic, protection of life, mitigation for the impact on human health and for odor. On the other hand, installation of traffic sign under construction is not defined.
Stakeholder Consultation (SHM)	<ul style="list-style-type: none"> ➤ The 1st stakeholder meetings were held on 12th of December, 2015 in Bavet, 18th of December, 2015 in Poipet, and 24th of December, 2015 in Koh Kong, the 2nd stakeholder meetings were held on 25th of May, 2016 in Bavet, 27th of May, 2016 in Poipet, and 30th of May, 2016 in Koh Kong by Electricité du Cambodge. ➤ Main opinion <ul style="list-style-type: none"> - Concern for impacts on the market area - Concern for cutting trees during construction - Requirement for information sharing before construction with local authorities

Source: JICA Study Team

1.3.1.2 Environmental Impact Assessment

The impact by the project was assessed based on the result of the environmental and social consideration survey (Table 1.3-2). Environmental checklist is attached in Appendix 5.

Table 1.3-2 Environmental Impact Assessment

	No.	Impact Item	Scoping		Evaluation		Evaluation Reason
			Construction	Operation	Construction	Operation	
Pollution Control	1	Air Pollution	C-	D	C-	N/A	Under Construction: The emission may be discharged from construction machines and vehicles. But there is little impact on air quality, because construction is small and temporary.
	2	Water Quality	D	D	N/A	N/A	
	3	Wastes	D	D	N/A	N/A	
	4	Soil	D	D	N/A	N/A	
	5	Noise/Vibration	C-	D	C-	N/A	Under Construction: The noise and vibration may arise from construction machines and vehicles. But there is little impact on noise and vibration, because construction is small and temporary. However, the construction work will be conducted with consideration in dense residential area.
	6	Ground Subsidence	D	D	N/A	N/A	
	7	Odor	D	D	N/A	N/A	
	8	Bottom Sediment	D	D	N/A	N/A	
Natural Environment	9	Protected Area	C-	D	C-	N/A	Under Construction: A part of the planned route in Koh Kong is adjacent to Southern Elephant Corridor Protected Forest. But there is little impact on the protected forest, because the distribution line is constructed in ROW of Route 48 and no deforestation.
	10	Ecosystem	C-	D	C-	N/A	Under Construction: A part of the planned route in Koh Kong is adjacent to Southern Elephant Corridor Protected Forest. But there is little impact on ecosystem, because the distribution line is constructed in ROW of Route 48 and no deforestation.
	11	Hydrology	D	D	N/A	N/A	
	12	Topography / Geography	D	D	N/A	N/A	

	No.	Impact Item	Scoping		Evaluation		Evaluation Reason
			Construction	Operation	Construction	Operation	
Social Environment	13	Land Acquisition / Resettlement	C-	D	D	N/A	Under Planning: Land acquisition and resettlement are not required, because poles are planned to be constructed so as to avoid buildings in ROW of the road.
	14	Poverty Group	D	D	N/A	N/A	
	15	Ethnic Minority / Indigenous People	D	D	N/A	N/A	
	16	Local Economy (Employment and Livelihood, etc.)	C-	B+	C-	N/A	Under Construction: There are commercial trees such as coconut and mango, and farm land in ROW of the road. But there is little impact on livelihood because the possibility of cutting trees is very low. In Bavet, the planned route is adjacent to markets, there is the possibility to interfere with commerce.
Social Environment	17	Land Use / Use of Regional Resource	D	D	N/A	N/A	
	18	Water Use	D	D	N/A	N/A	
	19	Existing Social Infrastructure, Social Service (including Traffic)	C-	B+	C-	N/A	Under Construction: Transporter vehicles may temporarily interfere the passage of general vehicles.
	20	Social Capital / Local Social Organization of Decision-making	D	D	N/A	N/A	
	21	Uneven distribution of benefits and damage	D	D	N/A	N/A	
	22	Conflict of Interest in the Region	D	D	N/A	N/A	
	23	Cultural Heritage	D	D	N/A	N/A	
	24	Landscape	D	D	N/A	N/A	
	25	Gender	D	D	N/A	N/A	
	26	Children's Rights	D	D	N/A	N/A	
	27	Infections (HIV/AIDS, etc.)	D	D	N/A	N/A	
	28	Working Condition	B-	D	B-	N/A	Under Construction: It is necessary to consider working condition of construction workers.
Others	29	Accidents	B-	D	B-	N/A	Under Construction: It is necessary to consider accidents and traffic accidents.
	30	Impact across the Border, Climate Change	D	D	N/A	N/A	

A+/-: Significant positive/negative impact is expected.

B+/-: Positive/negative impact is expected to some extent.

C+/-: Extent of positive/negative impact is unknown. (A further examination is needed, and the impact could be clarified as the study progresses)

D: No impact is expected.

Source: JICA Study Team

1.3.1.3 Mitigation Measures and Their Cost

(1) Mitigation Measures

The mitigation measures were examined about the negative impact items assumed in the impact assessment.

Table 1.3-3 Mitigation Measures

No.	Items	Mitigation measure	Implementation organization	Responsible organization
1	Air pollution	<ul style="list-style-type: none"> ➤Preparation and compliance of safety and health management plan <ul style="list-style-type: none"> - Use of low emission machines and vehicles - Water sprinkling for dust ➤Explanation of the work schedule to local people 	DCC EDC	EDC
5	Noise/ vibration	<ul style="list-style-type: none"> ➤Preparation and compliance of safety and health management plan <ul style="list-style-type: none"> - Use of noise reducing machines ➤Explanation of the work schedule to local people 	DCC EDC	EDC
9	Protected area	<ul style="list-style-type: none"> ➤Preparation and compliance of safety and health management plan <ul style="list-style-type: none"> - Restriction of materials temporary placed to outside ROW of the road near Southern Elephant Corridor Protected Forest 	DCC	EDC
10	Ecosystem			
16	Local Economy (Employment and Livelihood, etc.)	<ul style="list-style-type: none"> ➤Preparation of final design so as to avoid the impact on livelihood such as shops, houses and commercial trees ➤Preparation and compliance of safety and health management plan <ul style="list-style-type: none"> - Implementation of construction work in non-business hour or holiday in market area - Implementation of consultation and coordination about construction schedule with stakeholders ➤Explanation of the work schedule to local people ➤Appropriate compensation for cutting commercial trees, if necessary 	DCC PIC EDC	EDC
19	Existing Social Infrastructure, Social Service (including Traffic)	<ul style="list-style-type: none"> ➤Preparation and compliance of safety and health management plan <ul style="list-style-type: none"> - Restriction of place parked construction vehicles ➤Explanation of the work schedule to local people 	DCC EDC	EDC
28	Working condition	<ul style="list-style-type: none"> ➤Preparation and compliance of safety and health management plan <ul style="list-style-type: none"> - Wearing of basic safety equipment such as safety shoes, gloves and helmet - Wearing safety best at high place 	DCC	EDC
29	Accident	<ul style="list-style-type: none"> ➤Preparation and compliance of safety and health management plan <ul style="list-style-type: none"> - Installation of warning signs 	DCC	EDC

*DCC : Design and Construction Contractor, PIC: Project Implementation Consultant

Source: JICA Study Team

(2) Cost

The construction cost includes the cost related to preparation and compliance of safety and health management plan. Electricité du Cambodge (EDC) is responsible for the cost related to public meetings about the construction schedule and compensation for cutting commercial trees, if necessary.

Table 1.3-4 Cost of Mitigation Measures

Item	Number/Period	Unit Cost (US\$)	Total Cost (US\$)
Public meeting	9 days	200/day	1,800
Compensation for cutting commercial trees			If necessary

Source: JICA Study Team

1.3.1.4 Environmental Management and Monitoring Plan

(1) Implementation System

The implementation system of environmental management and monitoring plan is shown in Table 1.3-5. EDC is responsible for entire implementation of the project.

EDC explains the detailed construction schedule to local people before commencement of construction. DCC confirms the planned route and prepares the final design in terms of mitigation measures and safety and health management plan (including construction plan). The Project Implementation Consultant (PIC) reviews the plan prepared by DCC. If the cutting trees is required, PIC will inform to EDC, then EDC will consult with Affected People.

EDC regularly patrols surrounding the site during construction. EDC will require DCC through PIC if the problem is found. In the case that residents in the project area have grievance or any environmental and social problems occurs, EDC will try to solve them.

Table 1.3-5 Environmental Management and Monitoring Responsibilities

Organization	Responsibilities
EDC	<ul style="list-style-type: none"> ➤ EDC is directly responsible for EMP and the monitoring plan. ➤ EDC explains the detailed construction schedule and route. ➤ EDC regularly patrols the surrounding of the sites. ➤ If the problem is found, EDC provides environmental staffs to the site for the status check. ➤ EDC solves the grievance during construction and operation.
DCC	<ul style="list-style-type: none"> ➤ DCC prepares the final design in terms of mitigation measures ➤ DCC prepares and implements the safety and health management plan (including construction plan).
PIC	<ul style="list-style-type: none"> ➤ PIC supervises the execution of works so that the project is conducted in line with EMP and the monitoring plan. ➤ PIC reviews the safety and health management plan prepared by DCC.

Source: JICA Study Team

(2) Monitoring Plan

The monitoring plan was prepared according to the mitigation measures. Monitoring form is attached in Appendix-6.

Table 1.3-6 Monitoring Plan

Item	Parameters to be Monitored	Measure	Location	Frequency	Implementing /Responsible Organization
Pre-construction phase					
All items	Checking the final engineering design		—	At the detailed design stage and the final design stage	PIC, DCC
	Preparation and verification of the safety and health management plan		—	At the final design stage	PIC, DCC
	Public consultation		Project sites	Once to twice/ site	EDC
Construction phase					
Air pollution	Dust, situation of transportation of materials	Site confirmation by the patrol, complaints	Around the project site	Monthly	DCC, PIC, EDC
Noise/ vibration	Noise/ vibration, situation of transportation of materials				
Protected area	Situation of temporary storage of materials	Site confirmation by the patrol			
Ecosystem					
Local Economy (Employment and Livelihood, etc.)	Situation of avoidance of impacts on shops, houses, crops and commercial trees	Site confirmation by the patrol, complaints			
Traffic	Situation of parking of construction vehicles	Site confirmation by the patrol, complaints	Project site		
Working condition	Situation of wear safety equipment	Site confirmation by the patrol			
Accident	Situation of installation of warning signs	Site confirmation by the patrol			

Source: JICA Study Team

1.3.1.5 Stakeholder Consultation

Stakeholder meetings were held as shown in Table 1.3-7 explaining the overview of the project, expected impacts and mitigation measures. The interview survey was conducted for communes which did not join the meeting and related authorities. The related authorities mostly agreed with the project, because the project is implemented within ROW of the road and the impact is expected to be small. However, attention shall be taken for the residents along the road and cutting trees. The minutes and attendance lists of the stakeholder meetings were attached in Appendix-7.

Table 1.3-7 Date of Stakeholder Meetings and Interview Survey

Site	Date	Venue	Form
Bavet	09/Dec/2015	DPWT Svay Rieng DLMUPC Svay Rieng DOE Svay Rieng	Interview
	11/Dec/2015	Svay Teab District	1st Stakeholder meeting
		Bavet District	
	18/Dec/2015	Pou Ta Hao Commune Sangkhoar Commune Svay Rieng Commune	Interview
	25/May/2016	Svay Teab District	2nd Stakeholder meeting
Bavet District			
Poipet	14/Dec/2015	DPWT Poipet DLMUPC Poipet DOE Poipet	Interview
	15/Dec/2015	Ou Bei Choan Commune	1st Stakeholder meeting
	14-15/Dec/2015	Kampong Svay Commune Phniet Commune Preah Ponlea Commune	Interview
	27/May/2016	Ou Bei Choan Commune	2nd Stakeholder meeting
Koh Kong	21/Dec/2015	DPWT Koh Kong DLMUPC Koh kong DOE Koh Kong DAFF Koh Kong	Interview
	24/Dec/2015	Koh Kong Provincial Hall	1st Stakeholder meeting
	30/May/2016	Koh Kong Provincial Hall	2nd Stakeholder meeting

Source: JICA Study Team

(1) Bavet

1) 1st Stakeholder Meeting

In Svay Teab District

Date	11/12/2015	
Venue	Svay Teab District Office	
Attendance	20 persons	
	District	Svay Teav
	Commune	Kandieng Reay, Romeang Thkaol, Sambour
	Village	8 villages
Others	EDC, EDC Svay Rieng, JICA Study Team	
Main opinion	<ul style="list-style-type: none"> • Approve of the project • Concern for the impact on Prasaut market area and cutting trees • Proposal of construction by underground line in the market area • Requirement of information sharing before construction 	

In Bavet District

Date	11/12/2015
Venue	Bavet District Office

Attendance	30 persons	
	District	Bavet
	Commune	Bavet, Chrak Mtes, Prey Angkuhn
	Village	15 villages
	Others	EDC, EDC Bavet, EDC Svay Rieng, JICA Study Team
Main opinion	<ul style="list-style-type: none"> • Approve of the project • Concern for the impact on Chipu market area • Proposal of replacement with existing poles in the market area 	

2) Interview Survey

Date	18/12/2015	
Venue	Svay Rieng, Sangkhor, Pou Ta Hao Commune Office	
Attendance	Commune Chief or Council	
	Others	EDC, JICA Study Team
Main opinion	<ul style="list-style-type: none"> • Approval of the project • Demand for stable supply from residents • Immediate progress of the project because black out frequently occurs in Pou Ta Hao commune 	

3) 2nd Stakeholder Meeting

In Svay Teab District

Date	05/25/2016	
Venue	Svay Teab District Office	
Attendance	33 persons	
	District	Svay Teav
	Commune	Kandieng Reay, Romeang Thkaol, Sambour
	Village	9 villages
	Others	EDC, EDC Svay Rieng, JICA Study Team
Main opinion	<ul style="list-style-type: none"> • Concern for the clearance of the distribution line • Concern for the construction method of concrete poles in the dense residential area 	

In Bavet District

Date	05/25/2016	
Venue	Bavet District Office	
Attendance	33 persons	
	District	Bavet
	Commune	Chrak Mtes, Prey Angkuhn
	Village	5 villages
	Others	EDC, EDC Bavet, EDC Svay Rieng, JICA Study Team
Main opinion	<ul style="list-style-type: none"> • Concern for the construction method of concrete poles in the dense residential area 	

(2) Poipet

1) 1st Stakeholder Meeting

Date	15/12/2015	
Venue	Ou Bei Choan Commune Office	
Attendance	35 persons	
	District	
	Commune	Nimit, Phsar Kandal, Koub, Ou Bei Choan
	Village	13 villages
	Others	DEM, EDC, EDC Banteay Meanchay, JICA Study Team
Main opinion	<ul style="list-style-type: none"> • Approve of the project • Proposal of replacement with existing poles • Concern for cutting trees 	

2) Interview Survey

Date	14,15/12/2015	
Venue	Pneat, Kampong Svay, Preah Ponlea Commune Office	
Attendance	Commune Chief or Deputy Commune Chief	
	Others	EDC, JICA Study Team
Main opinion	• Approval of the project for development of the local economy and factory attract	

3) 2nd Stakeholder Meeting

Date	27/05/2016	
Venue	Ou Bei Choan Commune Office	
Attendance	116 persons	
	District	
	Commune	Koub, Ou Bei Choan
	Village	7 villages
	Others	DEM, EDC, EDC Banteay Meanchay, JICA Study Team
Main opinion	• Request for installing poles 15m from the center line of Road No.58	

(3) Koh Kong Site

1) 1st Stakeholder Meeting

Date	24/12/2015	
Venue	Koh Kong Provincial Hall	
Attendance	29 persons	
	District	Mondul Seima, Khemara Phoumin
	Commune	Pak Khlang, Smach Mean Chey, Stueng Veang, Dong Tong
	Village	10 villages
	Others	EDC, JICA Study Team
Main opinion	<ul style="list-style-type: none"> • Approve of the project • Concern for cutting trees • Requirement of information sharing before construction • Requirement of extension of distribution lines to non-electrified villages 	

2) 2nd Stakeholder Meeting

Date	30/05/2016	
Venue	Koh Kong Provincial Hall	
Attendance	25 persons	
	District	Mondul Seima, Khemara Phoumin
	Commune	Pak Khlang, Smach Mean Chey, Stueng Veang, Dong Tong, Peam Krosob, Toul Ko Ky
	Others	DEM, EDC, JICA Study Team
Main opinion	<ul style="list-style-type: none"> · Avoidance of impacts for occupied buildings in ROW of the road · Requirement of extension of distribution lines to non-electrified villages 	

1.3.2 Land Acquisition/ Resettlement

1.3.2.1 Necessity of Land Acquisition and Resettlement

Land acquisition and resettlement are not required by the project, because the distribution line is constructed in ROW of the road.

1.3.2.2 Comparison between JICA Guideline and Cambodian System

There is a slight gap between the theory of Cambodian regulations and JICA Guidelines (2010) with regards to the resettlement, land expropriation and compensation. The Land Law (2001) does not allow those who occupy ROW or common land to have the right to receive compensation or social support even though they are the vulnerable groups. In addition, Cambodian regulations do not provide political measures and the means for the people who suffer an adverse impact to recover their lost livelihood. The comparison between Cambodian regulations and JICA Guidelines is shown in Table 1.3-8.

Table 1.3-8 Gap between JICA Guideline and Cambodian System

No.	JICA Guideline	Regulation in Cambodia	Difference	Project Policy
1	Involuntary resettlement and loss of means of livelihood are to be avoided when feasible by exploring all viable alternatives. (JICA GL)	<p>Constitution (1993) Article 44 Legal private ownership shall be protected by the law. The right to confiscate possessions from any person shall be exercised only in the public interest as provided for under law and shall be required fair and just compensation in advance.</p> <p>Land Law (2001) Article 4 The right of ownership, recognized by Article 44 of the 1993 Constitution, applies to all immovable properties within the Kingdom of Cambodia in accordance with the conditions set forth by this law.</p> <p>Article 5 No person may be deprived of his ownership, unless it is in the public interest. An ownership deprivation shall be carried out in accordance with the forms and procedures provided by law and regulations and after the payment of fair and just compensation in advance.</p>	Cambodian regulations stipulate that the right to confiscate possessions from any person shall be exercised only in the public interest, but do not mention avoidance of resettlement.	The project will follow JICA Guidelines policy.

No.	JICA Guideline	Regulation in Cambodia	Difference	Project Policy
2	When population displacement is unavoidable, effective measures to minimize impact and to compensate for losses should be taken. (JICA GL)	Constitution (1993) Article 44 Land Law (2001) Article 4, 5	Ditto	The project will follow JICA Guidelines policy.
3	People who must be resettled involuntarily and people whose means of livelihood will be hindered or lost must be sufficiently compensated and supported, so that they can improve or at least restore their standard of living, income opportunities and production levels to pre-project levels. (JICA GL)	Constitution (1993) Article 44 Land Law (2001) Article 4, 5 Expropriation Law (2009) Article 4 Expropriation refers to confiscation of ownership of, with fair and just compensation in advance, immovable property or the real right to immovable property of a physical person or legal entity or legal public entity, which includes land, buildings, and cultivated plants, and for construction, for rehabilitation or for expansion of public physical infrastructure which is in the national and public interests. Article 22 Financial compensation given to the property owner and/or rightful owner shall be based on a market price or replacement price on the date of declaration of the expropriation. The market price or the replacement price shall be determined by an independent committee or agent selected by the Expropriation Committee.	Cambodian regulations stipulate compensation with market price or replacement cost, but do not mention restoration of living standard and its asset.	The project will follow JICA Guidelines policy.
4	Compensation must be based on the full replacement cost as much as possible. (JICA GL)	Expropriation Law (2009) Article 22 Article 23 The owner and/or the rightful owner has the right to compensation for actual damages commencing from the last date of declaration of expropriation for which they are entitled to fair and just compensation.	Cambodian regulations stipulate compensation with replacement cost, but mention for only legal property owners.	The project will follow JICA Guidelines policy.
5	Compensation and other kinds of assistance must be provided prior to displacement. (JICA GL)	Constitution (1993) Article 44 Land Law (2001) Article 5 Expropriation Law (2009) Article 19 The expropriation of the ownership of immovable property and real right to immovable property can be exercised only if the Expropriation Committee has paid fair and just compensation to the property's owner and/or rightful owner in advance, in accordance with the compensation procedures and principles set out in Section 3 of Chapter 4 of this law.	No difference	The project will follow both policies.
6	For projects that entail large-scale involuntary resettlement, resettlement action plans must be prepared and made available to the public. (JICA GL)	Sub Decree On Social Land Concessions (2003) Article 9 The requirements for social land concession planning include: (a) A description of the land and a land use plan that shall be prepared in accordance with the procedures for commune development plans.	Cambodian regulations require preparation of Social Land Concession Plan without the size of resettlement.	The project will follow both policies.

No.	JICA Guideline	Regulation in Cambodia	Difference	Project Policy
		(b)Information about the land identification, the ownership of the land and indicating whether the land is available for social land concessions or whether the land is suitable for the uses in the social land concession plan. (c)Detailed information about the selection of target land recipients. (d)Detailed plans for the allocation of land to the target land recipients. (e)Detailed information about the application process, including the place where applicants filed applications, the person who was responsible for publicizing the application process and the person who was responsible for posting the names of applicants, the place where the notices were posted and other administrative details of the application process.		
7	In preparing a resettlement action plan, consultations must be held with the affected people and their communities based on sufficient information made available to them in advance. (JICA GL)	Expropriation Law (2009) Article 16 Before proposing an expropriation project, the Expropriation Committee shall publicly conduct a survey by recording a detailed description of all rights of the owners and/or rightful owners to the immovable property and other properties which might be needed for compensation; all other related problems shall be recorded as well. In conducting this survey, the Expropriation Committee shall arrange a public consultation with the authorities at provincial, district and commune level, the commune councils and village representatives or the communities or persons affected by the expropriation in order to give them clear and specific information and to have all opinions from all concerned parties about the propose for public physical infrastructure project.	No difference	The project will follow both policies.
8	When consultations are held, explanations must be given in a form, manner, and language that are understandable to the affected people. (JICA GL)	N/A	There is no regulation related to language and measures in the consultation in Cambodia.	The project will follow JICA Guidelines policy.
9	Appropriate participation of affected people must be promoted in planning, implementation, and monitoring of resettlement action plans. (JICA GL)	Expropriation Law (2009) Article 16 Sub-decree on Environmental Impact Assessment Process (1999) Article 1 Encourage public participation in the implementation of EIA process and take into account of their conceptual input and suggestion for re-consideration prior to the implementation of any projects.	No difference	The project will follow both policies.
10	Appropriate and accessible grievance mechanisms must be established for the affected people and their communities. (JICA GL)	Expropriation Law (2009) Article 14 A Complaint Resolution Committee shall be established and led by representatives of Ministry of Land Management, Urban	No difference	The project will follow both policies.

No.	JICA Guideline	Regulation in Cambodia	Difference	Project Policy
		Planning and Construction, and representatives of other concerned ministries/institutions shall be involved. The organization and functioning of the Complaint Resolution Committee shall be determined by a separate sub-decree.		
11	Affected people are to be identified and recorded as early as possible in order to establish their eligibility through an initial baseline survey (including population census that serves as an eligibility cut-off date, asset inventory, and socioeconomic survey), preferably at the project identification stage, to prevent a subsequent influx of encroachers of others who wish to take advance of such benefits. (WB OP4.12 Para.6)	Expropriation Law (2009) Article 16	No difference	The project will follow both policies.
12	Eligibility of benefits includes, the PAPs who have formal legal rights to land (including customary and traditional land rights recognized under law), the PAPs who don't have formal legal rights to land at the time of census but have a claim to such land or assets and the PAPs who have no recognizable legal right to the land they are occupying. (WB OP4.12 Para.15)	Expropriation Law (2009) Article 16 Article 18 The following are null and void and cannot be made legal in any form whatsoever: - any entering into possession of public properties of the State and public legal entities and any transformation of possession of private properties of the State into ownership rights that was not made pursuant to the legal formalities and procedures that had been stipulated prior to that time, irrespective of the date of the creation of possession or transformation; - any transformation of a land concession, into a right of ownership, regardless of whether the transformation existed before this law came into effect, except concessions that are in response to social purposes; - any land concession which fails to comply with the provisions of Chapter 5; - any entering into possession of properties in the private property of the State, through any means, that occurs after this law comes into effect.	Cambodian regulations stipulate illegal entities occupied in the public properties are not compensated.	The project will follow JICA Guidelines policy.
13	Preference should be given to land-based resettlement strategies for displaced persons whose livelihoods are land-based. (WB OP4.12 Para.11)	N/A	There is no regulation related to livelihood restoration in Cambodia.	The project will follow JICA Guidelines policy.
14	Provide support for the transition period (between displacement and livelihood restoration). (WB OP4.12 Para.6)	N/A	There is no regulation related to support foot the transition period in Cambodia.	The project will follow JICA Guidelines policy.
15	Particular attention must be paid to the needs of the vulnerable groups among those displaced, especially those below the poverty	N/A	There is no regulation related to consideration for vulnerable groups in land acquisition and	The project will follow JICA Guidelines

No.	JICA Guideline	Regulation in Cambodia	Difference	Project Policy
	line, landless, elderly, women and children, ethnic minorities etc. (WB OP4.12 Para.8)		resettlement in Cambodia.	policy.
16	For projects that entail land acquisition or involuntary resettlement of fewer than 200 people, abbreviated resettlement plan is to be prepared. (WB OP4.12 Para.25)	Sub Decree On Social land Concessions (2003) Article 9	Cambodian regulations require preparation of Social Land Concession Plan without the size of resettlement.	The project will follow both policies.

Source: JICA Study Team

1.3.2.3 Scope of Land Acquisition and Resettlement

Land acquisition and resettlement are not required. But there are commercial trees planted in ROW of the road along the planned distribution line route. At the detailed design stage, the location of poles is planned to be decided so as to avoid cutting them. In the case that cutting trees is required, consultation with the owner and compensation, if necessary are implemented by EDC.

1.3.2.4 Compensation and Support Measures

The compensation policy in the case that cutting commercial trees (including trimming) is required is shown in Table 1.3-9.

Table 1.3-9 Entitlement Matrix

Type of Loss	Eligible Persons	Entitlements	Implementation Issues
Commercial trees	Persons who can demonstrate that commercial trees contributes to their income and livelihood.	The clearance fee will be full replacement cost based on market value.	APs to be notified and consulted after the final design

Source: JICA Study Team

1.3.2.5 Grievance Redress Mechanism

Affected people have right to ask question, raise concern or suggestion and lodge complaint at any time during resettlement planning and implementation. A Grievance Redress Committee will be established in Phnom Penh City and Kandal Province and members are representatives of the followings:

- Member of Resettlement Sub Committees
- Commune Committee Member(s)
- Local Consultant
- Local leader in each village/ local area
- NGO representatives, if any

The committee will be responsible for responding to all questions or complaint raised by affected people. The committee shall document all suggestion or complaint and the responses in writing.

If affected people disagree with compensation and relocation options, they may present their questions or complaints to the local administrative officials or grievance redress committees either in person or in writing. A grievance process shall have four stages.

1.3.2.6 Implementation System

EDC conducts consultation with affected people and compensation as a responsible organization for compensation.

1.3.2.7 Implementation Schedule

In the case that compensation is required, implementation schedule is shown in Table 1.3-10.

Table 1.3-10 Compensation Schedule

Item	Month																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17			
Detailed Design	■																			
Route Survey	■	■																		
Construction			■																	
Public Meeting			■																	
Consultation (if necessary)				■																
Compensation (if necessary)					■															
Monitoring							■													

Source: JICA Study Team

1.3.2.8 Cost and Finances

(1) Compensation Rate

The unit cost of trees was referred to those applied in the past projects.

Table 1.3-11 Compensation Rate

No.	Description	Unit Price (US\$/tree)
1	Coconut	38.0
2	Tamarind	33.5
3	Phyllanthus/Kantuot	9.5
4	Deum Chan	25.5
5	Kamping Reach	30.5
6	Elephant apple/Khveet	32.5
7	Jackfruit	40.5
8	Sour fruit/Krasaing	24.5
9	Jambolan plum/Pring	30.5
10	Hog plum/Mkak	30.5
11	Deum Mean (longan)	60.5
12	Sorghum/Sdau	30.5
13	Pomelo/Grapefruit	30.5
14	Milk fruit/Teuk Dos	50.5
15	Mango	51.0
16	Sugar Palm	64.5
17	Rubber	21.0
18	Areca palm/Sla	25.0
19	Other tree	10.0

Source: Updated Resettlement Plan_CAM45303, Dec 2014, ADB

(2) Finances

The cost of compensation is paid by EDC.

1.3.2.9 Monitoring System

Describe in Section 1.3.1.4.

1.3.2.10 Public Consultation Meeting

The construction schedule is explained to local people at the detailed design stage. If cutting commercial trees is required, EDC carries out the consultation with the owner. For details, refer to Section 1.3.1.5.

CHAPTER 2

CONTENTS OF THE PROJECT

CHAPTER 2 CONTENTS OF THE PROJECT

2.1 BASIC CONCEPT OF THE PROJECT

2.1.1 Overall Goal and Project Objectives

The economy of Cambodia shows steady growth. In 2014, Gross Domestic Product (GDP) growth rate of 7.0% has been achieved, and the economy in Cambodia is expected to be soaring in the future. Along with the economic growth, the power demand is rapidly increasing, and the power generation and import during a period from 2003 to 2013 have been increasing at the average annual rate of 19.2%. Therefore, the expansion of facilities in the power sector is a pressing issue. Such being the situation, the “Power Development” is the important policy included in the “Infrastructure Development” which is one of the four pillars in the “Rectangular Strategy-Phase III” of the Royal Government of Cambodia (RGC).

Under these situations, the RGC gives the rural electrification the status as one of the most prioritized policies in the "National Strategic Development Plan (2014-2018), and is implementing the expansion of power transmission and distribution systems in aforementioned three provinces by the government’s own capital or the financial support of other nation’s donors. In accordance with this national policy, the aim of the Project is to secure the stability of power supply along southern economic corridor.

2.1.2 Outline of the Project

The Project involves the construction of new 22 kV distribution facilities in the Bavet town of Svay Rieng Province, Poipet town of Banteay Meanchey Province and Koh Kong town of Koh Kong Province in order to accomplish the above-mentioned goal. Through the execution of the Project, a stable power supply can be achieved along southern economic corridor.

(1) Bavet town of Svay Rieng Province

Two circuits will be installed in length of about 9 km to link Manhattan special economic zone (SEZ) with Chrak Mtes substation (S/S). The S/S was under construction as of May, 2016. Another circuit will be installed in length of about 28 km to link the S/S with Svay Rieng switching station (SW/S) operated by Electricité du Cambodge (EDC). Two circuits will be installed in length of about 300 m to link the S/S with the existing overhead distribution line (OH). Though main facility is OH with conductor size of 240 mm², underground cable (UG) with conductor size of 3 × 300 mm² is applied to the following sections. One is the section traversing National Road No. 1 in front of the SEZ. Another one is the section of about 300 m between the S/S and National Road No. 1. The other is the section of about 2 km between the SW/S and National Road No. 1 including the bridge with about 120 m long. In addition, twenty-six units of distribution transformer with rating capacity from 100 kVA to 400 kVA and nine units of load breaking switch (LBS) will be installed.

(2) Poipet town of Banteay Meanchey province

One circuit will be installed in the length of about 32 km to link IE S/S with the existing OH. The S/S is operated by Cambodia Power Transmission Line Co. (CPLT), and it started operation in 2014. Though main facility is OH with conductor size of 240 mm², UG with conductor size of 3 × 300 mm² is applied to the following sections. One is the section of about 350 m between the S/S to National Road No. 58. The other is the section of about 570 m between National Road No.

5 and the existing OH. In addition, three units of LBS will be installed.

The other circuit will be installed in the section of about 7 km length to link Banteay Meanchey S/S with the existing OH. This S/S is operated by CPLT, too. Though main facility is OH with conductor size of 150 mm², UG with conductor size of 3 × 240 mm² is applied to the section of about 440 m from the S/S to National Road No. 6. In addition, three units of LBS will be installed.

(3) Koh Kong town of Koh Kong province

One circuit will be installed in the section of about 15 km long to link Koh Kong SEZ with the existing OH coming from Tatay. Though main facility is OH with conductor size of 240 mm², UG with conductor size of 3 × 300 mm² is applied to the section of about 2 km along the Koh Kong Bridge. In addition, five units of LBS will be installed.

2.2 OUTLINE DESIGN OF THE JAPANESE ASSISTANCE

2.2.1 Design Policy

(1) Basic Policies

Specification of facilities must conform to standards issued by Cambodian authorities and capacity of facilities is set based on demand forecast. It is necessary to consider natural and social conditions in each site for planning of distribution system and implementation method.

(2) Policy for Natural Conditions

1) Temperature, Rainfall, Humidity and Wind

It is not necessary to take special measures for natural conditions such as temperature, rainfall, humidity and wind. But the distribution facilities must keep their performances under the conditions described by the Design Standard of EDC at least.

2) Lightning

Because of high-frequency of lightning in Cambodia, the lightning arrestors and earthing systems shall be put in the middle of each feeder to protect important facilities.

Additionally, ground wire systems shall be adopted in Koh Kong as lighting-prone area in order to prevent damages caused by direct lightning strikes.

3) Obstacle

Partial Insulated Conductor (PIC) shall be adopted for the conductor of overhead line in order to reduce the frequency of short circuit fault caused by the contact with obstacles such as trees, birds and so on. Application to PIC has the effect to suppress tree trimmings, too.

(3) Socioeconomic Conditions

All poles shall be constructed in Right of Way (ROW) in this Project.

It is most important to secure safety for residents and traffics during / after the installation of the facilities. According to the Design Standard of EDC, basic span length of pole shall be 40 m in the Project. On the other hand, for a congested housing area such as Chipu and Prasaut which are about 1.4 km along the national highway in Bavet, the span shall be selected flexibly (e.g., 35 m) for taking residential safety

It is necessary for Cambodia side to explain the Project contents sufficiently to the surrounding residents.

(4) Construction and Procurement Conditions

In recent years, the small-size building is often constructed in Cambodia including a local city, and it's possible to procure construction materials such as cement, sand and a pebble at sites. On the other hand, an electric power conductor / cable which satisfies the requested scale and specification with this Project are not being produced in Cambodia.

The list of procurement of main equipment is shown in Table 2.2-1. From the viewpoint of reduction of Project cost, major equipment which is similar quality to made in Japan are procured

from third countries.

Meanwhile, procurement of major equipment from third countries shall be restricted to those who are members of the Development Assistance Committee and Vietnam with many import experience, Thailand and China. However, materials that technological standard and quality are met do not specify the country of origin.

Further, 22kV distribution system is one of the major middle voltage classes in the world, and one of the voltage classes adopted for the distribution system in Japan. But such as LBS, technical advantage is not specifically admitted in the Japanese manufacturer's product. On the other hand, it is expected that the price competitiveness is inferior.

Table 2.2-1 Procurement of Major Equipment

No.	Item	Local	Japan	Third countries	
				DAC	Other
1	Cables	○		○	○
2	PVC pipe	○			
3	Miscellaneous for cable	○		○	○
4	Concrete Pole	○			
5	Conductors	○		○	○
6	Miscellaneous for conductors	○		○	○
7	Distribution transformer	○		○	○
8	LBS (Load Breaking Switch)			○	○

DAC stands for Development Assistant Committee

(5) Effective Use of Local Construction Companies

It is assumed the Works at the Site will be managed by a Japanese company as a prime contractor who supervises the individual works sub-contracted and carried out by local companies. Local companies also are assumed to carry out, providing equipment and manpower, the installation works of electric equipment. The Works at the Site include; civil works (earth works, concrete foundation works), equipment installation works and electric works (laying cables).

In this project, the construction of 3 sites in parallel is required. Total length of distribution line is about 101 km (Bavet about 47 km, Poipet about 39 km and Koh Kong about 15 km).

Traveling time from Phnom Penh City by car is to Bavet about 3 hours, to Poipet about 8 hours and to Koh Kong about 5 hours.

Although engineers who have advanced technical skills are necessary at the time of installing and commissioning of the facilities, there is little similar installation work for those distribution construction work in Cambodia. It is therefore difficult to effectively utilize local companies aside from workmen, thus, Japanese engineers are dispatched for the said facilities' construction.

(6) Operation and Maintenance Capability

The implementation organization of this Project is EDC which maintains 7,356 km of MV and 3,482 km of LV distribution line (EDC Annual Report 2014) and has experience with other similar scale distribution expansion projects in Cambodia by the other funds. In addition, EDC which will take charge of operation and maintenance of the Project is deemed to have enough capability to operate and maintain the procured distribution facilities.

(7) Scope of Facilities and Equipment, Grade Setting

For the design of the distribution facilities to be procured and constructed under the Project, special care will be taken to ensure that the technical requirements of the equipment and facilities do not exceed the technical level of SREPTS (Specific Requirements of Electric Power Technical Standards of the Kingdom of Cambodia) and Design Standards of EDC which will be responsible for their operation and maintenance.

(8) Construction and Procurement Methods and Schedule

As the Project will be implemented in accordance with the rules of the grant aid scheme of the Government of Japan, it must be completed within a single fiscal year. For the completion of the Project within the finalized schedule to ensure the achievement of the expected effects of power stability, the coordination of the work between the Japanese side and Cambodian side is essential. The schedule must be carefully planned with proper consideration of suitable routes, methods, timing of and procedures to be followed for transportation.

2.2.2 Basic Plan (Construction Plan / Equipment Plan)

(1) Precondition of Planning

1) Demand forecast

Demand of each distribution line was assumed in 2021 that is after three years from the completion in 2018.

The demands of SEZs were assumed in the study team by the result of interview. The demands of the new and extension pole-mounted transformers were assumed from the study result of the EDC. Existing distribution line demand was assumed by the integration (95% increment) of annual increase rate. This time, Cambodia's annual power demand growth rate (10%)* was used to continue for seven years from 2014 to 2021.

* Annual average power consumption increase rate in the case of a GDP growth rate of 7% / year up to 2030 in power development master plan

The demand forecasts of each distribution line related to the project are shown in the following Table 2.2-2 to Table 2.2-4.

Table 2.2-2 Bavet Area Demand Forecast (in 2021)

No. of feeder	Route (Chrak Mtes Substation~)	Demand forecast		Basis for calculation
B1	~ near Manhattan SEZ	Manhattan SEZ	10 MW	Interview by Study team
B2	~ near Taiseng SEZ	Taiseng 1&2 SEZ	7 MW	Same as above
		Existing distribution line demand in Bavet area	6 MW	Adding increase rate 95% to the existing distribution line load 3MW.
		New and extension pole transformers (No.21~26)	0.6 MW	EDC demand forecast
B3	~ Svay Rieng Switching Station	New and extension pole transformers (No.1~20)	3 MW	Same as above
B4	~ Existing distribution line (West side along National road no.1)	Existing distribution line load of the following section Chrak Mtes Substation ~ Toward Svay Rieng	7.5 MW	Adding a 95 percent rate to the division rate (75%) of the existing distribution line load 5MW
B5	~ Existing distribution line (East side along National road no.1)	Existing distribution line load of the following section Chrak Mtes Substation ~ Toward Bavet	2.5 MW	Adding a 95 percent rate to the division rate (25%) of the existing distribution line load 5MW

Table 2.2-3 Poipet Area Demand Forecast (in 2021)

No. of feeder	Route	Demand forecast		Basis for calculation
P1	IE Substation ~ Existing Distribution Line	Existing distribution line load transferred to the new distribution line	6 MW	Adding a 95 percent rate to the existing distribution line load 3MW
P2	Banteay Meanchey Substation ~ Existing Distribution Line	Existing distribution line load transferred to the new distribution line	6 MW	Same as above

Table 2.2-4 Koh Kong Area Demand Forecast (in 2021)

No. of feeder	Route	Demand forecast		Basis for calculation
K1	Demarcation point between EDC and REE in the existing distribution line in the feed from Tatay hydro power plant to Koh Kong city ~ Koh Kong SEZ	Koh Kong SEZ	3 MW	Interview by Study team
		Koh Kong city demand which supplied by REE, via the existing EDC distribution line from Tatay Hydro hydropower plant.	4 MW	Adding a 95 percent rate to the existing distribution line load 2MW

2) Power flow Analysis

a) Bavet

AS for new and extension pole-mounted transformer load, existing distribution line load, and SEZ demand, voltage analysis in 2021 was confirmed that each distribution line voltage was within the rated value.

The summary of voltage analysis result for the additional distribution lines from the Chrak Mets substation are showed in the table below.

Table 2.2-5 Voltage Analysis Result (Bavet)

No.	Line type	Distribution line length	Total of demand forecast	Voltage drop	Judgment
B1	UG 3 × 300 mm ² OH 240 mm ² (Existing OH 185 mm ²)	About 9 km	- Manhattan SEZ : 10 MW	-912V (-4.1%)	Good
B2		About 9 km	- Taiseng 1&2 SEZ : 7 MW - New and extension pole transformer : 0.6 MW - Existing distribution line demand : 6 MW	-866V (-3.9%)	Good
B3		About 28.0 km	- New and extension pole transformer : 3 MW	-307V (-1.4%)	Good
B4		About 0.3 km + existing 27 km	- Existing distribution line demand : 7.5 MW	-1,550V (-7.0%)	Good
B5		About 0.3 km + existing 9 km	- Existing distribution line demand : 2.5 MW	-176V (-0.8%)	Good

(22 kV system lower limit voltage 19.8kV is defined in the GRID CODE. Therefore voltage drop tolerance is -10%)

b) Poipet

As for existing distribution line load transferred to the new distribution line, voltage analysis in 2021 was confirmed that each distribution line voltage was within the rated value.

The summary of voltage analysis results for the additional distribution lines from the IE substation and Banteay Meanchey Substation are showed in the table below.

Table 2.2-6 Voltage Analysis Result (Poipet)

No.	Line type	Distribution line length	Total of demand forecast	Voltage drop	Judgment
P1	UG 3 × 300mm ² OH 240mm ²	About 32 km	- Existing distribution line demand : 6 MW	-1,984V (-9.0%)	Good
P2	UG 3 × 240mm ² OH 150mm ²	About 7 km	- Existing distribution line demand : 6 MW	-533V (-2.4%)	Good

(22 kV system lower limit voltage 19.8kV is defined in the GRID CODE. Therefore voltage drop tolerance is -10%)

c) Koh Kong

As for Koh Kong SEZ demand and existing distribution line load, voltage analysis in 2021 was confirmed that each distribution line voltage was within the rated value. Voltage study results of new distribution line (including the existing EDC distribution line from Tatay power plant) are shown in the table below.

Table 2.2-7 Voltage Analysis Result (Koh Kong)

No.	Line type	Distribution line length	Total of demand forecast	Voltage drop	Judgment
K1	UG 3x300 mm ² OH 240 mm ²	About 15 km + Existing Line of EDC about 37 km	- Koh Kong SEZ : 3 MW [+Koh Kong City : 4 MW]	-1,532V (-7.0%)	Good

(22 kV system lower limit voltage 19.8kV is defined in the GRID CODE. Therefore voltage drop tolerance is -10%)

Appendix-8 shows the voltage drop study details of each distribution line.

(2) Outline of Overall Plan

1) Applied Standard

The design will be formulated under the following criteria:

General Requirements of Electric Power Technical Standards (GREPTS)	(Cambodia)
Specific Requirements of Electric Power Technical Standards (SREPTS)	(Cambodia)
Design Standards	(EDC)
International Electrotechnical Commission	(IEC)
International Organization for Standardization	(ISO)
Other International Standard	

The site work for the project facilities shall be carried out in accordance with the regulation and/ or practices of EDC. And also the project shall be executed taking into account all necessary safety measures to the public and workers at the sites.

2) Voltage Levels

The voltage in the medium distribution line system of Cambodia is adopted 22kV. Moreover, the existing medium voltage distribution line is 22kV. Therefore the medium voltage system is enacted as 22kV.

Table 2.2-8 System Voltage

System	Voltage level & Phases
Medium voltage distribution system	22kV, 3-phase, 3-wire
Low voltage distribution system	400/230V, 3-phase, 4-wire

3) Basic Conditions

With reference to the Electric Power Technical Standards and Design Standard of EDC, the design conditions for the facilities to be provided under the Project will be adopted as follows:

Table 2.2-9 Design Conditions of the Distribution

Design Parameter	Design Value
Design wind pressures	
Conductors	680 Pa/m ²
Poles (round)	520 Pa/m ²
Insulators	900 Pa/m ²
Cross arm and Other equipment	1,410 Pa/m ²
Ground temperature maximum	25°C
Sag and tension	
maximum sag occurs at	75°C, still air
maximum stress occurs at	13°C, maximum wind
every day stress (EDS) occurs at	27°C, still air
factor of safety at maximum stress	2.5 against ultimate tensile strength (UTS)
factor of safety at EDS	4.0

4) Electrical Design Parameters

The electrical design parameters shown in Table 2.2-10 and Table 2.2-11 will be adopted for the MV and LV distribution systems:

a) 22kV Medium Voltage Electrical Design Parameter

Table 2.2-10 MV Electrical Design Parameter

Design Parameter	Design Value
Distribution system	3 phase, 3 wire system
Nominal system voltage	22 kV
Maximum system voltage	24 kV
Rated impulse voltage withstand (peak)	125 kV
Rated power-frequency withstand voltage (1 min, rms.)	50 kV
Rated short-time current (1 sec rms.)	12.5 kA
Rated frequency	50 Hz

b) 400V-230V Low Voltage Electrical Design Parameter

Table 2.2-11 LV Electrical Design Parameter

Design Parameter	Design Value
Distribution system	3 phase, 4 wire system
Nominal system voltage	400/230 V
Maximum system voltage	424/244 V
Rated power-frequency withstand voltage (1 min, rms.)	2,000 V
Rated impulse voltage withstand (peak)	6,000 V
Rated frequency	50 Hz

5) Grounding System

The earthing for the MV and LV distribution system are shown in Table 2.2-12.

Table 2.2-12 Grounding System

Particular	System
a) MV distribution system	Low-resistance grounding system
b) LV distribution system	Solid grounding system

6) Clearance

The minimum clearance for conductors shown in Table will be adopted because the project areas are categorized as “Urban area” defined by GREPTS and SREPTS.

Table 2.2-13 Minimum Clearance

Particular	Minimum Clearance (meters)
Clearance above ground - 22 kV across the road along the road others	8.0
	6.5
	6.5
Clearance above ground – LV across the road along the road others	6.5
	5.5
	5.5

7) Voltage Variation

The voltage variation shown in Table will be kept to ensure a quality supply at end of the distribution line and/or the customer’s switchboard:

Table 2.2-14 Voltage Variation

Voltage Level	Voltage Variation
MV network - 22 kV	± 10%
LV network - 400/230 V	± 10%

8) Distribution Line Facilities

The overhead and underground distribution line facilities to be provided for the project are as follows.

a) Overhead line support

Supports for overhead lines are to be of steel reinforced concrete pole, with 12 m long for single circuit MV distribution lines and with 14 m long for double circuit MV distribution lines. In case that minimum clearance cannot be kept due to crossing road, crossing existing lines, etc., longer pole or spliced pole shall be used in order to keep the height. The poles will be set in the concrete foundations. The concrete foundation depends on place and soil condition.

The height of poles was decided as Table 2.2-15.

Table 2.2-15 Study on Overhead Line Support

	MV Line (m)
Span	40 (35 at narrow quarters)
Maximum sag of conductor	1.01
Minimum height of conductor above ground	6.5
Depth of pole	1/6 of pole length

b) Insulators

Pin or pin-post and string insulators are to be used for supporting the 22 kV line conductors. The conductors will be fixed to the insulators by insulated annealed aluminum bind wires. Pin or pin-post insulators are used for through points and rotation points. String insulators are used for pulling conductors.

c) Conductors

In the cause of the overhead distribution line faults, the majority is arising from the short circuit faults due to contact the line to line or earth faults due to contact the line to tree of the bare distribution line conductors. As these faults measures, the covered conductor is adopted in the Project.

Underground distribution line is to be put by the direct burial method. And it shall be protected by the conduit when crossing the road.

- ① Medium Voltage Overhead Conductor
1-core all aluminum conductors with cross linked polyethylene cover (PIC)
240mm² or 150 mm²
- ② Medium Voltage Underground Cable
Triplex twisted cross linked polyethylene cover aluminum cable (XLPE)
1-core 3 × 300 mm² or 1-core 3 × 240 mm²

d) Distribution Transformer

The pole-mounted transformer consists of a transformer, fuse cutouts, arrestors and LV distribution board etc.

- ① Transformer
 - Type : Three-phase, oil immersed indoor type with no-load tap changer
Tap changer (±5%, 5-steps)
 - Capacity : 100, 160, 200, 250, 315 and 400 kVA
 - Voltage ratio
 - Primary side : 22 kV, 3 phase, 3 wire system
 - Secondary side : 400-230 V, 3 phase, 4 wire system
 - Voltage group : Dyn11
 - Cooling system : ONAN

② 22kV Fuse switch

- Type : Pole mounted, hand operation, hook-rod operation
- Rated voltage : 24kV
- Rated current : 100A frame
- Rated breaking current : 10kA

③ LV distribution board

LV distribution board will be of wall mounted, metal-clad indoor type. The board will provide a molded case circuit breaker (MCCB) for the main switch of LV circuit and cartridge type fuses for the feeder circuits.

e) Load Breaking Switch (LBS)

LBS will be of 24kV, 630A and gas-insulated.

f) Crossarm

The conductors of the MV overhead distribution lines will be arranged in horizontal-formation for a circuit on the straight pole. The arms are to be fixed to the pole with two through bolts.

g) Lightning Arrester

Lightning arresters will be of 24 kV, 10kA non-linear resistor type and mounted on the end of lines, at the joint of underground cables and overhead lines, at the line switches, and distribution transformer stations and every 400 meter of overhead lines. And in Koh Kong area, the ground wire is to be put due to high frequency of lightning hit across mountain area. The ground wire will be of galvanized stranded steel wire (1-core 35 mm²).

h) Grounding

The transformer, lightning arrester, switch case, LBS and other metal parts required for safe operation will be grounded by means of a grounding rod. Copper coated steel rods will be used for grounding.

i) Watt-hour meters

Watt-hour meters will be put at LV side measurement of pole-mounted transformer, connection point to REE and boarder of management in EDC. The major electrical features of the watt-hour meter are as follows:

Table 2.2-16 Watt-hour Meter

Items	LV 3-phase (with CT)	MV (with CT and VT)
Rated voltage	230/400V	100V/ $\sqrt{3}$ or 110V/ $\sqrt{3}$
Frequency	50Hz	50Hz
Rated current	5A	5A
Accuracy	Class 1	Class 0.5

(3) Project Facilities

According to the above mentioned basic design policy, main facilities and amount are as follows:

Table 2.2-17 Facilities to be provided under the Project

No.	Items	Unit	Bavet area	Poipet area	Koh Kong area
1-1	22kV OH conductor (240mm ²)	km	137.46	98.67	40.44
1-2	22kV OH conductor (150mm ²)	km	-	21.54	-
2-1	22kV UG cable (XLPE 3x300mm ²)	km	3.44	0.98	1.87
2-2	22kV UG cable (XLPE 3x240mm ²)	km	-	0.47	-
3-1	Distribution Transformer (100kVA)	piece	10	-	-
3-2	Distribution Transformer (160kVA)	piece	8	-	-
3-3	Distribution Transformer (200kVA)	piece	3	-	-
3-4	Distribution Transformer (250kVA)	piece	3	-	-
3-5	Distribution Transformer (315kVA)	piece	1	-	-
3-6	Distribution Transformer (400kVA)	piece	1	-	-
4	Load Breaking Switch (630A)	piece	9	6	5
5	Lightning Arrestor(arrestor, ground wire)	L.S.	1	1	1
6	Spare items	L.S.	1	1	1

The minimum spare items for 1 year will be procured by the Project. In addition, it is necessary for EDC to budget for the spare items by 1 year after the completion of the Project.

2.2.3 Outline Design Drawing

The outline design drawings for the Project are listed as follows.

Appendix No.	Drawing Name
Appendix-10	Route Map of Bavet
Appendix-11	Route Map of Poipet (1)
Appendix-12	Route Map of Poipet (2)
Appendix-13	Route Map of Koh Kong
Appendix-14	Chrak Mtes Substation
Appendix-15	EDC Svay Rieng Switching Station
Appendix-16	IE Substation
Appendix-17	Banteay Meanchey Substation
Appendix-13	MV Pole Arrangement

2.2.4 Implementation Plan

2.2.4.1 Implementation Policy

The Project will be implemented in accordance with Japan's Grant Aid Scheme. Accordingly, its implementation will only take place after Project approval by the Government of Japan, the Exchange of Notes (E/N) and Grant Agreement (G/A) between both governments. This basic issues and points to be noted in the process of implementing the Project are described as follows.

(1) Project Implementation Body

The Project implementation body, is scheduled to take charge of operation and maintenance of the relevant facilities after the commissioning. It will, therefore, be necessary for EDC to assign the capable person responsible for the Project to ensure its smooth progress by maintaining close contact and consult with Japanese consultants and the Contractor.

The appointed person responsible for the Project at EDC will be required to explain fully the contents of the Project to staff concerned of EDC and local residents at the Project sites in order to facilitate their understanding of the Project and to encourage their cooperation during implementation.

(2) Consultant

A Japanese Consultant will conclude a consulting services agreement with EDC and will provide detailed design and construction supervision for the Project to realize the planned procurement and installation of equipment and materials. The Consultant will also prepare tender documents and provide necessary assistance to EDC, the Project implementation body, and for tender process.

(3) Equipment Supplier

In accordance with the framework of the Japan's Grant Aid Scheme, a Japanese Contractor selected by the Cambodian side through competitive tendering will carry out the procurement and installation of equipment and materials.

If it is deemed necessary that the Contract provide aftercare service including continuous supply of spare parts and an appropriate response to breakdowns even after completing the Project, the Contractor should provide adequate liaison and adjustment after handing over relevant equipment and materials.

(4) Necessity for Dispatching Japanese Engineers

There are a few contractors and electric engineering firms in Cambodia, therefore, it is possible to place orders at local companies for onsite recruitment and procurement of workers. However, most distribution line of this Project will be along heavy traffic way such as National Highway No. 1 or downtown area, thus, engineers should be dispatched from Japan to ensure quality, technical guidance and schedule control.

2.2.4.2 Implementation Conditions

(1) Effective Use of Local Equipment and Materials

Construction materials such as concrete poles, protection pipes for underground cables, etc. are locally available in Cambodia and have been frequently adopted in similar projects. Consequently, in the formulation of a work plan, locally available materials will be utilized wherever possible as a means of promoting local industry. However, the conductors and LBS, etc. depend upon import in Cambodia. Accordingly, it is difficult to utilize local products. Therefore, these materials and equipment will be procured from Japan or a third country under the Project.

(2) Safety Measure

The security condition in Cambodia has been improved with stabilization of the political situation. However, pick-pocketing, theft and robbery cases are frequent. It is thought that social problems such as increasing the gap between rich and poor, widespread of firearms caused by civil wars, etc. trigger these crimes. Additionally many traffic accidents occur caused by traffic violations and breach of manners.

Considering these circumstances, special attention should be paid to preventing theft of equipment and materials and ensuring the safety of related-construction personnel. Although it has been confirmed that the recipient government will take necessary measures to ensure safety, the Japanese side should take the following steps also.

- Equipment and materials should be stored in a place out of reach of general public.
- Safe and smooth traffic should be secured.
- Partitions of work area should be placed to lead drivers and walkers safely.
- Warning signs should be placed to inform drivers and walkers on work area.
- A liaison system for related materials should be created.

(3) Tax Exemption

The procedures for tax exemption (including value added taxes) for equipment and materials to be procured under the Project by the Cambodian side are as follows. After the Contractor submits an application for tax exemption to EDC, EDC submits a request for a letter for tax exemption to the Ministry of Finance via the MME, which is sent to Customs (copies are issued simultaneously to the MME and the Contractor). When equipment and materials arrive at port or at an airport in Cambodia, the Contractor presents the prescribed shipping documents with an attached copy of the above-mentioned tax exemption letter to Customs. Tax is then exempted. Consequently, it is important to pay special attention to the process of acquiring tax exemption in order to prevent any delays which could have a negative impact on the progress of the Project.

2.2.4.3 Scope of Works

For the undertakings between the Japanese side and the Cambodian side, the Japanese side will carry out procurement and installation work, commissioning test for 22kV distribution lines to be constructed. The Cambodian side will take care of land preparation for stockyard and correspondence to consumers at necessary interruptions, et al. The detailed work demarcation between the Japanese side and the Cambodian side is shown in Table 2.2-18.

Table 2.2-18 Scope of Work between Japan and Cambodia

Work Item	Procurement		Installation		Remarks
	Japan	Cambodia	Japan	Cambodia	
1. Common requirement					
(1) Providing stockyard for equipment & materials		○		○	To be completed prior to commencement of the work by the Japanese Contractor
(2) Assuring worker security at the site during construction period		○		○	
(3) Counter plan & counter plan to consumers at necessary interruptions during construction period		○		○	
(4) Informing interruptions plan to consumers during construction period		○		○	
(5) Road traffic restriction		○		○	
(6) Providing disposal pit for surplus soil & waste water		○		○	
(7) Acquisition of authorization		○		○	
2. Distribution equipment					
(1) Equipment & Materials (concrete pole, conductor, cable, et al.)	○		○		
(2) Cutting trees on proposed distribution route, if required		○		○	To be completed prior to commencement of the work by Japanese Contractor
(3) Removing illegal buildings on proposed distribution route if required		○		○	
(4) Spare parts, maintenance tools (including testing devices)				○ (Storage)	
(5) Commissioning test			○		

2.2.4.4 Consultant Supervision

In due consideration of the objectives of the basic design in accordance with Japan's Grant Aid scheme, the Consultant is responsible for smooth implementation of the detailed design and construction supervision after creating a reliable project team. Since the Project sites locate in three rural areas and they have far distance from each other, the Consultant will dispatch at least one full-time engineer to the project site to carry out appropriate management of schedule, quality and safety control during the construction period. The Consultant will also dispatch other engineers in line with the work progress of equipment installation and commissioning and supervise construction work to be conducted by the Contractor.

(1) Basic Principles of Work Supervision

The Consultant will supervise the work progress to ensure the completion of the construction work within the predetermined period and will supervise and guide the Contractor to ensure quality described in the contract and safe implementation of the construction work in principle.

Major points to be noted of work supervisor are described as follows.

1) Schedule Control

The implementation schedule planned at the conclusion of the Contract and actual state of progress will be compared monthly or weekly to ensure the handing over date specified in the Contract. If any delay in work is anticipated, the Consultant will issue a warning to the Contractor and will request that the Contractor take steps to improve the situation so that the work is completed within the contract period. The above-mentioned comparison is mainly conducted by confirming the following items.

- Confirmation of quantity of work completed (Quantity of equipment manufactured at the factory and equipment for installation work completed at site)
- Confirmation of quantity of equipment and materials delivered (Distribution equipment and materials for installation work)
- Confirmation of conditions of temporary work and preparation of construction machinery
- Confirmation of actual number of engineers, skilled workers and laborers, and their ratio compared with the original plan

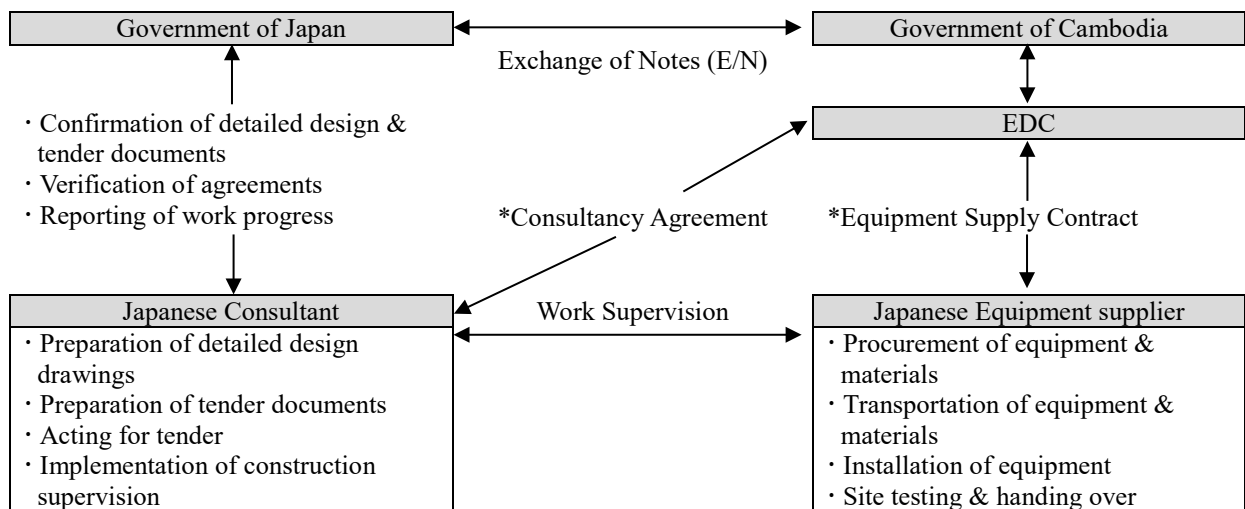
2) Safety Control

The Consultant will provide supervision in order to prevent any industrial injuries and accidents at the site during construction period before they happen through consultations with representatives of the Contractor. The key points for onsite safety control are described as follows.

- Preparation of safety control rules and appointment of a safety manager
- Prevention of accidents by carrying out periodical inspections of construction machinery
- Formulation of operational routes for construction vehicles and machinery, etc. and strict enforcement of careful and safe driving
- Adherence to welfare measures and holidays for workers

(2) Project Implementation System

The interrelationship among participants in the implementation of the Project including the construction supervision period is shown in Figure 2.2-1.



*Note: The consultancy contract and the Contractor's contract must be approved by the Government of Japan.

Figure 2.2-1 Project Implementation System

(3) Work Supervisors (Supervising Engineers)

The Contractor will carry out the distribution line construction. The Contractor will also employ local construction companies in Cambodia in accordance with the Contract Documents. Since it will be necessary for the Contractor to fully understand the contents of the Contract regarding the work schedule, work quality and compliance with specifications and safety measures, the Contractor will dispatch Japanese engineers with overseas experience similar to the Project to provide guidance and training for local companies.

Given the scale and contents of the planned construction work under the Project, it is desirable to dispatch at least full-time engineers listed in Table 2.2-19.

Table 2.2-19 Engineers Dispatched by Equipment Supplier

Type of Engineer	No.	Assigned Work	Assignment period
Site Manager	1	<ul style="list-style-type: none"> • Overall construction work management • Consultation & coordination with related organizations • Obtaining of necessary permits • Equipment procurement control • Customs clearance • Personnel management, etc. 	Equipment installation period
Inspection Engineer	1	<ul style="list-style-type: none"> • Confirmation and checking of equipment shop drawings in general (work in Japan) 	Drawing approval period
		<ul style="list-style-type: none"> • Witnessing of inspection of facilities 	Equipment testing period
Assistant Procurement Control (each site)	3	<ul style="list-style-type: none"> • Testing & adjustment of equipment installation in general • Assisting for site manager 	Equipment installation period
		<ul style="list-style-type: none"> • Joint inspection 	Equipment testing period

2.2.4.5 Quality Control Plan

The Consultant will supervise the Contractor in regard to the following items so as to adhere to the quality and progress of the work for the facilities and equipment indicated in the Contract Documents (technical specifications, detailed design drawings, etc.) If the Consultant believes that the quality or work progress does not meet the requirements, he will demand that the Contractor corrects, changes or modifies the situation.

- Checking of the shop drawings and specifications for the equipment
- Checking of the factory inspection results for the equipment or attendance at the shop inspection
- Checking of the packaging, transportation and temporary on-site storage methods
- Checking of the working drawings for the equipment and installation manuals
- Checking of the testing, adjustment and inspection manuals
- Supervision of the site installation of the equipment and attendance at the testing and inspection
- Comparison between the equipment installation and building work drawings and the completed work

2.2.4.6 Procurement Plan

The requested equipment and materials are usually used in Cambodia and is not a particularly special thing. Concrete poles are procured in Cambodia, electric wires, transformers and others are expected to import from neighboring countries.

It is considering for economy and safety, and the procurement method will be decided appropriately. One of the options, it is supposed marine transportation from neighbor countries to port of Sihanoukville and the land transportation by the truck to each site. Sihanoukville is only one international port having container terminal facing only ocean the Cambodia, and is base port of the southern part economy corridor.

(1) Transportation plan

1) Transportation by Japanese side

According to the concept of the plan, equipment and materials will be procured from the third country and Cambodia. For transportation by Japanese side, final destination is three sites of the project, and in addition, the construction also will be done by Japanese side.

2) Transport route

The transport route of third country is as follows. In addition, procurement from the third country assumes neighboring countries, it is not necessary that it shall be same country of origin and procurement country, are available appropriate equipment and materials in these countries. Also, the local procurements are concrete poles and PVC pipes for undergrounding. These are transported from factory in Phnom Penh to the sites directly.

a) The third countries' products

Country of origin (the third countries) / last assembling countries / procurement countries (the third countries) → out ports → (marine transportation) → Sihanoukville Port → (land transportation) → sites

b) Local procurement products

Phnom Penh → (land transportation) → sites

3) Transportation

a) Third country products

Country of origin (third country) / last assembling ground / procurement country (third country) → Truck (transportation by land) → Container out ports → containership (marine transportation) → Container Sihanoukville Port → truck (land transportation) → site

b) Local procurement products

Factory → truck (land transportation) → site

(2) Construction plan

The work of the construction details according to the procurement plan are as follows.

- The examination of procurement products for unpacking, number, assembling
- Installation and construction
- Adjustment (operation check, performance test)
- Test working (electricity)
- Inspection, delivery

1) Construction plan

The examination of procurement products for unpacking, number, installation and construction of supply of electric power facilities are conducted. The concrete poles, electric wires, the transformer and the undergrounding cables are installed. LBSs, transformers and lightning arresters shall also be installed.

2) Adjustment

Adjustment after the installation / delivery shall be done.

(3) Inspection, and checking

After inspection of quantities of goods arrived at the port, equipment and materials are delivered to the project sites. It is maintained by the Contractor. The Contractor is responsible for the deficiency of the products installed.

2.2.4.7 Operational Guidance Plan

Initial training and operation instructions will be given to support EDC engineers who are engaged in the O&M of distribution network. This is sustainably attained by the transfer of technical knowledge through the Project. By this training, it is expected that EDC engineers will be able to completely perform O&M works themselves including initiating appropriate countermeasures against any troubles and suitable management of manuals and drawings.

1) Guidance Instructor and Trainees

Guidance instructors are engineers from the Contractor. Trainees are manager of O&M (1 each area), operators (2-3 each area) and maintenance staff (2-3 each area).

2) Training contents

Each training contents are delivered through the lecture and practical training by instructors according to the O&M manual. Training program is as follows:

Table 2.2-20 Training Program on O&M Work

Items	Contents
1. General inspection of equipment	- Daily inspection (Appearance check) - Periodical inspection (insulation tests, change of fuse, etc.)
2. Emergency procedure and repairing method	- Explanation of electrical hazard and emergency operation and repairing method in each component
3. Replacement method	- Lecture on replacement method for replacement of defect and consumable parts
4. Explanation of equipment functions and drawings and related data	- Using "As built drawing, O/M manuals and related document", function of equipment to be checked referring the documents.

(Source: JICA Study Team)

2.2.5 Implementation Schedule

The implementation schedule for the Project is follows:

Table 2.2-21 Implementation Schedule

Work Items	Reference Month	Detailed Design and Tendering							Procurement/ Installation															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
Exchange of Note (E/N)		▼																						
Grant Agreement (G/A)		▼																						
Contract signing (Consultant)		▼																						
Detailed Design and Tendering																								
Detailed design (Filed survey)			■																					
Review of specification				■																				
Preparation of tender documents					■																			
Approval of tender documents						■																		
Tender publication							▼																	
Tender opening								▼																
Tender evaluation									■															
Contract signing (Contractor)										▼														
Procurement/ Installation																								
Preparation of documents and approval									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Manufacturing																								
Meetings																								
Product inspection by the Contractor																								
Pre-shipment inspection																								
Pre-shipment Inspection by an inspection agency																								
Shipping																								
Transportation																								
Bavet town of Svay Rieng Province																								
Route survey																								
Preparatory works																								
Digging, Pipe, Backfill work																								
Cable 22kV (underground) cable laying																								
Wire																								
Install concrete pole																								
Assembling, String																								
Install Load Break Switch																								
Install Distribution Transformer																								
Energizing / Test																								
Acceptance inspection /taking over																								
Poipet town of Banteay Meanchey Province																								
Route survey																								
Preparatory works																								
Digging, Pipe, Backfill work																								
Cable 22kV (underground) cable laying																								
Wire																								
Install concrete pole																								
Assembling, String																								
Install Load Break Switch																								
Energizing / Test																								
Acceptance inspection /taking over																								
Koh Kong town of Koh Kong Province																								
Route survey																								
Preparatory works																								
Digging, Pipe, Backfill work																								
Cable 22kV (underground) cable laying																								
Wire																								
Install concrete pole																								
Assembling, String																								
Install Load Break Switch																								
Energizing / Test																								
Acceptance inspection /taking over																								

2.3 OBLIGATIONS OF RECIPIENT COUNTRY

In the implementation of the Project, apart from the work responsibilities as outlined in 2-2-4-3 (Scope of Work), work items which will be implemented and undertaken by the Cambodia side are described as follows.

(1) Before the Tender

- To open Bank Account (Banking Arrangement (B/A))
- Securing of the Project site, Removal of the existing facilities and trees at the Project site
- Consulting with the residents in Svay Rieng and Bavet town where their residential or private business areas are built within ROW, and fully informing them to install the poles.
- Obtaining authorization for road crossing at each Project site, for the connection of distribution line to the REEs/Substation, as well as for installing the distribution line along the bridge in Svay Rieng and Koh Kong town.

(2) During the Project Implementation

- To bear the following commissions to a bank of Japan for the banking services based upon the B/A.
 - # Advising commission of A/P
 - # Payment commission for A/P
- To ensure prompt unloading and customs clearance at the port of recipient country
 - # Tax exemption and customs clearance of the products at the port of disembarkation
 - # Inland transportation from the port of disembarkation to the project site
- To accord Japanese nationals and/or physical persons of third countries whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.
- To ensure that customs duties, domestic taxes and other fiscal levies which may be imposed in the country of the Recipient with respect to the purchase of the Products and/or the Services be exempted;
Such customs duties, domestic taxes and other fiscal levies mentioned above include VAT, commercial tax, income tax and corporate tax of Japanese nationals, resident tax, fuel tax, etc., which may be imposed in the Recipient country with respect to the supply of the products and services under the verified contract.
- To bear all the expenses, other than those to be borne by the Grant Aid, necessary for construction of the facilities as well as for the transportation and installation of the equipment.
- To provide necessary data and information for the Project.
- To appoint engineers and skilled workers as the counterpart (C/P) in order to witness

inspections of equipment and materials and to transfer operation and maintenance skills under the Project.

- To provide the stockyard for equipment and materials, temporary work yard during construction period.
- To assure safety for construction-related personnel during the construction period and to contact the pedestrians, vehicles and consumers at the time of traffic restrictions, planned power outages or implementation of safety measures, if necessary.

(3) After the Project

To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid

- # Allocation of maintenance cost
- # Operation and maintenance structure
- # Routine check/Periodic inspection

2.4 PROJECT OPERATION PLAN

2.4.1 Basic Policy

EDC as the implementation agency of the Project is unique state-owned electric power company in Cambodia and operating generation, transmission and distribution. The facilities of the Project will be managed and operated by each provincial office except Koh Kong area where there is no EDC provincial office now. Therefore, Koh Kong area will be operated and managed by the neighboring EDC Sihanouk office.

It is the most important for management of distribution lines to find the fault, damage, broken facilities during the patrol and immediately repair them. In addition, it is necessary to cut the tree in advance in order to prevent the earthing fault caused by contact to the tree.

2.4.2 Management Organization

There are four divisions such as finance, administration, sales and technique in the EDC provincial office headed by the Chief. The technique division has distribution section which is in charge of operation and management of distribution system. Distribution section should assign enough staff members according to the amount of facilities so that additional facilities by the Project can be maintained.

2.5 PROJECT COST ESTIMATION

2.5.1 Initial Cost Estimation

In case the Project is executed under a grant aid, expenses to be borne by the Cambodian side are as follows:

(1) Expenses to be taken by the Cambodian side

0.0003 million US\$ (Approx. ¥0.01 million)

1) Advising commission of A/P based on B/A 0.0002 million US\$ (Approx. ¥0.01 million)

2) Payment commission for A/P based on B/A 0.0001 million US\$ (Approx. ¥0.01 million)

(2) Estimated Conditions

- 1) Date of estimation : November 2015
- 2) Foreign exchange rates : 1 US\$ = ¥ 122.20
- 3) Procurement and construction periods : The detailed design, equipment procurement and installation period are as shown in the project implementation schedule.
- 4) Others : The Project will be implemented in accordance with the grant aid scheme of the Government of Japan.

2.5.2 Operation and Maintenance Cost

The amount of facilities constructed by the Project is much smaller than existing distribution facilities managed by each provincial office. And the cost is only spare items for the broken items at the fault because there is no direct operation item for distribution system. Therefore, O&M cost is only spare items and EDC can afford enough cost in the current O&M budget.

CHAPTER 3

PROJECT EVALUATION

CHAPTER 3 PROJECT EVALUATION

3.1 PRECONDITIONS

The Cambodian side is required to confirm to bear / undertake the following administrative matters and arrangements.

- Acquiring construction permission required for the installation of underground cable for the distribution lines.
- Provision of temporary storage yard with gate and fence for all project sites.
- Appointment of engineers and skilled workers as the C/P in order to witness inspections of equipment and materials and to transfer operation and maintenance skills under the Project.
- Appointment of coordination engineers for connection of distribution line to REEs.

3.2 NECESSARY INPUTS BY RECIPIENT COUNTRY

- The current organization structure of EDC is to be maintained without any particular change.
- Constructing and operation of Chrak Mtes substation at Bavet as scheduled.
- Preparation of grid connection to Chrak Mtes substation and EDC Svay Rieng switching station at Bavet.
- Preparation of grid connection to IE substation and Banteay Meanchey substation at Poipet.
- Preparation of grid connection to Koh Kong SEZ at Koh Kong.

3.3 IMPORTANT ASSUMPTIONS

The following assumptions are crucial to produce and sustain the expected outputs and effects of the Project.

(1) Regarding the Overall Goal

- The rural electrification policy of Cambodia will not be changed.
- The politics and economy of Cambodia will remain stable.

(2) Regarding the Project Targets

- The operation and maintenance of the new equipment and systems will be continuously conducted in a proper manner.
- The security of the new distribution facilities will be maintained.

(3) Regarding the Project Outputs

- The distribution facilities will remain fully operational.
- The operation and maintenance plan will be properly implemented.

3.4 PROJECT EVALUATION

3.4.1 Relevance

The Project contributes to realization of developing plan and energy policy of Cambodia. In addition, the residences and public facilities can get benefits of enough power supply. Accordingly, the Project shows high viability.

3.4.2 Effectiveness

It is expected that enough power supply achieved by the expansion of distribution network improves the quality of residential life and leads to development of the regional economy.

(1) Quantitative effect

The amount of energy demand (energy sold to consumers) and the number of consumers are selected for indicators on determining the quantitative target values. Target year is fixed at 2021 three years after the Project completion.

The reference values are reported in EAC Annual Report 2014. The annual average increase rate of 10.0%* and 1.45%** are applied for estimation of the amount of energy sold to consumers and the number of consumers at 2021, respectively.

* Power Development Master Plan 2015, ** Inter Census 2013

Table 3.4-1 Quantitative Effect

Site	Name of Licensee	2014		2021	
		Energy Sold to consumers [MWh]	Number of consumers served	Energy Sold to consumers [MWh]	Number of consumers served
Svay Rieng	001-EDC Svay Rieng	125,804	17,694	245,157	19,583
	268-Khan Siden	1,267	5,287	2,469	5,852
	Total	127,071	22,981	247,626	25,435
Poipet	001-EDC Banteay Meanchey&Mongkul Borei	37,175	19,217	72,443	21,269
	011-Anco Brothers	65,972	8,881	128,560	9,829
	078-Pak Sun Heng	983	3,756	1,916	4,157
	257-Nhem Yan	445	2,510	866	2,778
	189-Phum Nimit	1,974	8,419	3,846	9,318
	337-Inn Pov	78	1,978	152	2,189
	389-Men Chansokol	-	-	-	-
Total	106,625	44,761	207,782	49,541	
Koh Kong	014-L.Y.P. Group Koh Kong	28,102	5,279	54,763	5,843
	370-Phat Sothea	48	190	94	210
	Total	28,150	5,469	54,857	6,053

(2) Qualitative effect**1) Benefit for SEZs**

The JICA Study Team studied condition of power supply by interviewing to the Japanese-affiliated companies in the SEZs. They told that blackout and instantaneous voltage drop had occurred at high frequently and these had obstructed their production activities. In addition, some of them fear current condition that they depends on the power supply from neighboring country because of political risk.

The Project contributes to enhance the national grid. If reliability for the power supply from national grid increases, attraction of enterprise and the employment are promoted and will lead to revitalization of the local economy.

The power quality of SEZs confirmed by interviews and expected effects for this issue are shown in below.

Table 3.4-2 Power Quality of SEZs from Interviews (1)

		Bavet			
		Manhattan SEZ	Tai Seng Bavet SEZ①	Tai Seng Bavet SEZ②	Dragon King SEZ
Summary of Power quality		Rolling blackouts 3 time/week, 10 ~ 100 time/day (Short time)	A lot of short time blackouts.	2 time/week	Rolling blackouts, 2 time/week(All day), A lot of short time blackout
Lack of the electric power supply amount	Black out (Long time)	Rolling blackouts 3 time/ week	1 time/week	2 times/week	2 times/week
Power Quality	Black out (Short time)	10~100 times/day	20~50times/day	Many times	Many times
	Voltage drop	Not confirmed	Not confirmed	Not confirmed	Not confirmed
Countermeasures by each customers	Diesel generator	None	400kW	250kVA	700kVA+250kVA
	Battery	500kVA	None	None	None
	Others	Shift the working hours to the night time	-	-	-
Overseas dependency of the electric power supply (present power source)		From Vietnam	From Vietnam	From Vietnam	From Vietnam

Table 3.4-3 Power Quality of SEZs from Interviews (2)

		Poipet		Koh Kong
		SANCO SEZ	SC WADO	Koh Kong SEZ
Summary of Power quality		Summary of Power quality	Blackout: 2 ~ 3 times/week (10 minute each)	Normal
Black out (Long time)	Black out (Long time)	None	None	None
Black out (Short time)	Black out (Short time)	None	2 ~ 3 times/week (10 minute each)	None
Voltage drop	Voltage drop	Not confirmed	It's occurred in the last year, but it's no problem in this year.	It's occurred in the last year, but it's no problem in this year.
Diesel generator Battery Others	Diesel generator	None.	1,500kVA+1,200 kVA	
	Battery	None.	None.	None.
	Others	-	-	-
Overseas dependency of the electric power supply (present power source)		Overseas dependency of the electric power supply (present power source)	In Cambodia	From Thailand

Table 3.4-4 Expected Effects for the Power Quality of SEZs by the Project

Items	Cause	Expected effects by the Project
Lack of the electric power supply amount (Long time black out)	Serious lack of the electric power supply amount including the distribution facility in those area.	Large improvement can be expected in Bavet especially.
Low power quality (Short time black out)	Auto Recloser installed in front of each SEZ is moved by an overload (Source: EDC head office).	Basically power smoothing control in SEZ is required, but the improvement of power supply (MW) to SEZ also can be expected.
Overseas dependency of the electric power supply	Lack of electric power supply amount in those area.	Improvement can be expected in Bavet and Koh Kong.

2) Benefit for public

The JICA Study Team visited to Chiphu Referral Hospital constructed by UNICEF and BUY RANY HUN SEN CHIPHU PRIMARY SCHOOL located were along the National Highway No.1 in Bavet.

Power supply is available, but their indoors were dark even in the day time. The reason of low illumination was not confirmed, but enough power supply has possibility to improve the hygiene environment.



Photo 3.4-1 Primary School in Bavet



Photo 3.4-2 Hospital in Bavet

APPENDICES

- Appendix 1 : Member List of the Study Team
- Appendix 2 : Schedule of the Study
- Appendix 3 : List of Parties concerned in the Recipient Country
- Appendix 4 : Minutes of Discussions
- Appendix 5 : Environmental Check List
- Appendix 6 : Monitoring Form
- Appendix 7 : Minutes and Attendance Lists of Stakeholder Meetings
- Appendix 8 : Voltage Drop Study Details of Each Distribution Line
- Appendix 9 : List of Collected Data and Documents
- Appendix 10 : Route Map of Bavet
- Appendix 11 : Route Map of Poipet (1)
- Appendix 12 : Route Map of Poipet (2)
- Appendix 13 : Route Map of Koh Kong
- Appendix 14 : Chrak Mtes Substation
- Appendix 15 : EDC Svay Rieng Switching Station
- Appendix 16 : IE Substation
- Appendix 17 : Banteay Meanchey Substation
- Appendix 18 : MV Pole Arrangement

APPENDIX 1

MEMBER LIST OF THE STUDY TEAM

APPENDIX 1 : MEMBER LIST OF THE STUDY TEAM

Name	Work Assignment	Position	1st Survey	2nd Survey	3rd Survey	4th Survey
Mr. Kazunari OSHIMA	Team Leader	Senior Advisor, JICA		○	○	
Ms. Yuki MASUYA	Planning Management	Program Officer, Energy and Mining Group, Industrial Development and Public Policy Department, JICA		○	○	
Mr. Kenichiro YAGI	Chief Consultant/ Distribution Planning	NEWJEC Inc.	○	○	○	○
Mr. Yuzuru OKADA	Deputy Chief Consultant/ Power Flow Analysis	The CHUGOKU Electric Power Co., Inc.	○	○	○	
Mr. Junya SHINOHARA	Distribution Facility	The CHUGOKU Electric Power Co., Inc.	○	○	○	
Mr. Ryosuke ISHII	Construction Planning/ Condition Survey	NEWJEC Inc.	○	○	○	
Ms. Yoshiko OISHI	Environmental and Social Consideration	NEWJEC Inc.	○	○	○	○
Mr. Ryotaro MIYAUCHI	Material and Equipment Procurement Planning/ Cost Estimate	NEWJEC Inc.	○	○		

APPENDIX 2

SCHEDULE OF THE STUDY

APPENDIX 2 : SCHEDULE OF THE STUDY

1ST SITE VISIT

Date	Day	Consultant						
		Chief Consultant/ Distribution Planning	Deputy Chief Consultant/ Power Flow Analysis	Distribution Facility	Construction Planning/ Consition Survey	Environmetal and Social Consideration	Material and Equipment Procurement Planning/ Cost Estimate	
		Mr. Kenichiro YAGI	Mr. Yusuru OKADA	Mr. Junya SHINOHARA	Mr. Ryosuke ISHII	Ms. Yoshiko OISHI	Mr. Ryotaro MIYUCHI	
1	2015/9/20	Sun	Depature from Kansai, Arrive at Phnom Penh					
2	2015/9/21	Mon	Courtesy call on EDC and MME	Data collection at JETRO and EDC	Same as Mr. YAGI	Same as Mr. OKADA		
3	2015/9/22	Tue	<ul style="list-style-type: none"> •Courtesy call on EAC •Meeting with EDC and data collection. •Data collection at Phnom Penh SEZ Co., LTD 					
4	2015/9/23	Wed	<ul style="list-style-type: none"> •Move to Bavet •Meeting with EDC Svay Rieng office and data colleciton •Hearing to NISSEY (CAMBODIA) CO., LTD (Dragon King SEZ) and YORKS (CAMBODIA) CO., Ltd. (Tai Seng Bavet SEZ2) 					
5	2015/9/24	Thu	<ul style="list-style-type: none"> •Route Survey •Hearing to MORIFUJI (CAMBODIA) CO., LTD. (Manhattan SEZ) 					
6	2015/9/25	Fri	<ul style="list-style-type: none"> •Hearing to Nakayama (Cambodia) Co., LTD (Tai Seng Bavet SEZ1) •Move to Phnom Penh •Courtesy call on EOJ and JICA 					
7	2015/9/26	Sat	Move to Siem Reap					
8	2015/9/27	Sun	Reporting					
9	2015/9/28	Mon	<ul style="list-style-type: none"> •Move to Poipet •Meeting with EDC Banteay Meanchey Branch and data colleciton •Route Survey 					
10	2015/9/29	Tue	<ul style="list-style-type: none"> •Route Survey •Hearing to Sanco Cambo Investment Group Co., LTD (Sanco Poi Pet SEZ) 					
11	2015/9/30	Wed	<ul style="list-style-type: none"> •Hearing to SC WADO Component (Cambodia) Co., Ltd. •Move to Phnom Penh 					
12	2015/10/1	Thu	Reporting and Data colleciton					
13	2015/10/2	Fri	Reporting and Data colleciton					
14	2015/10/3	Sat	Meeting with EDC					
15	2015/10/4	Sun	Move to Koh Kong					
16	2015/10/5	Mon	<ul style="list-style-type: none"> •Route Survey •Hearing to Yazaki (CAMBODIA) Co., LTD. (Koh Kong SEZ) 					
17	2015/10/6	Tue	<ul style="list-style-type: none"> •Hearing to LY YONG PHAT Group Co., LTD •Move to Phnom Penh 					
18	2015/10/7	Wed	Reporting and Data colleciton					
19	2015/10/8	Thu	Reporting and Data colleciton					
20	2015/10/9	Fri	<ul style="list-style-type: none"> •Report to JICA office •Departure from Phnom Penh 					
21	2015/10/10	Sat	Arrive at Kansai					
22	2015/10/11	Sun	Site Survey					
23	2015/10/12	Mon	Site Survey					
24	2015/10/13	Tue	<ul style="list-style-type: none"> •Site Survey •Move to Phnom Penh 					
25	2015/10/14	Wed	Data colleciton at EDC					
26	2015/10/15	Thu	Move to Koh Kong					
27	2015/10/16	Fri	Site Survey					
28	2015/10/17	Sat	Site Survey					
29	2015/10/18	Sun	Move to Phnom Penh					
30	2015/10/19	Mon	Meeting with EDC					
31	2015/10/20	Tue	Move to Poipet					
32	2015/10/21	Wed	Site Survey					
33	2015/10/22	Thu	Site Survey					
34	2015/10/23	Fri	Move to Phnom Penh					
35	2015/10/24	Sat	<ul style="list-style-type: none"> •Reporting •Depature from Phnom Penh 					
36	2015/10/25	Sun	Arrive at Kansai					

2ND SITE VISIT

Date	Day	JICA		Consultant								
		Team Leader	Planning Management	Chief Consultant / Distribution Planning	Deputy Chief Consultant / Power Flow Analysis	Distribution Facility	Construction Planning / Conditon Survey	Environmental and Social Consideration	Material and Equipment Procurement Planning / Cost Estimate			
		Mr. Kazunari OSHIMA	Ms. Yuki MASUYA	Mr. Kenichro YAGI	Mr. Yuzuru OKADA	Mr. Junya SHINOHARA	Mr. Ryosuke ISHII	Ms. Yoshiko OISHI	Mr. Ryotaro MIYAUCHI			
1	2015/12/6	Sun	Departure from Haneda, Arrive at Phnom Penh		Departure from Kansai, Arrive at Phnom Penh						Same as Mr. Oshima	
2	2015/12/7	Mon	• Courtesy call on JICA • Courtesy call on EDC		←	←	←	←	←	←		
3	2015/12/8	Tue	• Meeting with EDC • Courtesy call on MME		• Meeting with EDC • Move to Bavet and discussion with EDC Svay Rieng office	←	←	←	• Discussion with SEPRO • Move to Bavet and discussion with EDC Svay Rieng office	Same as Mr. Yagi		
4	2015/12/9	Wed	• Move to Bavet and Route Survey • Move to Phnom Penh		• Route Survey • Move to Phnom Penh	←	←	Site survey	Hearing to relevant authorities	Same as Mr. Yagi		
5	2015/12/10	Thu	Move to Battambang		←	←	←	Stakeholder Meeting	←	Same as Mr. Yagi		
6	2015/12/11	Fri	• Move to PoiPet and Site Survey • Move to Siem Reap		• Move to PoiPet and Site Survey • Move to Phnom Penh	←	←	Site Survey	←	Same as Mr. Yagi		
7	2015/12/12	Sat	• Site visit (C3, 4 diesel plant) • Move to Phnom Penh and Documentation		Reporting and Internal Meeting	←	←	Move to Phnom Penh and Internal Meeting	←	Data compliation		
8	2015/12/13	Sun	Move to Koh Kong		←	←	←	Move to Poi Pet	←	Data compliation		
9	2015/12/14	Mon	• Site Survey • Move to Phnom Penh and discussion of draft MM		←	←	←	Site Survey	Hearing to relevant authorities	Market survey, request for quotations		
10	2015/12/15	Tue	• Meeting with EDC • Report to EOJ • Report to JICA office • Departure from Phnom Penh		• Meeting with EDC • Report to EOJ	←	←	Stakeholder Meeting and Site Survey	Stakeholder Meeting and hearing to relevant authorities	Market survey, request for quotations		
11	2015/12/16	Wed	Arrive at Haneda		Move to Poi Pet and Internal Meeting	←	←	Site Survey and Internal Meeting	←	Market survey, request for quotations		
12	2015/12/17	Thu	/		Site Survey and Move to Phnom Penh	←	←	←	←	Market survey, request for quotations		
13	2015/12/18	Fri					Move to Bavet and Site Survey	←	←	←	Hearing to relevant authorities at Svay Rieng	Market survey, request for quotations
14	2015/12/19	Sat					Reporting	←	←	Move to Koh kong	Move to Koh kong	Data compliation
15	2015/12/20	Sun					Reporting	←	←	Site Survey	Site Survey	Data compliation
16	2015/12/21	Mon					• Move to Koh kong • Survey for Sihanoukville • Site Survey	←	←	Site Survey	Hearing to relevant authorities	Same as Mr. Yagi
17	2015/12/22	Tue					Move to Phnom Pen	←	←	Reporting	Reporting	Same as Mr. Yagi
18	2015/12/23	Wed					• Meeting with JICA office • Meeting with EAC	←	←	Reporting	Reporting	Same as Mr. Yagi
19	2015/12/24	Thu					Internal Meeting, Reporting and Meeting with Local Contractor	Internal Meeting and Reporting	Internal Meeting and Reporting	• Stakeholder Meeting • Move to Phnom Penh	←	Internal Meeting, Reporting
20	2015/12/25	Fri					• Meeting with EDC • Report to JICA office • Departure from Phnom Penh				Same as Mr. Yagi	
21	2015/12/26	Sat					Arrive at Kansai				Arrive at Haneda	

3RD SITE VISIT

Date	Day	JICA		Consultant					
		Team Leader	Planning Management	Chief Consultant / Distribution Planning	Deputy Chief Consultant / Power Flow Analysis	Distribution Facility	Construction Planning / Condition Survey	Environmental and Social Consideration	
		Mr. Kazunari OSHIMA / JICA	Ms. Yuki MASUYA / JICA	Mr. Kenichro YAGI / NEWJEC Inc.	Mr. Yuzuru OKADA / CHUGOKU Inc.	Mr. Junya SHINOHARA / CHUGOKU Inc.	Mr. Ryosuke ISHII / NEWJEC Inc.	Ms. Yoshiko OISHI / NEWJEC Inc.	
1	2016/5/8	Sun	Departure from Haneda, Arrive at Phnom Penh		Departure from Kansai, Arrive at Phnom Penh				
2	2016/5/9	Mon	Courtesy call on JICA, EDC and MME		•Courtesy call on JICA and EDC •Discussion on 2nd SHM with EDC	Same as Mr. OSHIMA	←	•Courtesy call on JICA and EDC •Reporting	Same as Mr. YAGI
3	2016/5/10	Tue	•Explanation of DOD to EDC •Courtesy call on EOJ		←	←	←	•Explanation of DOD to EDC •Reporting	←
4	2016/5/11	Wed	•Discussion on MM with EDC •MM signing		←	←	←	←	←
5	2016/5/12	Thu	•Report to JICA •Departure from Phnom Penh		Discussion on 2nd SHM with EDC	Site Survey (Bavet)	←	←	Same as Mr. YAGI
6	2016/5/13	Fri	Arrive at Haneda						
7	2016/5/14	Sat			•Reporting •Departure from Phnom Penh Arrive at Kansai				

4TH SITE VISIT

Date	Day	Consultant		
		Chief Consultant / Distribution Planning	Environmental and Social Consideration	
		Mr. Kenichro YAGI / NEWJEC Inc.	Ms. Yoshiko OISHI / NEWJEC Inc.	
1	2016/5/23	Mon	Departure from Kasai Arrive at Phnom Penh	
2	2016/5/24	Tue	Meeting with EDC Go to Bavet	
3	2016/5/25	Wed	2nd SHM at Bavet	
4	2016/5/26	Thu	Go to Poipet	
5	2016/5/27	Fri	2nd SHM at Poipet	
6	2016/5/28	Sat	Go to Phnom Penh	
7	2016/5/29	Sun	Go to Koh Kong	
5	2016/5/30	Mon	2nd SHM at Koh Kong Go to Phnom Penh	
6	2016/5/31	Tue	Reporting Departure from Phnom Penh	
7	2016/6/1	Wed	Arrive at Kansai	

APPENDIX 3

LIST OF PARTIES CONCERNED IN THE RECIPIENT COUNTRY

APPENDIX 3 : LIST OF PARTIES CONCERNED IN THE RECIPIENT COUNTRY

Ministry of Land Management, Urban Planning & Construction

Mr. Thong Ohsotheary	Director, Department of Land Management, Urban Planning & Construction, Svay Rieng
Mr. Roth Charn	Deputy Director, Department of Land Management, Urban Planning & Construction, Svay Rieng
Mr. Ro Bora	Deputy Director, Department of Land Management, Urban Planning & Construction, Poipet
Mr. Hang Rindy	Chief , Administration Office, Department of Land Management, Urban Planning & Construction, Poipet
Mr. Ros Viravuth	Director, Department of Land Management, Urban Planning & Construction, Koh Kong

Ministry of Public Works and Transport

Mr. Kim PisethISETH	Director, Department of Public Works and Transport, Svay Rieng
Mr. Ou Sophakdey	Deputy Director, Department of Public Works and Transport, Svay Rieng
Mr. Kong Bunloeth	Deputy Director, Department of Public Works and Transport, Poipet
Mr. Ly Sareth	Director, Department of Public Works and Transport, Koh Kong

Ministry of Environment

Mr. Roeut Sanocan	Director, Department of Environment, Svay Rieng
Mr. Tuon Sregrnatha	Deputy Director, Department of Environment, Svay Rieng
Mr. Omchantra	Deputy Director, Department of Environment, Poipet
Mr. Yok Yoenrm	Deputy Chief of EIIA Office, Department of Environment, Svay Rieng
Mr. Man Phala	Director, Department of Environment, Koh Kong

Ministry of Agriculture, Forestry and Fisheries

Mr. Omaliss Keo	Director, Department of Wildlife and Biodiversity
Mr. Om Mactheary	Director, Department of Agriculture, Forestry and Fisheries, Koh Kong

Ministry of Water Resources and Meteorology

Mr. Klok Sam Ang	Director, Department of Planning and International Cooperation Assistant Project of PMO
Mrs. Tep Phollarath	Vice chief of Climate Office, Department of Meteorology
Ms. Peou Phalla	Deputy Director of Climate Office, Department of Meteorology

Ministry of Mines and Energy

Mr. Victor Jona	Director General, General Department of Energy
Mr. Siyon Pech	Director, Department of Mines and Energy, Koh Kong

Electricity Authority of Cambodia

Mr. Yim Viseth	Director, Supply and Consumer Affairs Department
Mr. Nong Rithya	Manager, Supply office

Electricité du Cambodge

Dr. Chulasa Praing	Deputy Managing Director
Mr. Chun Piseth	Director of Corporate Planning and Projects Department
Mr. Rann Seihakiray	Deputy Director, Corporate Planning and Projects Department
Mr. Thach Sovannreasey	Chief, System Analysis & Geography Information System Office (SA & GIS)
Mr. Mao Visal	Chief of Social, Environmental and Public Relation Office

Phnom Penh SEZ Co., Ltd / Phnom Penh SEZ

Mr. Hiroshi Uematsu	CEO
---------------------	-----

NISSEY (CAMBODIA) CO., LTD / Dragon King SEZ

Mr. Tomiyuki Arai	President
-------------------	-----------

YORKS (CAMBODIA) CO., LTD / Tai Seng Bavet SEZ(2)

Mr. Koji Yashiro	Managing Director
------------------	-------------------

MOROFUJI (CAMBODIA) CO., LTD / Manhattan SEZ

Mr. Ryortaro Watanabe	
-----------------------	--

Nakayama (Cambodia) Co., Ltd / Tai Seng Bavet SEZ(1)

Mr. Yukio Higashimoto	President
-----------------------	-----------

SANCO CAMBODIA INVESTMENT GROUP CO., LTD / Sanco SEZ

Mr. Tomoshige Yamada	SEZ General Manager
----------------------	---------------------

SC WADO Component (Cambodia) Co., Ltd. / Nearby Sanco SEZ

Mr. Hisayuki Yanai	Admin Director
--------------------	----------------

Yazaki (CAMBODIA) PRODUCTS CO., LTD. / Koh Kong SEZ

Mr. Kenji Uematsu	Director, Cambodia Projects Leader
-------------------	------------------------------------

L.Y.P. GROUP CO., LTD

H. E. Ly Yong Phat	President and CEO
Mr. Supharoek Suphapha	Manager, Electricity

Embassy of Japan

Mr. Yoshikazu Hasunuma	First Secretary
------------------------	-----------------

Japan External Trade Organization

Mr. Takatomo Ito	Senior Investment Advisor
Mr. Shigesada Imai	Deputy Director

Japan International Cooperation Agency, Cambodia Office

Mr. Ito Takashi	Senior Representative
Mr. Toshikazu Watanabe	Representative
Mr. Taro Tanzaki	Project Formulation Advisor (Partnership with the Private Sector)

APPENDIX 4

MINUTES OF DISCUSSIONS

Minutes of Discussions
on the Preparatory Survey for the Project for
Southern Economic Corridor Distribution Expansion Project
in the Kingdom of Cambodia

In response to the request from the Royal Government of Cambodia (hereinafter referred to as "Cambodia"), the Government of Japan decided to conduct a Preparatory Survey for Southern Economic Corridor Distribution Expansion Project (hereinafter referred to as "the Project"), and entrusted the Preparatory Survey to Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent the Preparatory Survey Team for the Outline Design (hereinafter referred to as "the Team") to Cambodia, headed by Kazunari Oshima, Senior Advisor JICA, and is scheduled to stay in the country from 6 to 15 December, 2015.



The Team held a series of discussions with the EDC counterparts concerned of the Project and conducted a field survey in the Project area. In the course of the discussions, both sides have confirmed the main items described in the attached sheets. The Team will proceed to further works and prepare the Preparatory Survey Report.

Phnom Penh, 15 December, 2015



Kazunari Oshima
Leader
Preparatory Survey Team
Japan International Cooperation Agency
Japan



Keo Rottanak
RGC Delegate in charge of Managing  
Electricité du Cambodge (EDC)
Cambodia

ATTACHEMENT

1. Objective of the Project

The objective of the Project is to enhance the stability of power supply in the areas around Special Economic Zones (SEZs) along the Southern Economic Corridor by constructing main distribution lines, thereby contributing to support business activities in SEZs as well as to rural electrification near SEZs.

2. Title of the Preparatory Survey

Both sides confirmed the title of the Preparatory Survey as “the Preparatory Survey for the Project for Southern Economic Corridor Distribution Expansion Project”.

3. Project Site

Both sides confirmed that the sites of the Project are Bavet town of Svay Rieng province, Poipet and neighboring towns of Banteay Meanchey province and Koh Kong town of Koh Kong province which are shown in Annex 1.

4. Line Agency and Executing Agency

Both sides confirmed the line agency and executing agency as follows:

- 4-1. The line agency is Ministry of Mines and Energy (MME) , which would be the agency to supervise the executing agency.
- 4-2. The executing agency is Electricité du Cambodge (EDC) . The executing agency shall coordinate with all the relevant agencies to guarantee smooth implementation of the Project and make sure that the undertakings are taken by relevant agencies properly and punctually. The organization charts are shown in Annex 2.

5. Items requested by the Royal Government of Cambodia.

- 5-1. As a result of discussions, both sides confirmed that the items requested by the Royal Government of Cambodia are as follows:

Bavet:

- | | |
|---|---------|
| • Underground Cable XLPE, 3 × 300mm ² Single Circuit | 1.5km |
| • Underground Cable XLPE, 3 × 300mm ² 5 Circuits | 0.3km |
| • Overhead Line 240mm ² Double Circuit | 9km |
| • Overhead Line 240mm ² Single Circuit | 26.6km |
| • Distribution Transformer from 100kVA to 400kVA | 26units |
| • Load Breaking Switch | 5units |

Poipet:



• Underground Cable XLPE, 3×300mm ² Single Circuit	0.4km
• Underground Cable XLPE, 3×240mm ² Single Circuit	0.5km
• Overhead Line 240mm ² Single Circuit	31.5km
• Overhead Line 150mm ² Single Circuit	7.0km
• Load Breaking Switch	4units

Koh Kong

• Underground Cable XLPE, 3 × 300mm ² Single Circuit	1.8km
• Overhead Line 240mm ² Single Circuit	12.8km
• Load Breaking Switch	4units

The locations and routes of the requested distribution lines are as shown in Annex 1. Above quantities are tentative.

5-2. JICA will assess the appropriateness of the above requested items through the survey and will report findings to the Government of Japan. The final components of the Project would be decided by the Government of Japan.

6. Japanese Grant Scheme

6-1. The Cambodian side understands the Japanese Grant Scheme and its procedures as described in Annex 3 and Annex 4, and necessary measures to be taken by the Royal Government of Cambodia.

6-2. The Cambodian side understands to take the necessary measures, as described in Annex 6, for smooth implementation of the Project, as a condition for the Japanese Grant to be implemented. The detailed contents of the Annex 6 will be worked out during the survey and shall be agreed by the Explanation of the Draft Preparatory Survey Report.

The contents of Annex 6 will be used to determine the following:

- (1) The scope of the Project.
- (2) The timing of the Project implementation.
- (3) Timing and possibility of budget allocation.

Contents of Annex 6 will be updated as the Preparatory Survey progresses, and will finally be the Attachment to the Grant Agreement.

7. Schedule of the Survey

7-1. The Team will proceed with further survey in Cambodia until 25 December, 2015.

7-2. JICA will prepare a draft Preparatory Survey Report in English and dispatch a mission to Cambodia in order to explain its contents around May 2016.

7-3. If the contents of the draft Preparatory Survey Report is accepted in principle and the Undertakings are fully agreed by the Cambodian side, JICA will complete the final report in English and send it to Cambodia around September 2016.

7-4. The above schedule is tentative and subject to change.

8. Environmental and Social Considerations

- 8-1. The Cambodian side confirmed to give due environmental and social considerations during implementation of the Project, and after completion of the Project, in accordance with the JICA Guidelines for Environmental and Social Considerations (April, 2010).
- 8-2. The Project is categorized as B because the Project is not located in a sensitive area, nor has it sensitive characteristics, nor falls it into sensitive sectors under the Guidelines, and its potential adverse impacts on the environment are not likely to be significant.

9. Other Relevant Issues

9-1. Update on other donors' activities

The Cambodian side confirmed to update the progress of the construction of Chrak Mtes Substation (115kV/22kV) financially supported by Chinese loan as well as the construction of Koh Kong City Substation (230kV /22kV) financially supported by AFD's loan.

9-2. Arrangements of obtaining required authorization

The Cambodian side agreed to make the following arrangements:

- Obtaining authorization for road crossing at each Project site, for the connection of distribution line to the Rural Electricity Enterprises (REEs)/Substation, as well as for installing the distribution line along the bridge in Svay Rieng and Koh Kong town by August 2016.
- Consulting with the residents in Svay Rieng and Bavet town where their residential or private business areas are built within Right of Way (RoW), and fully informing them to install the poles. The consultation with the residents shall start no later than May 2016.

Annex 1 Project Site

Annex 2 Organization Chart

Annex 3 Japanese Grant

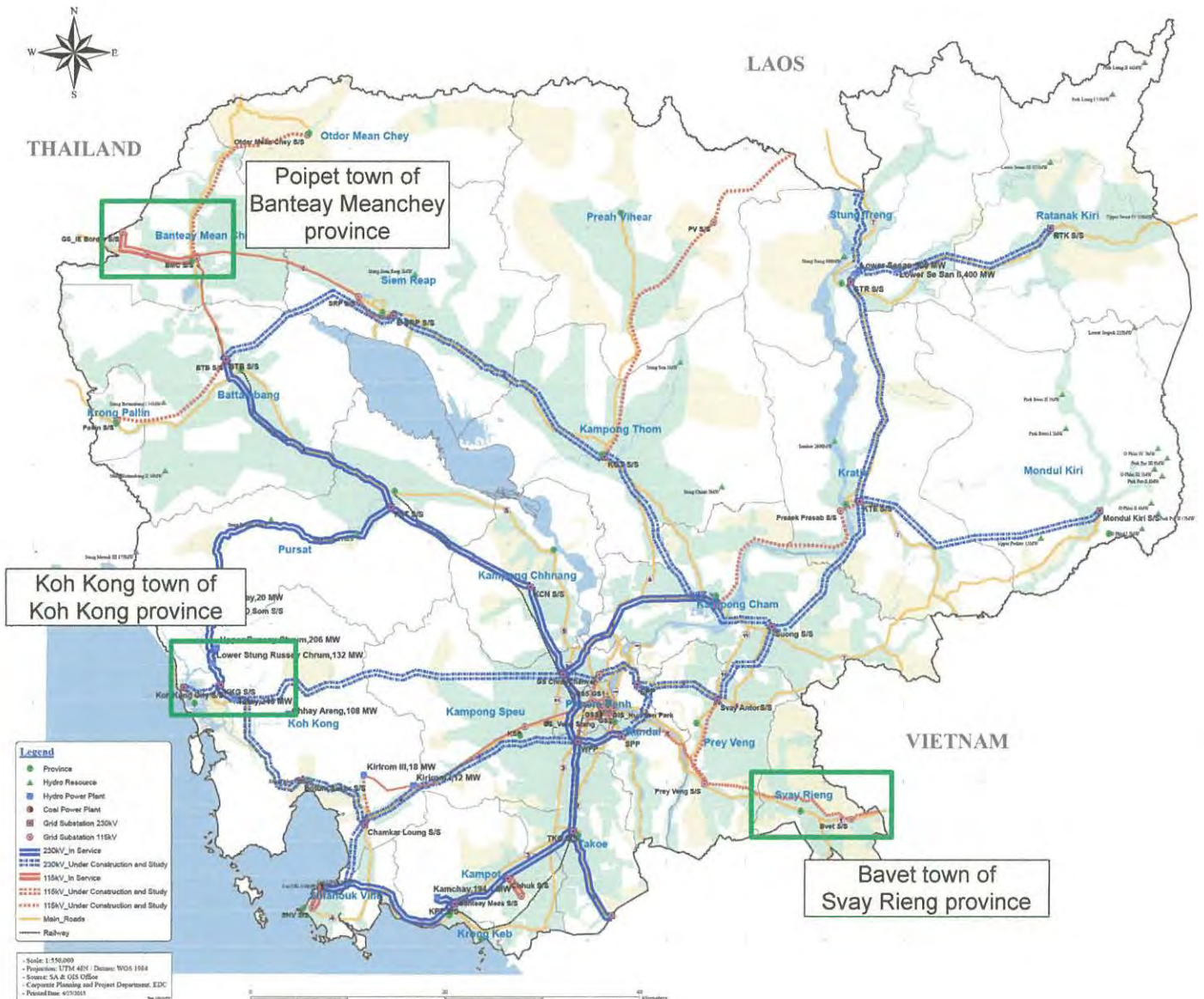
Annex 4 Flow Chart of Japanese Grant Procedures

Annex 5 Financial Flow of Japanese Grant

Annex 6 Major Undertakings to be taken by Each Government

Annex 7 Project Monitoring Report (template)

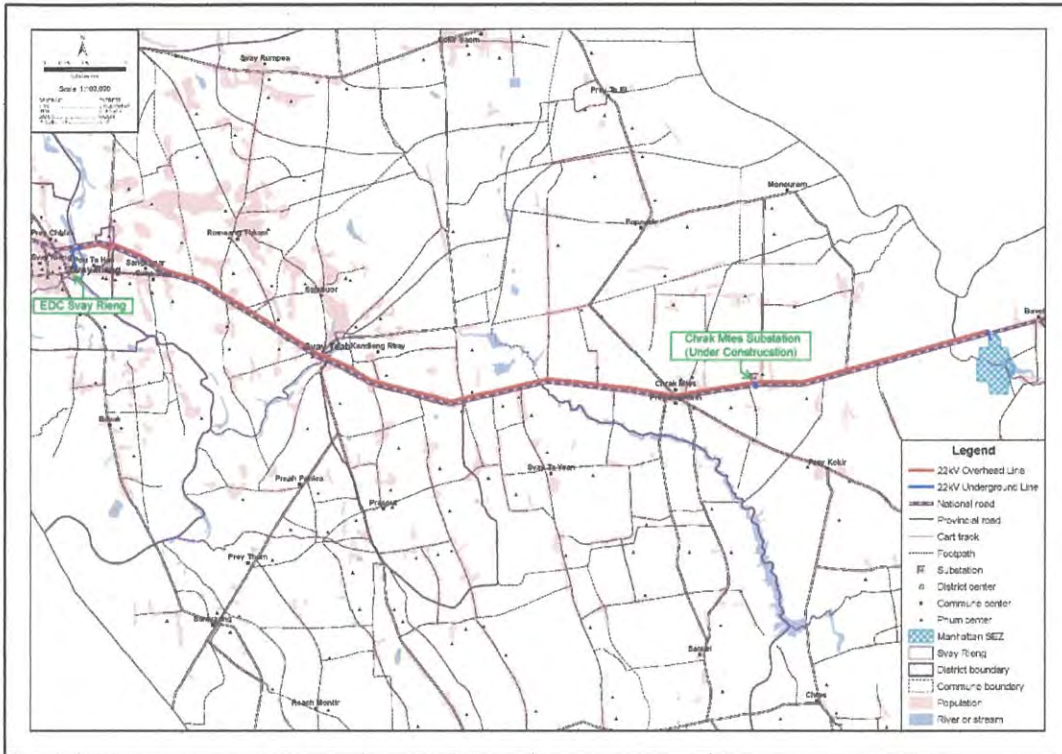




Handwritten signature

Handwritten mark

Bavet Town of Svay Rieng Province



Required components

- | | |
|---|---------|
| • Underground Cable XLPE, 3 × 300mm ² Single Circuit | 1.5km |
| • Underground Cable XLPE, 3 × 300mm ² 5 Circuits | 0.3km |
| • Overhead Line 240mm ² Double Circuit | 9km |
| • Overhead Line 240mm ² Single Circuit | 26.6km |
| • Distribution Transformer from 100kVA to 400kVA | 26units |
| • Load Breaking Switch | 5units |

Handwritten signature

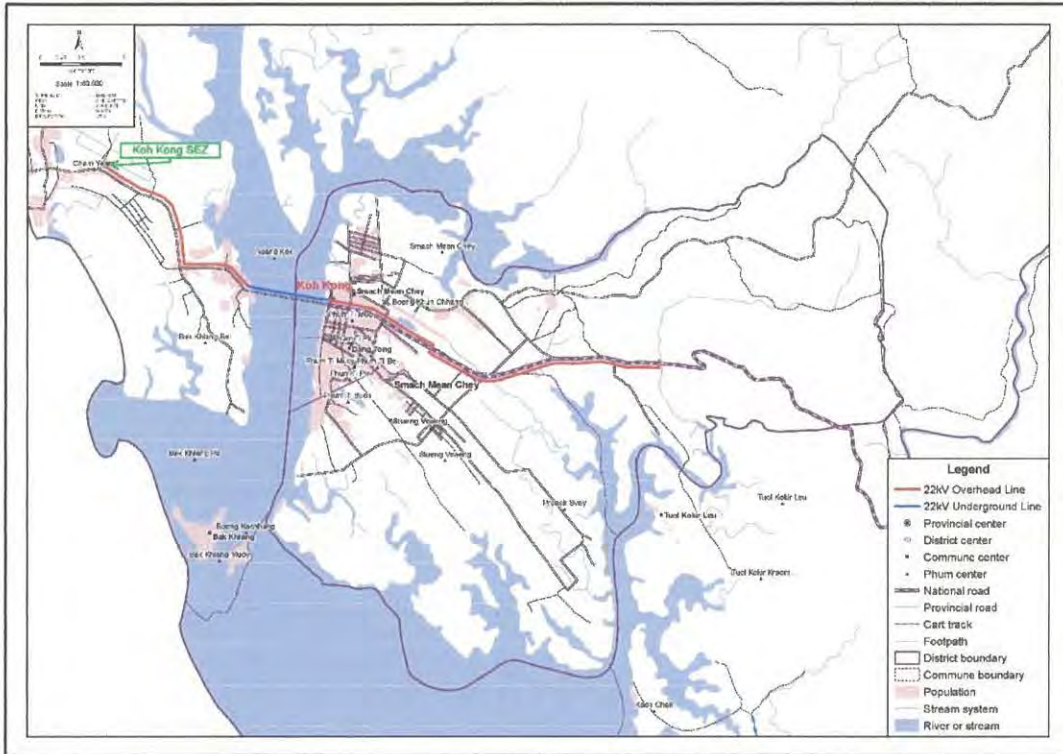
Poipet Town of Banteay Meanchey Province



Required components

- Underground Cable XLPE, 3×300mm² Single Circuit 0.4km
- Underground Cable XLPE, 3×240mm² Single Circuit 0.5km
- Overhead Line 240mm² Single Circuit 31.5km
- Overhead Line 150mm² Single Circuit 7.0km
- Load Breaking Switch 4units

Koh Kong Town of Koh Kong Province



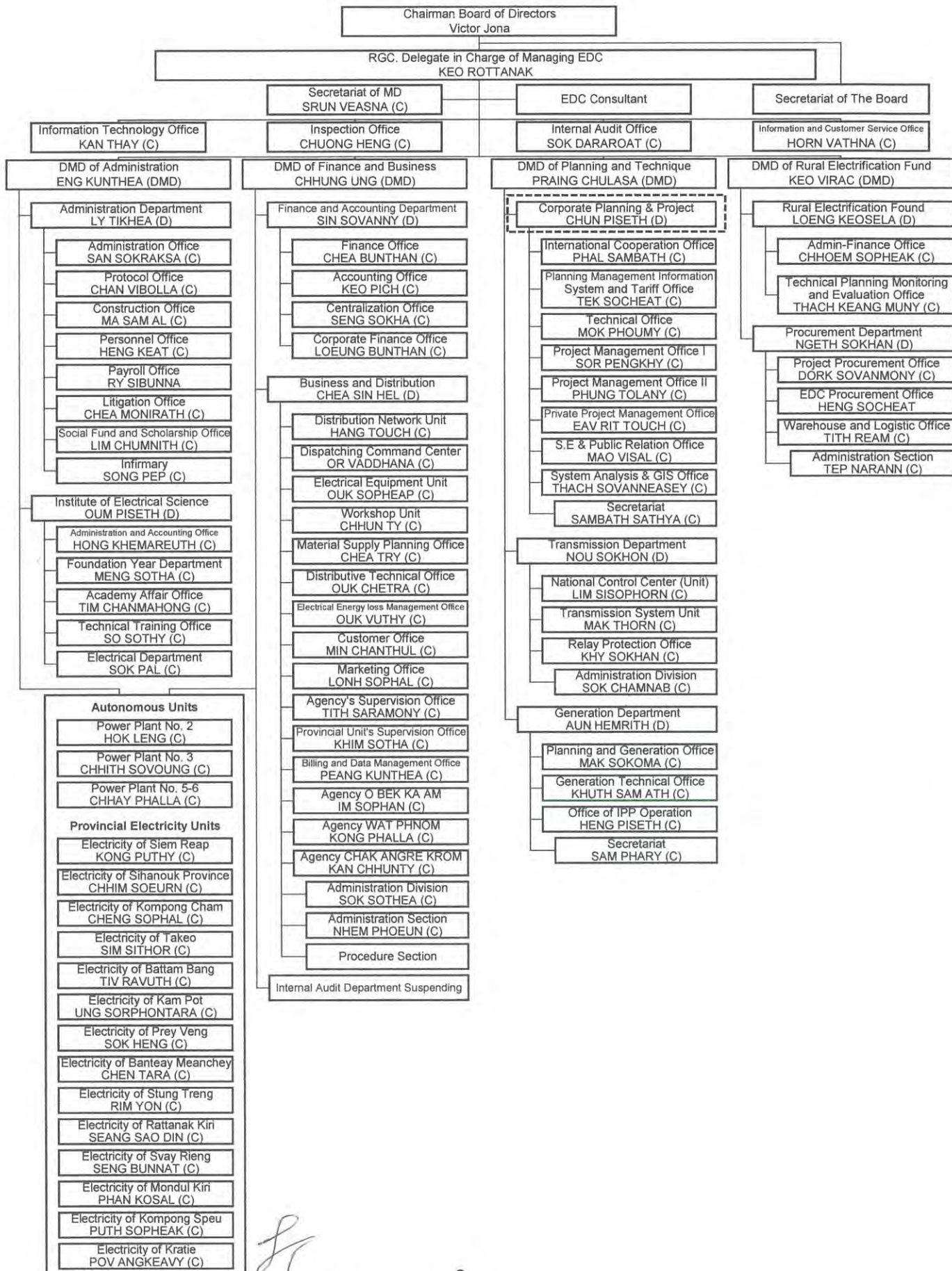
Required components

- Underground Cable XLPE, $3 \times 300\text{mm}^2$ Single Circuit 1.8km
- Overhead Line 240mm^2 Single Circuit 12.8km
- Load Breaking Switch 4units

Handwritten signature



Organization Chart (EDC)



Handwritten signature

Annex 3 Japanese Grant

The Japanese Grant (hereinafter referred to as the “Grant”) is non-reimbursable fund provided to a recipient country to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for its economic and social development in accordance with the relevant laws and regulations of Japan. The Grant is not supplied through the donation of materials as such.

Based on a JICA law which was entered into effect on October 1, 2008 and the decision of the GOJ, JICA has become the executing agency of the Japanese Grant for Projects for construction of facilities, purchase of equipment, etc.

1. Grant Procedures

The Grant is supplied through following procedures :

- Preparatory Survey
 - The Survey conducted by JICA
- Appraisal & Approval
 - Appraisal by the GOJ and JICA, and Approval by the Japanese Cabinet
- Authority for Determining Implementation
 - The Notes exchanged between the GOJ and a recipient country
- Grant Agreement (hereinafter referred to as “the G/A”)
 - Agreement concluded between JICA and a recipient country
- Implementation
 - Implementation of the Project on the basis of the G/A

2. Preparatory Survey

(1) Contents of the Survey

The aim of the preparatory Survey is to provide a basic document necessary for the appraisal of the Project made by the GOJ and JICA. The contents of the Survey are as follows:

- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of relevant agencies of the recipient country necessary for the implementation of the Project.
- Evaluation of the appropriateness of the Project to be implemented under the Grant Scheme from a technical, financial, social and economic point of view.
- Confirmation of items agreed between both parties concerning the basic concept of the Project.
- Preparation of an outline design of the Project.
- Estimation of costs of the Project.

The contents of the original request by the recipient country are not necessarily approved in their initial form as the contents of the Grant project. The Outline Design of the Project is confirmed based on the guidelines of the Japanese Grant scheme.

JICA requests the Government of the recipient country to take whatever measures necessary to achieve its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization of the recipient country which actually implements the

Project.

Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country based on the Minutes of Discussions.

(2) Selection of Consultants

For smooth implementation of the Survey, JICA employs (a) consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms.

(3) Result of the Survey

JICA reviews the Report on the results of the Survey and recommends the GOJ to appraise the implementation of the Project after confirming the appropriateness of the Project.

3. Japanese Grant Scheme

(1) The E/N and the G/A

After the Project is approved by the Cabinet of Japan, the Exchange of Notes(hereinafter referred to as “the E/N”) will be signed between the GOJ and the Government of the recipient country to make a pledge for assistance, which is followed by the conclusion of the G/A between JICA and the Government of the recipient country to define the necessary articles, in accordance with the E/N, to implement the Project, such as payment conditions, responsibilities of the Government of the recipient country, and procurement conditions.

(2) Selection of Consultants

In order to maintain technical consistency, the consulting firm(s) which conducted the Survey will be recommended by JICA to the recipient country to continue to work on the Project’s implementation after the E/N and G/A.

(3) Eligible source country

Under the Grant, in principle, Japanese products and services including transport or those of the recipient country are to be purchased. The Grant may be used for the purchase of the products or services of a third country, if necessary, taking into account the quality, competitiveness and economic rationality of products and services necessary for achieving the objective of the Project. However, the prime contractors, namely, constructing and procurement firms, and the prime consulting firm are limited to "Japanese nationals", in principle.

(4) Necessity of "Verification"

The Government of the recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals, in principle. Those contracts shall be verified by JICA. This "Verification" is deemed necessary to fulfill accountability to Japanese taxpayers.

(5) Major undertakings to be taken by the Government of the Recipient Country

In the implementation of the Grant Project, the recipient country is required to undertake such necessary measures as Annex. The Japanese Government requests the Government of the recipient country to exempt all customs duties, internal taxes and other fiscal levies such as VAT, commercial tax, income tax, corporate tax, resident tax, fuel tax, but not limited, which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract, since the Grant fund comes from the Japanese taxpayers.



(6) "Proper Use"

The Government of the recipient country is required to maintain and use properly and effectively the facilities constructed and the equipment purchased under the Grant, to assign staff necessary for this operation and maintenance and to bear all the expenses other than those covered by the Grant.

(7) "Export and Re-export"

The products purchased under the Grant should not be exported or re-exported from the recipient country.

(8) Banking Arrangements (B/A)

a) The Government of the recipient country or its designated authority should open an account under the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"), in principle. JICA will execute the Grant by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.

b) The payments will be made when payment requests are presented by the Bank to JICA under an Authorization to Pay (A/P) issued by the Government of the recipient country or its designated authority.

(9) Authorization to Pay (A/P)

The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commissions paid to the Bank.

(10) Environmental and Social Considerations

The Government of the recipient country must carefully consider environmental and social impacts by the Project and must comply with the environmental regulations of the recipient country and JICA Guidelines for Environmental and Social Consideration (April, 2010) .

(11) Monitoring

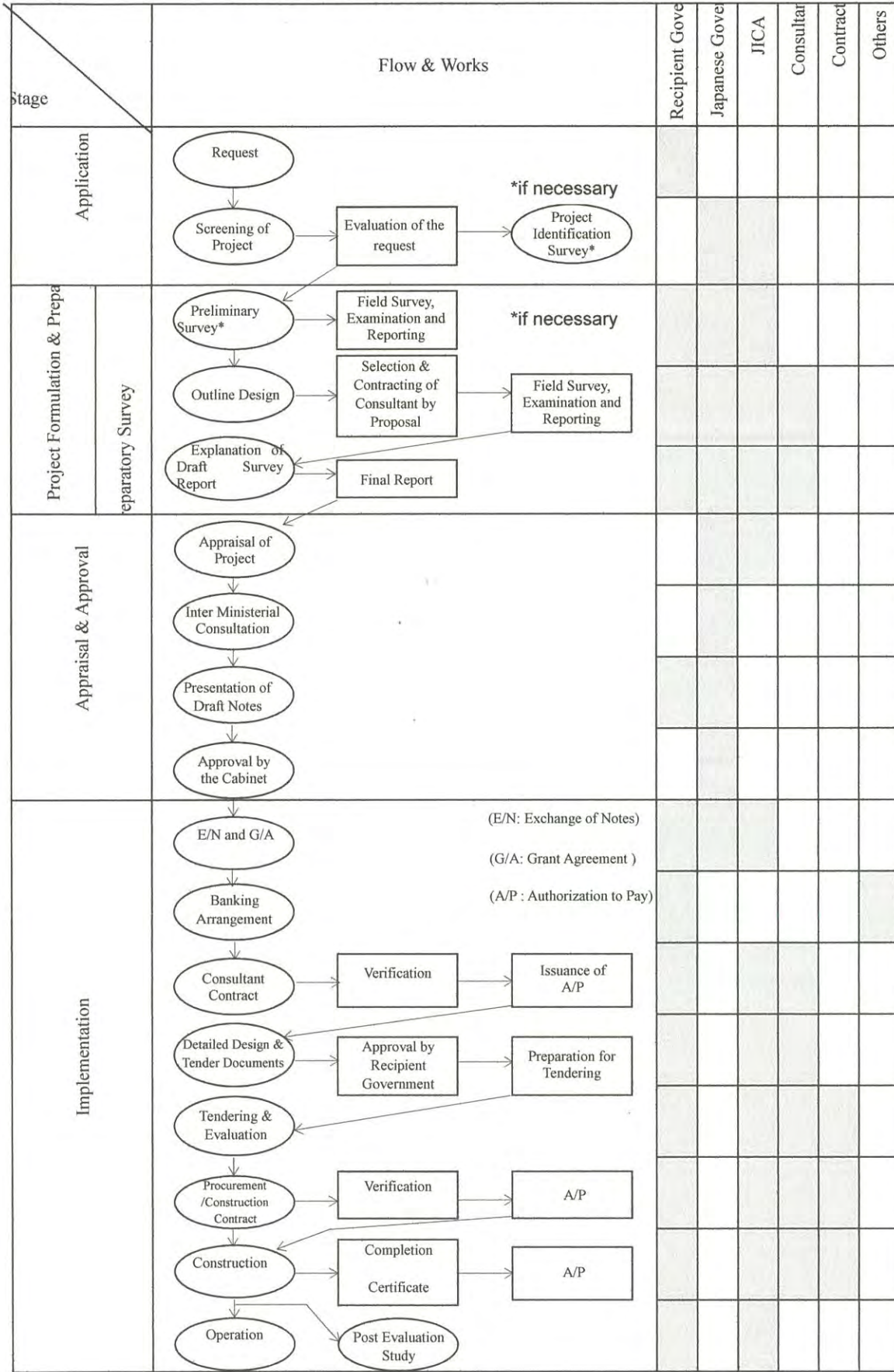
The Government of the recipient country must take their initiative to carefully monitor the progress of the Project in order to ensure its smooth implementation as part of their responsibility in the G/A, and must regularly report to JICA about its status by using the Project Monitoring Report (PMR).

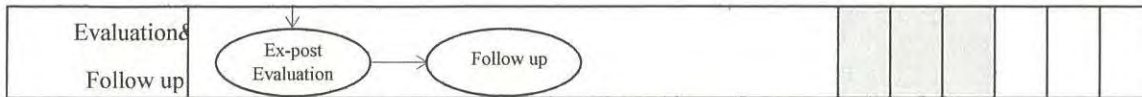
(12) Safety Measures

The Government of the recipient country must ensure that the safety is highly observed during the implementation of the Project.



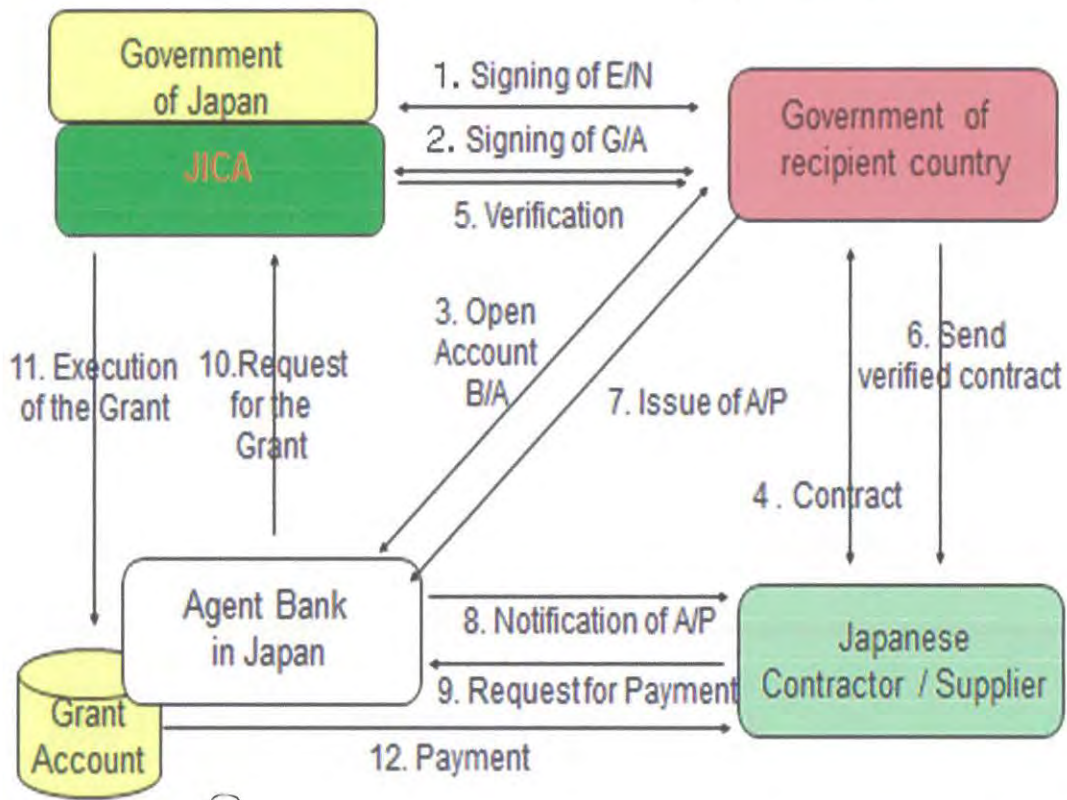
Annex-4 FLOW CHART OF JAPANESE GRANT PROCEDURES





Annex 5 Financial Flow of Japanese Grant Aid

Financial Flow of Grant Aid (A/P Type)



Handwritten signature



Annex-6 Major Undertakings to be taken by Each Government
Major Undertakings to be Covered by the Cambodian side

1. Before the Tender

NO	Items	Deadline	In charge	Cost	Ref.
1	To open Bank Account (Banking Arrangement (B/A))	within 1 month after G/A			
2	Securing of the Project site, Removal of the existing facilities and trees at the Project site,	before notice of the tender document			

2. During the Project Implementation

NO	Items	Deadline	In charge	Cost	Ref.
1	To bear the following commissions to a bank of Japan for the banking services based upon the B/A				
	1) Advising commission of A/P	within 1 month after the signing of the contract			
	2) Payment commission for A/P	every payment			
2	To ensure prompt unloading and customs clearance at the port of disembarkation in recipient country				
	1) Tax exemption and customs clearance of the products at the port of disembarkation	during the Project			
	2) Internal transportation from the port of disembarkation to the project site	during the Project			
3	To accord Japanese nationals and/or physical persons of third countries whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work	during the Project			
4	To ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the country of the Recipient with respect to the purchase of the Products and/or the Services be exempted; Such customs duties, internal taxes and other fiscal levies mentioned above include VAT, commercial tax, income tax and corporate tax of Japanese nationals, resident tax, fuel tax, but not limited, which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract	during the Project			
5	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for construction of the facilities as well as for the transportation and installation of the equipment	during the Project			

3. After the Project

NO	Items	Deadline	In charge	Cost	Ref.
1	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid	After completion of the construction			
	1) Allocation of maintenance cost				
	2) Operation and maintenance structure				
	3) Routine check/Periodic inspection				

Major Undertakings to be Covered by the Japanese Grant

No	Items	Deadline	Cost Estimated (Million Japanese Yen)*	
1	To construct facility and provide equipment		XX.XX	
	1) To ensure prompt unloading and customs clearance at the port of disembarkation in recipient country			
	a) Marine(Air) transportation of the products from Japan to the recipient country			
	b) Internal transportation from the port of disembarkation to the project site			
	2) To construct facilities			
	3) To provide equipment with installation and commissioning			
2	To implement detailed design, tender support and construction supervision (Consultant)			
3	Contingencies			
	Total			

*The cost estimates are provisional. This is subject to the approval of the Government of Japan.



Project Monitoring Report
on
Project Name
Grant Agreement No. XXXXXXXX
20XX, Month

Organization Information

Authority (Signer of the G/A)	<p>Person in Charge _____ (Division) _____</p> <p>Contacts Address: _____ Phone/FAX: _____ Email: _____</p>
Executing Agency	<p>Person in Charge _____ (Division) _____</p> <p>Contacts Address: _____ Phone/FAX: _____ Email: _____</p>
Line Agency	<p>Person in Charge _____ (Division) _____</p> <p>Contacts Address: _____ Phone/FAX: _____ Email: _____</p>

Outline of Grant Agreement:

Source of Finance	Government of Japan: Not exceeding JPY _____ mil. Government of (_____): _____
Project Title	
E/N	Signed date: Duration:
G/A	Signed date: Duration:

[Handwritten signature]

[Handwritten mark]

1: Project Description

1-1 Project Objective

--

1-2 Necessity and Priority of the Project

- Consistency with development policy, sector plan, national/regional development plans and demand of target group and the recipient country.

--

1-3 Effectiveness and the indicators

- Effectiveness by the project

Quantitative Effect (Operation and Effect indicators)		
Indicators	Original (Yr)	Target (Yr)
Qualitative Effect		

2: Project Implementation

2-1 Project Scope

Table 2-1-1a: Comparison of Original and Actual Location

Location	Original: (M/D) Attachment(s):Map	Actual: (PMR) Attachment(s):Map

Table 2-1-1b: Comparison of Original and Actual Scope

Items	Original	Actual
(M/D)	(M/D)	(PMR) Please state not only the most updated schedule but also other past revisions chronologically.

Handwritten signature

Handwritten mark

'Soft component' shall be included in 'Items'.		All change of design shall be recorded regardless of its degree.
--	--	--

(Sample)Table 2-1-1b: Comparison of Original and Actual Scope

Items	Original	Actual
1. Upgrading of the Kukum Highway	length 20km, single lane (3.47m*2), path(1.25m*2) Concrete Pavement 200mm (motor lane only)	length 20km, single lane (3.47m*2), path(1.00m*2) Concrete Pavement 200mm (motor lane only)
2. Replacement of Old Mataniko Bridge	Bridge length 40m, Width 9.5m, path(1.00m*2), compound steel box-girder bridge, Inverted T type-abutment spread foundation	Ditto

(Sample)Table 2-1-1b: Comparison of Original and Actual Scope

Items	Original	Actual
1. Outpatient Department	RC, Double Storey Ground floor: Consultation room 6 Reception Satellite Lab. Pharmacy, etc 1 st floor: Consultation room 5 Dental Clinic 2	RC, Double Storey Ground floor: Consultation room 5 ditto
2. Operation Theatre, Casualty Unit, Maternity Ward	RC, Double Storey Ground Floor: Operation room 2 Casualty Unit 1 st Floor: Maternity Ward 50 beds	ditto Maternity Ward 60 beds

(Sample)Table 2-1-1b: Comparison of Original and Actual Scope

Items	Original	Actual
1. Primary and Secondary Surveillance Radars at Chittagong Int'l Airport	i) OSR/SSR 1 set ii) RDP 1 set iii) VHF Transmitters 2 sets	Ditto
2. Access Control System for Dhaka Int'l Airport	1 set	Ditto
3. Doppler VOR/DME at Saidpur Airport	1 set	Ditto
4. Aerodrome Simulator for Civil Aviation Training Center	1 set	Ditto

5. Baggage Inspection System for Dhaka Int'l Airport	i) Hold Baggage Xray Inspectin system 7sets ii) Hold Baggage Explosive Trace Detecting System 7sets iii) Cabin Baggage Xray Inspection System 2sets	Ditto
6. Airport Fire Fighting Vehicles for Dhaka Int'l Airport	2 sets	3 sets

2-1-2 Reason(s) for the modification if there have been any.

(PMR)

2-2 Implementation Schedule

2-2-1 Implementation Schedule

Table 2-2-1: Comparison of Original and Actual Schedule

Items	Original		Actual
	DOD	G/A	
[M/D] 'Soft component' shall be stated in the column of 'Items'. Project Completion Date*	(M/D)		(PMR) As of (Date of Revision) Please state not only the most updated schedule but also other past revisions chronologically.

*Project Completion was defined as _____ at the time of G/A.

(Sample)Table 2-2-1: Comparison of Original and Actual Schedule

Items	Original		Actual
	DOD	G/A	
Cabinet Approval	11/2015	-	-
E/N	12/2015	1/2016	24/1/2016
G/A	12/2015	1/2016	24/1/2016 Amended 13/3/2017
Detailed Design	12/2015-4/2016	1/2016-5/2016	1/2016-5/2016
Tender Notice	5/2016	5/2016	1/6/2016
Tender	6/2016	6/2016	15/7/2016
(Lot1) Construction Period	7/2016-11/2018	7/2016-11/2018	8/8/2016-30/11/2018
(Lot2) Installarion of Equipment	7/2016-6/2018	7/2016-6/2018	6/8/2016-30/60/2017

Project Completion Date	11/2018	11/2018	30/11/2018
Defect Liability Period	11/2019	11/2019	30/11/2019

*Project Completion was defined as Check-out of Construction work at the time of G/A.

2-2-2 Reasons for any changes of the schedule, and their effects on the project.

2-3 Undertakings by each Government

2-3-1 Major Undertakings
 See Attachment 2.

2-3-2 Activities
 See Attachment 3.

2-3-3 Report on RD
 See Attachment 4.

2-4 Project Cost

2-4-1 Project Cost

Table 2-4-1a Comparison of Original and Actual Cost by the Government of Japan
 (Confidential until the Tender)

Items	Cost (Million Yen)			
	Original	Actual	Original	Actual
Construction Facilities (or Equipment)	'Soft component' shall be included in 'Items'.			Please state not only the most updated schedule but also other past revisions chronologically.
Consulting Services	- Detailed design - Procurement Management - Construction Supervision			
Total				

Note: 1) Date of estimation:
 2) Exchange rate: 1 US Dollar = Yen

Table 2-4-1b Comparison of Original and Actual Cost by the Government of XX

Items	Cost (Million USD)			
	Original	Actual	Original	Actual
				Please state not only the most

				updated schedule but also other past revisions chronologically.
Total				

Note: 1) Date of estimation:
2) Exchange rate: 1 US Dollar = (local currency)

(Sample)Table 2-4-1a Comparison of Original and Actual Cost by the Government of Japan
(Confidential until the Tender)

Items			Cost (Million Yen)	
	Original	Actual	Original ^(1,2)	Actual
Construction Facilities	1. Outpatient Department 2. Operation Theatre, Casualty Unit, Maternity Ward	Ditto Ditto	1,169.5	1,035.0
Equipment	1) Primary and Secondary Surveillance Radars at Chittagong Int'l Airport 2) Access Control System for Dhaka Int'l Airport 3) Doppler VOR/DME at Saidpur Airport 4) Aerodrome Simulator for Civil Aviation Training Center 5) Baggage Inspection System for Dhaka Int'l Airport 6) Airport Fire Fighting Vehicles for Dhaka Int'l Airport	Ditto	2,374.6	2,110.0
Consulting Services	- Detailed design - Procurement Management - Construction Supervision - Soft Component	Ditto	0.87	0.87
Total			3544.97	3145.87

Note: 1) Date of estimation: October, 2014
2) Exchange rate: 1 US Dollar = 99.93 Yen

(Sample)Table 2-4-1b Comparison of Original and Actual Cost by the Government of Bangladesh

Items			Cost (1,000 Taka)	
	Original	Actual	Original ^(1,2)	Actual
Dhaka International Airport	Modification of software of existing Rader Data Processing System	Ditto	8,000	9,240
	Provision of a partition, lighting, air conditioning and electric power supply at transfer hold baggage check point	Ditto	5,000	2,453

	Replacement of five doors in the international passenger terminal building	Ditto	4,000	5,340
Chittagong Int'l Airport	Preparation of the radar site including felling of trees, clearing and grabbing	Ditto	5,000	3,400
Total			22,000	20,433

Note: 1) Date of estimation: October, 2014
 2) Exchange rate: 1 US Dollar = 0.887 Bangladesh Taka (local currency)

2-4-2 Reason(s) for the wide gap between the original and actual, if there have been any, the remedies you have taken, and their results.

(PMR)

2-5 Organizations for Implementation

2-5-1 Executing Agency:

- Organization's role, financial position, capacity, cost recovery etc,
- Organization Chart including the unit in charge of the implementation and number of employees.

Original: (M/D)

Actual, if changed: (PMR)

2-6 Environmental and Social Impacts

- The results of environmental monitoring as attached in Attachment 5 in accordance with Schedule 4 of the Grant Agreement.
- The results of social monitoring as attached in Attachment 5 in accordance with Schedule 4 of the Grant Agreement.
- Information on the disclosed results of environmental and social monitoring to local stakeholders, whenever applicable.

3: Operation and Maintenance (O&M)

3-1 O&M and Management

- Organization chart of O&M
- Operational and maintenance system (structure and the number, qualification and skill of staff or other conditions necessary to maintain the outputs and benefits of the project soundly, such as manuals, facilities and equipment for maintenance, and spare part stocks etc)

Original: (M/D)
Actual: (PMR)

3-2 O&M Cost and Budget

- The actual annual O&M cost for the duration of the project up to today, as well as the annual O&M budget.

Original: (M/D)

4: Precautions (Risk Management)

- Risks and issues, if any, which may affect the project implementation, outcome, sustainability and planned countermeasures to be adapted are below.

Original Issues and Countermeasure(s): (M/D)	
Potential Project Risks	Assessment
1.	Probability: H/M/L
(Description of Risk)	Impact: H/M/L
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action during the Implementation:
	Contingency Plan (if applicable):
2.	Probability: H/M/L
(Description of Risk)	Impact: H/M/L
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action during the Implementation:
	Contingency Plan (if applicable):

3. (Description of Risk)	Probability: H/M/L
	Impact: H/M/L
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action during the Implementation:
	Contingency Plan (if applicable):
Actual issues and Countermeasure(s)	
(PMR)	

5: Evaluation at Project Completion and Monitoring Plan

5-1 Overall evaluation

Please describe your overall evaluation on the project.

5-2 Lessons Learnt and Recommendations

Please raise any lessons learned from the project experience, which might be valuable for the future assistance or similar type of projects, as well as any recommendations, which might be beneficial for better realization of the project effect, impact and assurance of sustainability.

5-3 Monitoring Plan for the Indicators for Post-Evaluation

Please describe monitoring methods, section(s)/department(s) in charge of monitoring, frequency, the term to monitor the indicators stipulated in 1-3.

Handwritten signature



Attachment

1. Project Location Map
2. Undertakings to be taken by each Government
3. Monthly Report
4. Report on RD
5. Environmental Monitoring Form / Social Monitoring Form
6. Monitoring sheet on price of specified materials (Quarterly)
7. Report on Proportion of Procurement (Recipient Country, Japan and Third Countries)
(Final Report Only)



Monitoring sheet on price of specified materials

1. Initial Conditions (Confirmed)

	Items of Specified Materials	Initial Volume A	Initial Unit Price (¥) B	Initial total Price C=A×B	1% of Contract Price D	Condition of payment	
						Price (Decreased) E=C-D	Price (Increased) F=C+D
1	Item 1	●●t	●	●	●	●	●
2	Item 2	●●t	●	●	●		
3	Item 3						
4	Item 4						
5	Item 5						

2. Monitoring of the Unit Price of Specified Materials

(1) Method of Monitoring : ●●

(2) Result of the Monitoring Survey on Unit Price for each specified materials

	Items of Specified Materials	1st ●month, 2015	2nd ●month, 2015	3rd ●month, 2015	4th	5th	6th
1	Item 1						
2	Item 2						
3	Item 3						
4	Item 4						
5	Item 5						

(3) Summary of Discussion with Contractor (if necessary)

.

.

.

.



Report on Proportion of Procurement (Recipient Country, Japan and Third Countries)
 (Actual Expenditure by Construction and Equipment each)

	Domestic Procurement (Recipient Country) A	Foreign Procurement (Japan) B	Foreign Procurement (Third Countries) C	Total D
Construction Cost	(A/D%)	(B/D%)	(C/D%)	
Direct Construction Cost	(A/D%)	(B/D%)	(C/D%)	
others	(A/D%)	(B/D%)	(C/D%)	
Equipment Cost	(A/D%)	(B/D%)	(C/D%)	
Design and Supervision Cost	(A/D%)	(B/D%)	(C/D%)	
Total	(A/D%)	(B/D%)	(C/D%)	



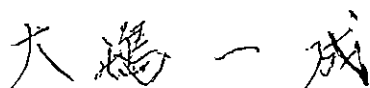
Minutes of Discussions
on the Preparatory Survey for the Project for
Southern Economic Corridor Distribution Expansion Project
in the Kingdom of Cambodia
(Explanation on Draft Preparatory Survey Report)

Based on the discussions and field survey in the Royal Government of Cambodia (hereinafter referred to as " Cambodia ") in September and December, 2015, and the subsequent technical examination of the results, the Japan International Cooperation Agency (hereinafter referred to as "JICA") prepared a draft Preparatory Survey Report on the Project for Southern Economic Corridor Distribution Expansion Project (hereinafter referred to as "the Draft Report").

In order to explain the Draft Report and to consult with the concerned officials of the Royal Government of Cambodia on its contents, JICA sent to Cambodia the Preparatory Survey Team for the explanation of the Draft Report (hereinafter referred to as "the Team"), headed by Mr. Kazunari Oshima, Senior Advisor, Industrial Development and Public Policy Department, JICA, and is scheduled to stay in the country from 8th to 12th May, 2016.



As a result of the discussions, both sides confirmed the main items described in the attached sheets.

Phnom Penh, 11th May, 2016



Kazunari Oshima
Leader
Preparatory Survey Team
Japan International Cooperation Agency
Japan



Keo Rottanak
RGC Delegate in charge of Managing 
Electricité du Cambodge (EDC) 
Cambodia

ATTACHEMENT

1. Objective of the Project

The objective of the Project is to enhance the stability of power supply in the areas around Special Economic Zones (SEZs) along the Southern Economic Corridor by constructing main distribution lines, thereby contributing to support business activities in SEZs as well as to rural electrification near SEZs.

2. Title of the Preparatory Survey

Both sides confirmed the title of the Preparatory Survey will be revised as “the Preparatory Survey for the Project for Expansion of Distribution Lines in Southern Economic Corridor”.

3. Project Site

Both sides confirmed that the sites of the Project are Bavet town of Svay Rieng province, Poipet and neighboring towns of Banteay Meanchey province and Koh Kong town of Koh Kong province which are shown in Annex 1.

4. Line Agency and Executing Agency

Both sides confirmed the line agency and executing agency as follows:

4-1. The line agency is Ministry of Mines and Energy (MME) , which would be the agency to supervise the executing agency.

4-2. The executing agency is Electricité du Cambodge (EDC) . The executing agency shall coordinate with all the relevant agencies to guarantee smooth implementation of the Project and make sure that the undertakings are taken by relevant agencies properly and in a timely manner. The organization charts are shown in Annex 2.

5. Contents of the Draft Report

After the explanation of the contents of the Draft Report by the Team, the Cambodian side agreed in principle to its contents.

6. Cost Estimation

Both sides confirmed that the Project cost estimation described in the Draft Report is provisional and would be examined further by the Government of Japan for its final approval. The project cost estimation is shown in Annex 3.



7. Confidentiality of the Cost Estimation and Specifications

Both sides confirmed that the Project cost estimation and technical specifications in the Draft Report should never be duplicated or disclosed to any third parties until all the contracts of the Project are concluded.

8. Japanese Grant Scheme

The Cambodian side understands the Japanese Grant Scheme and its procedures as described in Annex 4, 5 and 6, and necessary measures to be taken by Cambodian side.

9. Project Implementation Schedule

The Team explained to the Cambodian side that the expected implementation schedule is as attached in Annex 7.

10. Expected outcomes and Indicators

Both sides agreed that key indicators for expected outcomes are as follows. The Cambodian side has responsibility to monitor the progress of the indicators and achieve the target in year 2021.

[Quantitative Effect]

Indicators	Reference Value 【Actual in 2014】	Target by 2021 【after 3 years of Commencement】
Energy Sold to consumers (MWh/year)	127,071 (Bavet)	247,626 (Bavet)
	106,625 (Poipet)	207,782 (Poipet)
	28,150 (Koh Kong)	54,857 (Koh Kong)
Number of consumers served (Household)	22,981 (Bavet)	25,435 (Bavet)
	44,761 (Poipet)	49,541 (Poipet)
	5,469 (Koh Kong)	6,053 (Koh Kong)

[Qualitative Effect]

Stabilization of power supply, Sustainable economic growth

11. Undertakings Taken by Both Sides

Both sides confirmed the undertakings described in Annex 8. The Cambodian side assured to take the necessary measures and coordination including allocation of the

necessary budget which are preconditions of implementation of the Project. It is further agreed that the costs are indicative, i.e. at Outline Design level.

12. Monitoring during the Implementation

The Project will be monitored every 3 months by the executing agency and using the Project Monitoring Report (PMR). The template of PMR is shown in Annex 9.

13. Ex-Post Evaluation

JICA will conduct ex-post evaluation three (3) years after the project completion with respect to five evaluation criteria (Relevance, Effectiveness, Efficiency, Impact, Sustainability) of the Project. Result of the evaluation will be publicized. The Cambodian side is required to provide necessary support for them.

14. Schedule of the Study

JICA will complete the Final Report of the Preparatory Survey in accordance with the confirmed items and send it to the Cambodian side around September 2016.

15. Environmental and Social Considerations

15-1 Environmental Guidelines and Environmental Category

The Team explained that 'JICA Guidelines for Environmental and Social Considerations (April 2010)' (hereinafter referred to as 'the Guidelines') is applicable for the Project. The Project is categorized as B because the Project is not located in a sensitive area, nor has it sensitive characteristics, nor falls it into sensitive sectors under the Guidelines, and its potential adverse impacts on the environment are not likely to be significant.

15-2 Second Stakeholder Meeting

Both sides confirmed the necessity of holding the second stakeholder meetings mainly to explain the context of environmental and social consideration to the residents of project sites, in order to meet the minimum requirement of the Guidelines. The Cambodian side agreed to provide the following:

- Dispatch of at least one personnel to the site during the stakeholder meeting
- Provision of prior notice to the local stakeholders and residents along the distribution line of the project on stakeholder meetings
- Translation of presentation materials

15-3 Environmental Checklist

The environmental and social considerations including major impacts and mitigation measures for the Project are summarized in the Environmental Checklist attached as Annex 10. Both sides confirmed that in case of major modification of the content of the Environmental Checklist, Cambodian side shall submit the modified version to JICA in a timely manner.

15-4 Environmental Management Plan and Environmental Monitoring Plan

Both sides confirmed Environmental Management Plan (EMP) and Environmental Monitoring Plan (EMoP) of the Project attached as Annex 11. Both sides agreed that environmental mitigation measures and monitoring shall be conducted based on the EMP and EMoP, which may be updated during the detailed design stage.

15-5 Environmental and Social Monitoring

15-45-1 Environmental and Social Monitoring

Both sides agreed that the Cambodian side will submit results of environmental and social monitoring to JICA by using the monitoring form attached as Annex 12.

15-5-2 Information Disclosure of Monitoring Results

Both sides confirmed that the Cambodian side will disclose results of environmental and social monitoring to local stakeholders through dissemination at the project sites or EDC website.

The Cambodian side agreed JICA will disclose results of environmental and social monitoring submitted by the Cambodian side as the monitoring forms attached as Annex 12 on its website.

16. Other Relevant Issues

16-1. Operation and Maintenance of the Equipment

The Team explained the importance of operation and maintenance of the equipment procured by the Project considering that proper asset management impacts greatly on life-span of the equipment and its maintenance cost. The Cambodian side shall secure enough staff and budgets necessary for appropriate operation and maintenance of the equipment.

16-2. Disclosure of Information

Both sides confirmed that the study results excluding the Project cost will be



disclosed to the public after completion of the Preparatory Survey. All the study results including the project cost will be disclosed to the public after all the contracts for the Project are concluded.

Annex 1 Project Site

Annex 2 Organization Chart

Annex 3 Project Cost Estimation

Annex 4 Japanese Grant

Annex 5 Flow Chart of Japanese Grant Procedures

Annex 6 Financial Flow of Japanese Grant

Annex 7 Project Implementation Schedule

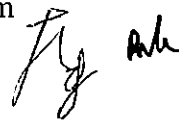
Annex 8 Major Undertakings to be taken by Each Government

Annex 9 Project Monitoring Report (template)

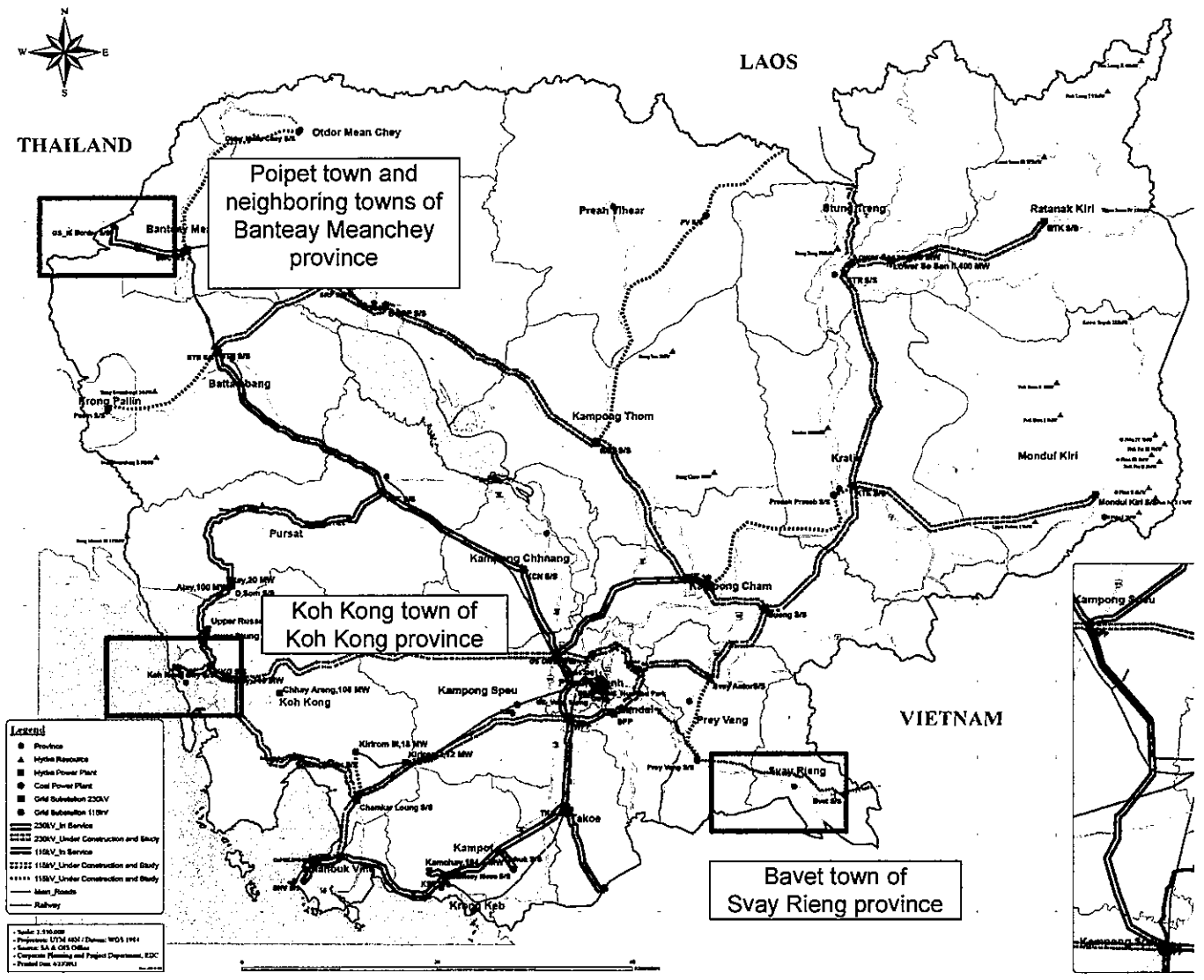
Annex 10 Environmental Check List

Annex 11 Environmental Management Plan/Environmental Monitoring Plan

Annex 12 Environmental and Social Monitoring Form

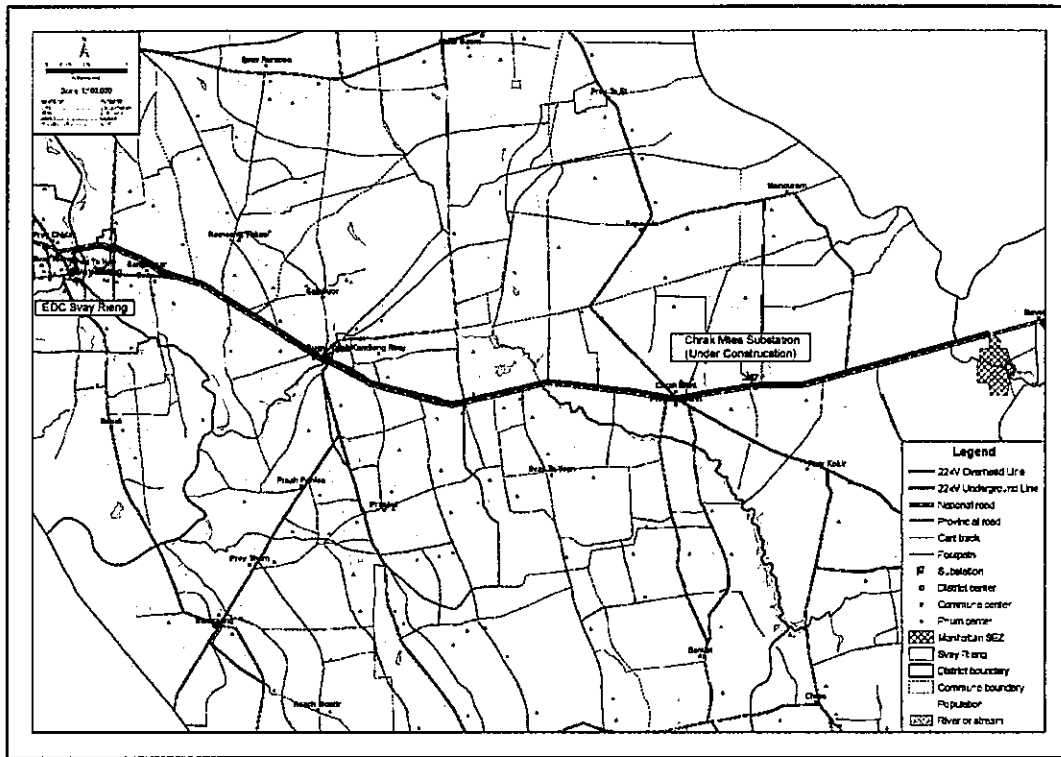
A handwritten signature in black ink, appearing to be 'T. J. Ah' or similar, located to the right of the list of annexes.

Annex 1 Project Site



Handwritten signature

Bavet Town of Svay Rieng Province



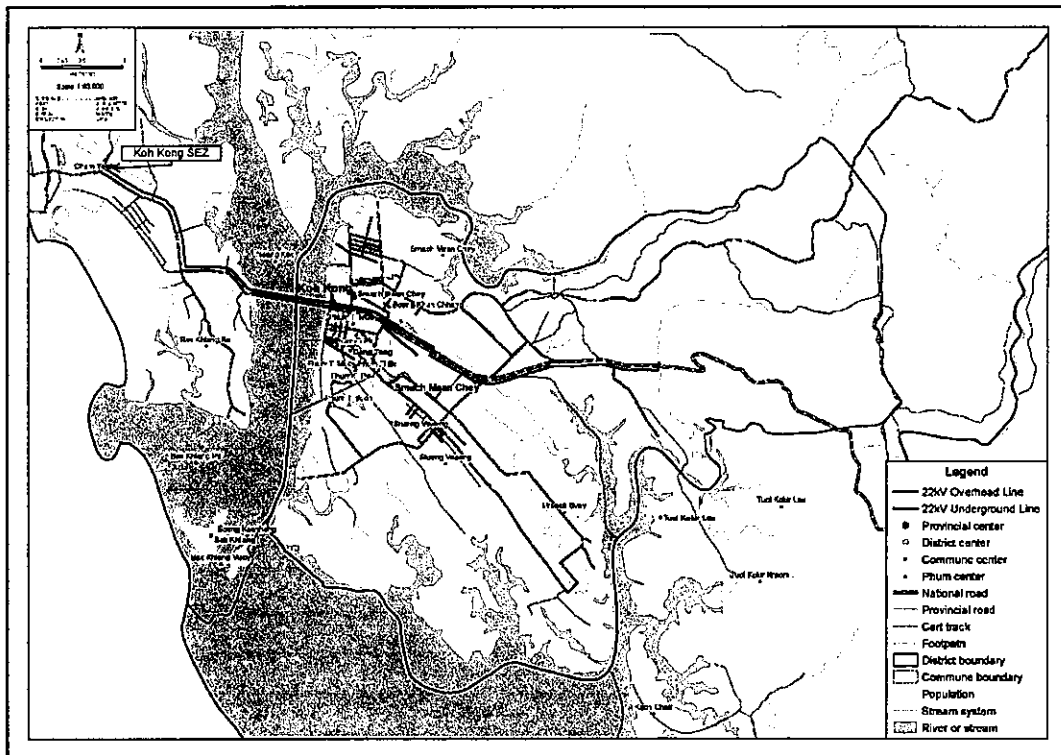
Poipet Town of Banteay Meanchey Province



Handwritten signature

Handwritten mark

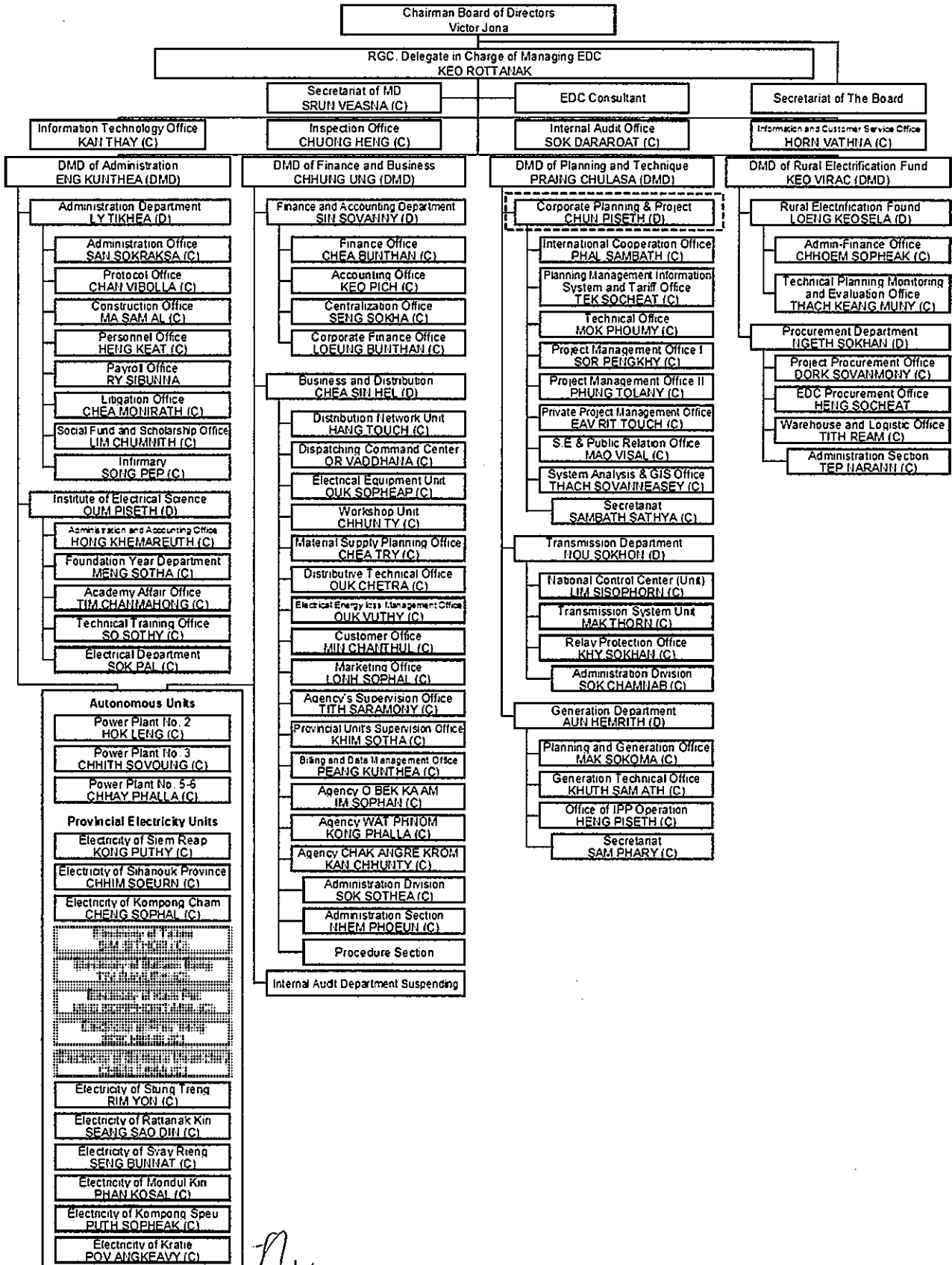
Koh Kong Town of Koh Kong Province



[Handwritten signature]

Annex 2 Organization Charts

Organization Chart (EDC)



Annex 3 Project Cost Estimation (Confidential)

The cost of the Project will be approximately _____ in total. The content of the project cost are shown separately for the Japanese borne portion and the Cambodia side borne portion in accordance with the conditions in term 3 below.

The cost estimate is provisional and subject to change as a result of examination by the Government of Japan for the approval of the Grant.

1. Estimated cost for the Japan side

2. Estimated cost for the Cambodia side

№	Items	Estimated cost
		Million USD
1	Advising commission of A/P based on B/A	0.0002
2	Payment commission for A/P based on B/A	0.0001
	Total	0.0003

3. Estimation criteria

№	Items	Contents	
1	Date of estimation	November 2015	
2	Foreign exchange rates	1 US\$ = ¥ 122.20	TTS average from August to October, 2015
3	Procurement and construction periods	The detailed design, equipment procurement and installation periods are as shown in the Project implementation schedule.	
4	Others	The Project will be implemented in accordance with the grant aid scheme of the Government of Japan.	

Annex 4 Japanese Grant

Japanese Grant

The Japanese Grant (hereinafter referred to as the “Grant”) is non-reimbursable fund provided to a recipient country to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for its economic and social development in accordance with the relevant laws and regulations of Japan. The Grant is not supplied through the donation of materials as such.

Based on a JICA law which was entered into effect on October 1, 2008 and the decision of the GOJ, JICA has become the executing agency of the Japanese Grant for Projects for construction of facilities, purchase of equipment, etc.

1. Grant Procedures

The Grant is supplied through following procedures :

- Preparatory Survey
 - The Survey conducted by JICA
- Appraisal & Approval
 - Appraisal by the GOJ and JICA, and Approval by the Japanese Cabinet
- Authority for Determining Implementation
 - The Notes exchanged between the GOJ and a recipient country
- Grant Agreement (hereinafter referred to as “the G/A”)
 - Agreement concluded between JICA and a recipient country
- Implementation
 - Implementation of the Project on the basis of the G/A

2. Preparatory Survey

(1) Contents of the Survey

The aim of the preparatory Survey is to provide a basic document necessary for the appraisal of the Project made by the GOJ and JICA. The contents of the Survey are as follows:

- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of relevant agencies of the recipient country necessary for the implementation of the Project.
- Evaluation of the appropriateness of the Project to be implemented under the Grant Scheme from a technical, financial, social and economic point of view.
- Confirmation of items agreed between both parties concerning the basic concept of the Project.
- Preparation of an outline design of the Project.
- Estimation of costs of the Project.

The contents of the original request by the recipient country are not necessarily approved in their initial form as the contents of the Grant project. The Outline Design of the Project is confirmed based on the guidelines of the Japanese Grant scheme.



JICA requests the Government of the recipient country to take whatever measures necessary to achieve its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization of the recipient country which actually implements the Project.

Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country based on the Minutes of Discussions.

(2) Selection of Consultants

For smooth implementation of the Survey, JICA employs (a) consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms.

(3) Result of the Survey

JICA reviews the Report on the results of the Survey and recommends the GOJ to appraise the implementation of the Project after confirming the appropriateness of the Project.

3. Japanese Grant Scheme

(1) The E/N and the G/A

After the Project is approved by the Cabinet of Japan, the Exchange of Notes(hereinafter referred to as "the E/N") will be signed between the GOJ and the Government of the recipient country to make a pledge for assistance, which is followed by the conclusion of the G/A between JICA and the Government of the recipient country to define the necessary articles, in accordance with the E/N, to implement the Project, such as payment conditions, responsibilities of the Government of the recipient country, and procurement conditions.

(2) Selection of Consultants

In order to maintain technical consistency, the consulting firm(s) which conducted the Survey will be recommended by JICA to the recipient country to continue to work on the Project's implementation after the E/N and G/A.

(3) Eligible source country

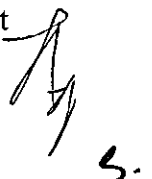
Under the Grant, in principle, Japanese products and services including transport or those of the recipient country are to be purchased. The Grant may be used for the purchase of the products or services of a third country, if necessary, taking into account the quality, competitiveness and economic rationality of products and services necessary for achieving the objective of the Project. However, the prime contractors, namely, constructing and procurement firms, and the prime consulting firm are limited to "Japanese nationals", in principle.

(4) Necessity of "Verification"

The Government of the recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals, in principle. Those contracts shall be verified by JICA. This "Verification" is deemed necessary to fulfill accountability to Japanese taxpayers.

(5) Major undertakings to be taken by the Government of the Recipient Country

In the implementation of the Grant Project, the recipient country is required to undertake such necessary measures as Annex. The Japanese Government requests the Government of the recipient



country to exempt all customs duties, internal taxes and other fiscal levies such as VAT, commercial tax, income tax, corporate tax, resident tax, fuel tax, but not limited, which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract, since the Grant fund comes from the Japanese taxpayers.

(6) "Proper Use"

The Government of the recipient country is required to maintain and use properly and effectively the facilities constructed and the equipment purchased under the Grant, to assign staff necessary for this operation and maintenance and to bear all the expenses other than those covered by the Grant.

(7) "Export and Re-export"

The products purchased under the Grant should not be exported or re-exported from the recipient country.

(8) Banking Arrangements (B/A)

a) The Government of the recipient country or its designated authority should open an account under the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"), in principle. JICA will execute the Grant by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.

b) The payments will be made when payment requests are presented by the Bank to JICA under an Authorization to Pay (A/P) issued by the Government of the recipient country or its designated authority.

(9) Authorization to Pay (A/P)

The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commissions paid to the Bank.

(10) Environmental and Social Considerations

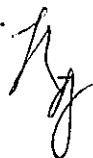
The Government of the recipient country must carefully consider environmental and social impacts by the Project and must comply with the environmental regulations of the recipient country and JICA Guidelines for Environmental and Social Consideration (April, 2010).

(11) Monitoring

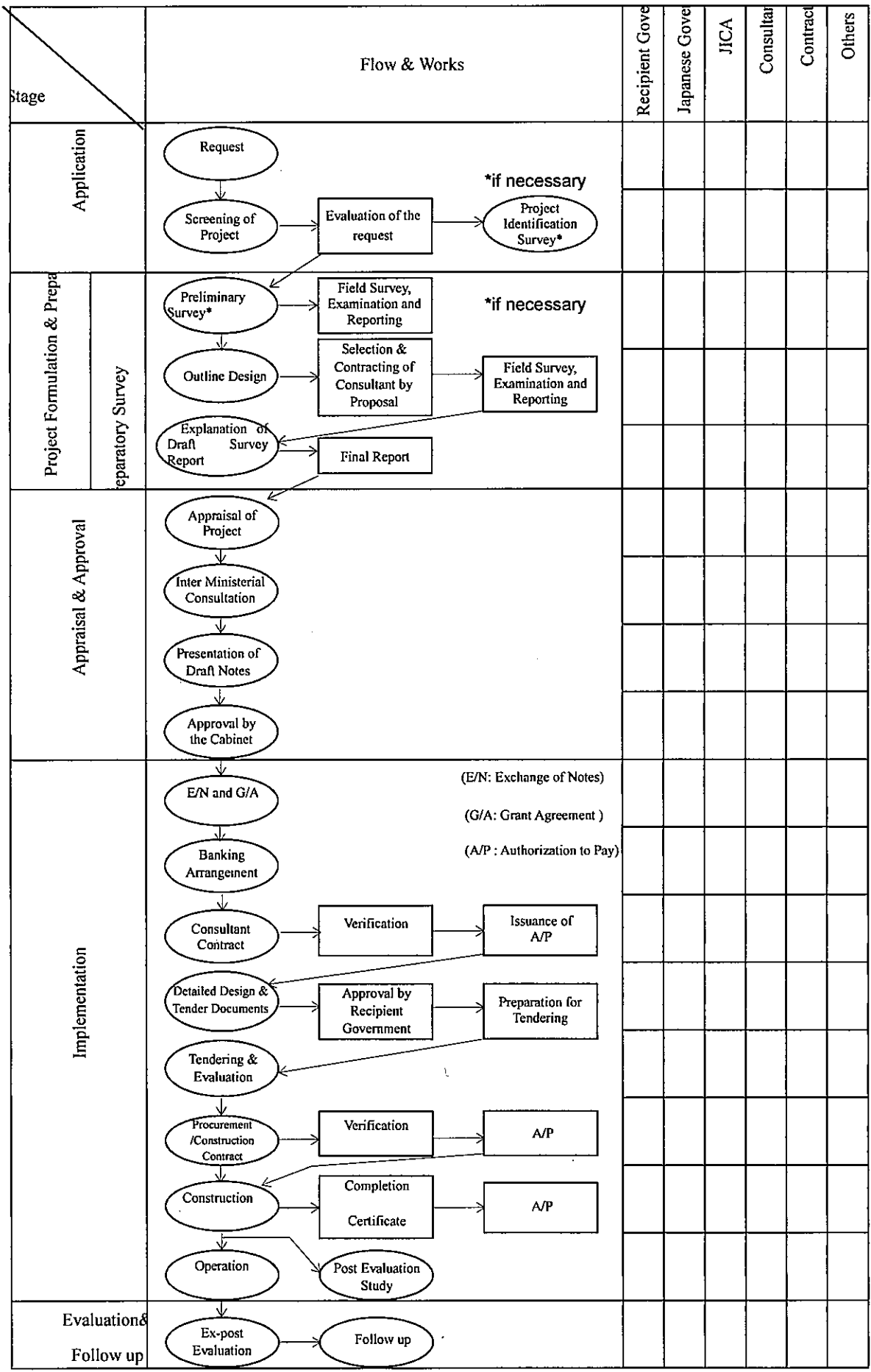
The Government of the recipient country must take their initiative to carefully monitor the progress of the Project in order to ensure its smooth implementation as part of their responsibility in the G/A, and must regularly report to JICA about its status by using the Project Monitoring Report (PMR).

(12) Safety Measures

The Government of the recipient country must ensure that the safety is highly observed during the implementation of the Project.

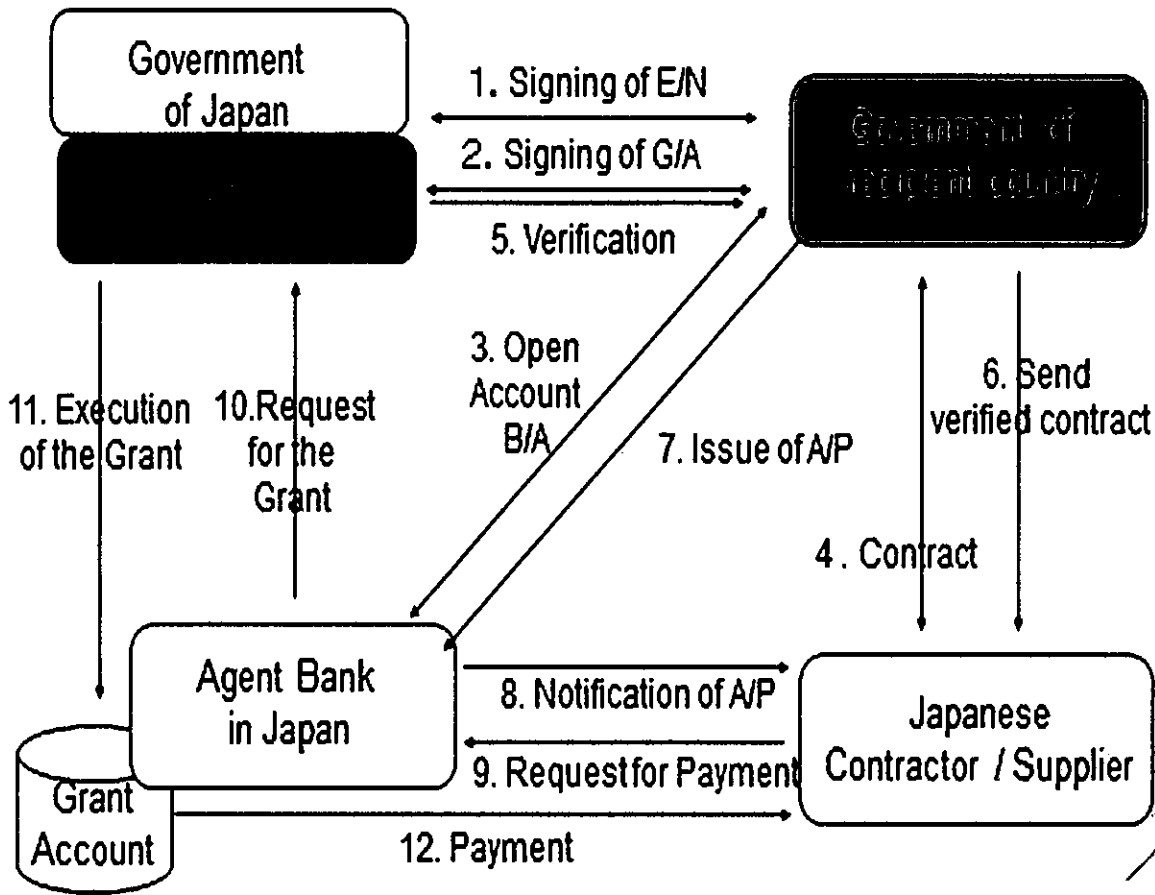


Annex 5 Flow Chart of Japanese Grant Procedures



Handwritten signature

Financial Flow of Grant Aid (A/P Type)



Annex 7 Project Implementation Schedule

The implementation schedule for the Project is follows:

Table Implementation Schedule

Work Items	Reference Month	Detailed design and Tender							Procurement/ Installation																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		
Exchange of Note (E/N)		▽																							
Grant Agreement (G/A)		▽																							
Contract signing (Consultant)		▽																							
Detailed design and Tender	Detailed design (Filed survey)		□																						
	Review of specification			□																					
	Preparation of tender documents				□																				
	Approval of tender documents					□																			
	Tender publication						▽																		
	Tender opening							▽																	
	Tender evaluation								□																
	Contract signing (Contractor)									▽															
	Procurement/ Installation	Preparation of documents and approval																							
		Manufacture																							
Meeting																									
Product inspection by the Contractor																									
Pre-shipment inspection																									
Pre-shipment inspection by an inspection agency																									
Shipping																									
Transportation																									
Bavet town of Svay Rieng Province																									
Route survey																									
Preparatory works																									
Digging, Pipe, Backfill work																									
Cable 22kV (underground) cable laying																									
Wire Install concrete pole																									
Wire Assembling, String																									
Install Load Break Switch																									
Install Distribution Transformer																									
Energizing / Test																									
Acceptance inspection /handover																									
Poipet town of Banteay Meanchey Province																									
Route survey																									
Preparatory works																									
Digging, Pipe, Backfill work																									
Cable 22kV (underground) cable laying																									
Wire Install concrete pole																									
Wire Assembling, String																									
Install Load Break Switch																									
Energizing / Test																									
Acceptance inspection /handover																									
Koh Kong town of Koh Kong Province																									
Route survey																									
Preparatory works																									
Digging, Pipe, Backfill work																									
Cable 22kV (underground) cable laying																									
Wire Install concrete pole																									
Wire Assembling, String																									
Install Load Break Switch																									
Energizing / Test																									
Acceptance inspection /handover																									

Annex8 Major Undertakings to be taken by Recipient Government

Major Undertakings to be Covered by the Cambodian side

1. Before the Tender

No	Items	Deadline	In charge	Cost	Ref.
1	To open Bank Account (Banking Arrangement (B/A))	within 1 month after G/A	National Bank of Cambodia		
2	Securing of the Project site, Removal of the existing facilities and trees at the Project site,	before start of the construction	EDC		
3	Obtaining authorization for road crossing at each Project site, for the connection of distribution line to the Rural Electricity Enterprises(REEs)/Substation, as well as for installing the distribution line along the bridge in Svay Rieng and Kok Kong town.	before start of the construction	EDC		
4	Consulting with the residents in Svay Rieng and Bavet town where their residential or private business areas are built within Right of Way (RoW), and fully informing them to install the poles.	Start no later than May 2016	EDC		

2. During the Project Implementation

No	Items	Deadline	In charge	Cost	Ref.
1	To bear the following commissions to a bank of Japan for the banking services based upon the B/A				
	1) Advising commission of A/P	within 1 month after the signing of the contract	National Bank of Cambodia	US\$ 200	
	2) Payment commission for A/P	every payment	National Bank of Cambodia	US\$ 100	
2	To ensure prompt unloading and customs clearance at the port of disembarkation in recipient country				
	1) Tax exemption and customs clearance of the products at the port of disembarkation	during the Project	MEF	US\$ 576,000	
3	To accord Japanese nationals and/or physical persons of third countries whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work	during the Project	EDC	N/A	
4	To ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the country of the Recipient with respect to the purchase of the Products and/or the Services be exempted; Such customs duties, internal taxes and other fiscal levies mentioned above include VAT, commercial tax, income tax and corporate tax of Japanese nationals, resident tax, fuel tax, but not limited, which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract	during the Project	MEF		
5	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for the transportation and installation of the equipment	during the Project	EDC	N/A	

6	To provide necessary data and information for the Project.	during the Project	EDC		
7	To appoint engineers and skilled workers as the counterpart (C/P) in order to witness inspections of equipment and materials and to transfer operation and maintenance skills under the Project.	during the Project	EDC		
8	To provide the stockyard for equipment and materials, temporary work land during a construction period.	during the Project	EDC		
9	To assure safety for construction-related personnel during the construction period and to contact the consumers at the time of traffic restrictions, planned outages or implementation of safety measures, if necessary.	during the Project	EDC		

3. After the Project

No	Items	Deadline	In charge	Cost	Ref.
1	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid 1) Allocation of maintenance cost 2) Operation and maintenance structure 3) Routine check/Periodic inspection	After completion of the construction	EDC	US\$ 1,000	

Major Undertakings to be Covered by the Japanese Grant

*The cost estimates are provisional. This is subject to the approval of the Government of Japan.

Project Monitoring Report
on
Project Name
Grant Agreement No. XXXXXXX
20XX, Month

Organization Information

Authority (Signer of the G/A)	_____ Person in Charge _____ (Division) _____ Contacts Address: _____ Phone/FAX: _____ Email: _____
Executing Agency	_____ Person in Charge _____ (Division) _____ Contacts Address: _____ Phone/FAX: _____ Email: _____
Line Agency	_____ Person in Charge _____ (Division) _____ Contacts Address: _____ Phone/FAX: _____ Email: _____

Outline of Grant Agreement:

Source of Finance	Government of Japan: Not exceeding JPY _____ mil. Government of (_____): _____
Project Title	
E/N	Signed date: Duration:
G/A	Signed date: Duration:

1: Project Description

1-1 Project Objective

--

1-2 Necessity and Priority of the Project

- Consistency with development policy, sector plan, national/regional development plans and demand of target group and the recipient country.

--

1-3 Effectiveness and the indicators

- Effectiveness by the project

Quantitative Effect (Operation and Effect indicators)		
Indicators	Original (Yr)	Target (Yr)
Qualitative Effect		

2: Project Implementation

2-1 Project Scope

Table 2-1-1a: Comparison of Original and Actual Location

Location	Original: (M/D) Attachment(s):Map	Actual: (PMR) Attachment(s):Map

Table 2-1-1b: Comparison of Original and Actual Scope

Items	Original	Actual
(M/D)	(M/D)	(PMR) Please state not only the most updated schedule but also other past revisions chronologically.

[Handwritten signature]

'Soft component' shall be included in 'Items'.	All change of design shall be recorded regardless of its degree.
--	--

(Sample)Table 2-1-1b: Comparison of Original and Actual Scope

Items	Original	Actual
1. Upgrading of the Kukum Highway	length 20km, single lane (3.47m*2), path(1.25m*2) Concrete Pavement 200mm (motor lane only)	length 20km, single lane (3.47m*2), path(1.00m*2) Concrete Pavement 200mm (motor lane only)
2. Replacement of Old Mataniko Bridge	Bridge length 40m, Width 9.5m, path(1.00m*2), compound steel box-girder bridge, Inverted T type-abutment spread foundation	Ditto

(Sample)Table 2-1-1b: Comparison of Original and Actual Scope

Items	Original	Actual
1. Outpatient Department	RC, Double Storey Ground floor: Consultation room 6 Reception Satellite Lab. Pharmacy, etc 1 st floor: Consultation room 5 Dental Clinic 2	RC, Double Storey Ground floor: Consultation room 5 ditto
2. Operation Theatre, Casualty Unit, Maternity Ward	RC, Double Storey Ground Floor: Operation room 2 Casualty Unit 1 st Floor: Maternity Ward 50 beds	ditto Maternity Ward 60 beds

(Sample)Table 2-1-1b: Comparison of Original and Actual Scope

Items	Original	Actual
1. Primary and Secondary Surveillance Radars at Chittagong Int'l Airport	i) OSR/SSR 1 set ii) RDP 1 set iii) VHF Transmitters 2 sets	Ditto
2. Access Control System for Dhaka Int'l Airport	1 set	Ditto
3. Doppler VOR/DME at Saidpur Airport	1 set	Ditto
4. Aerodrome Simulator for Civil Aviation Training Center	1 set	Ditto

Handwritten signature

5. Baggage Inspection System for Dhaka Int'l Airport	i) Hold Baggage Xray Inspectin system 7sets ii) Hold Baggage Explosive Trace Detecting System 7sets iii) Cabin Baggage Xray Inspection System 2sets	Ditto
6. Airport Fire Fighting Vehicles for Dhaka Int'l Airport	2 sets	3 sets

2-1-2 Reason(s) for the modification if there have been any.

(PMR)

2-2 Implementation Schedule

2-2-1 Implementation Schedule

Table 2-2-1: Comparison of Original and Actual Schedule

Items	Original		Actual
	DOD	G/A	
[M/D] 'Soft component' shall be stated in the column of 'Items'. Project Completion Date*	(M/D)		(PMR) As of (Date of Revision) Please state not only the most updated schedule but also other past revisions chronologically.

*Project Completion was defined as _____ at the time of G/A.

(Sample)Table 2-2-1: Comparison of Original and Actual Schedule

Items	Original		Actual
	DOD	G/A	
Cabinet Approval	11/2015	-	-
E/N	12/2015	1/2016	24/1/2016
G/A	12/2015	1/2016	24/1/2016 Amended 13/3/2017
Detailed Design	12/2015-4/2016	1/2016-5/2016	1/2016-5/2016
Tender Notice	5/2016	5/2016	1/6/2016
Tender	6/2016	6/2016	15/7/2016
(Lot1) Construction Period	7/2016-11/2018	7/2016-11/2018	8/8/2016-30/11/2018
(Lot2) Installarion of	7/2016-6/2018	7/2016-6/2018	6/8/2016-30/60/2017

Handwritten signature
5.

Equipment			
Project Completion Date	11/2018	11/2018	30/11/2018
Defect Liability Period	11/2019	11/2019	30/11/2019

*Project Completion was defined as Check-out of Construction work at the time of G/A.

2-2-2 Reasons for any changes of the schedule, and their effects on the project.

2-3 Undertakings by each Government

2-3-1 Major Undertakings
 See Attachment 2.

2-3-2 Activities
 See Attachment 3.

2-3-3 Report on RD
 See Attachment 4.

2-4 Project Cost

2-4-1 Project Cost

Table 2-4-1a Comparison of Original and Actual Cost by the Government of Japan
 (Confidential until the Tender)

Items	Cost (Million Yen)			
	Original	Actual	Original	Actual
Construction Facilities (or Equipment)	'Soft component' shall be included in 'Items'.			Please state not only the most updated schedule but also other past revisions chronologically.
Consulting Services	- Detailed design - Procurement Management - Construction Supervision			
Total				

Note: 1) Date of estimation:
 2) Exchange rate: 1 US Dollar = Yen

Table 2-4-1b Comparison of Original and Actual Cost by the Government of XX

Items	Cost (Million USD)			
	Original	Actual	Original	Actual

[Handwritten signature]
 4.

				Please state not only the most updated schedule but also other past revisions chronologically.
Total				

Note: 1) Date of estimation:
2) Exchange rate: 1 US Dollar = (local currency)

(Sample)Table 2-4-1a Comparison of Original and Actual Cost by the Government of Japan
(Confidential until the Tender)

Items			Cost (Million Yen)	
	Original	Actual	Original ^{1),2)}	Actual
Construction Facilities	1. Outpatient Department 2. Operation Theatre, Casualty Unit, Maternity Ward	Ditto Ditto	1,169.5	1,035.0
Equipment	1) Primary and Secondary Surveillance Radars at Chittagong Int'l Airport 2) Access Control System for Dhaka Int'l Airport 3) Doppler VOR/DME at Saidpur Airport 4) Aerodrome Simulator for Civil Aviation Training Center 5) Baggage Inspection System for Dhaka Int'l Airport 6) Airport Fire Fighting Vehicles for Dhaka Int'l Airport	Ditto	2,374.6	2,110.0
Consulting Services	- Detailed design - Procurement Management - Construction Supervision - Soft Component	Ditto	0.87	0.87
Total			3544.97	3145.87

Note: 1) Date of estimation: October, 2014
2) Exchange rate: 1 US Dollar = 99.93 Yen

(Sample)Table 2-4-1b Comparison of Original and Actual Cost by the Government of Bangladesh

Items			Cost (1,000 Taka)	
	Original	Actual	Original ^{1),2)}	Actual
Dhaka International Airport	Modification of software of existing Rader Data Processing System	Ditto	8,000	9,240
	Provision of a partition, lighting, air	Ditto	5,000	2,453

M. G. S.

	conditioning and electric power supply at transfer hold baggage check point			
	Replacement of five doors in the international passenger terminal building	Ditto	4,000	5,340
Chittagong Int'l Airport	Preparation of the radar site including felling of trees, clearing and grabbing	Ditto	5,000	3,400
Total			22,000	20,433

Note: 1) Date of estimation: October, 2014
 2) Exchange rate: 1 US Dollar = 0.887 Bangladesh Taka (local currency)

2-4-2 Reason(s) for the wide gap between the original and actual, if there have been any, the remedies you have taken, and their results.

(PMR)

2-5 Organizations for Implementation

2-5-1 Executing Agency:

- Organization's role, financial position, capacity, cost recovery etc,
- Organization Chart including the unit in charge of the implementation and number of employees.

Original: (M/D)

Actual, if changed: (PMR)

2-6 Environmental and Social Impacts


- The results of environmental monitoring as attached in Attachment 5 in accordance with Schedule 4 of the Grant Agreement.

- The results of social monitoring as attached in Attachment 5 in accordance with Schedule 4 of the Grant Agreement.

- Information on the disclosed results of environmental and social monitoring to local stakeholders, whenever applicable.

3: Operation and Maintenance (O&M)

3-1 O&M and Management

- Organization chart of O&M 

- Operational and maintenance system (structure and the number ,qualification and skill of staff or other conditions necessary to maintain the outputs and benefits of the project soundly, such as manuals, facilities and equipment for maintenance, and spare part stocks etc)

Original: (M/D)
Actual: (PMR)

3-2 O&M Cost and Budget

- The actual annual O&M cost for the duration of the project up to today, as well as the annual O&M budget.

Original: (M/D)

4: Precautions (Risk Management)

- Risks and issues, if any, which may affect the project implementation, outcome, sustainability and planned countermeasures to be adapted are below.

Original Issues and Countermeasure(s): (M/D)	
Potential Project Risks	Assessment
1.	Probability: H/M/L
(Description of Risk)	Impact: H/M/L
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action during the Implementation:
	Contingency Plan (if applicable):
2.	Probability: H/M/L
(Description of Risk)	Impact: H/M/L
	Analysis of Probability and Impact:
	Mitigation Measures:

Handwritten signature

	Action during the Implementation:
	Contingency Plan (if applicable):
3.	Probability: H/M/L
(Description of Risk)	Impact: H/M/L
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action during the Implementation:
	Contingency Plan (if applicable):
Actual issues and Countermeasure(s)	
(PMR)	

5: Evaluation at Project Completion and Monitoring Plan

5-1 Overall evaluation
 Please describe your overall evaluation on the project.

5-2 Lessons Learnt and Recommendations
 Please raise any lessons learned from the project experience, which might be valuable for the future assistance or similar type of projects, as well as any recommendations, which might be beneficial for better realization of the project effect, impact and assurance of sustainability.

5-3 Monitoring Plan for the Indicators for Post-Evaluation
 Please describe monitoring methods, section(s)/department(s) in charge of monitoring, frequency, the term to monitor the indicators stipulated in 1-3.

Handwritten signature

Attachment

1. Project Location Map
2. Undertakings to be taken by each Government
3. Monthly Report
4. Report on RD
5. Environmental Monitoring Form / Social Monitoring Form
6. Monitoring sheet on price of specified materials (Quarterly)
7. Report on Proportion of Procurement (Recipient Country, Japan and Third Countries)
(Final Report Only)

A handwritten signature in black ink, appearing to be the initials 'KJ' or similar, written in a cursive style.

Monitoring sheet on price of specified materials

1. Initial Conditions (Confirmed)

	Items of Specified Materials	Initial Volume A	Initial Unit Price (¥) B	Initial total Price C=A×B	1% of Contract Price D	Condition of payment	
						Price (Decreased) E=C-D	Price (Increased) F=C+D
1	Item 1	●●t	●	●	●	●	●
2	Item 2	●●t	●	●	●		
3	Item 3						
4	Item 4						
5	Item 5						

2. Monitoring of the Unit Price of Specified Materials

(1) Method of Monitoring : ●●

(2) Result of the Monitoring Survey on Unit Price for each specified materials

	Items of Specified Materials	1st ●month, 2015	2nd ●month, 2015	3rd ●month, 2015	4th	5th	6th
1	Item 1						
2	Item 2						
3	Item 3						
4	Item 4						
5	Item 5						

(3) Summary of Discussion with Contractor (if necessary)

Report on Proportion of Procurement (Recipient Country, Japan and Third Countries)
 (Actual Expenditure by Construction and Equipment each)

	Domestic Procurement (Recipient Country) A	Foreign Procurement (Japan) B	Foreign Procurement (Third Countries) C	Total D
Construction Cost	(A/D%)	(B/D%)	(C/D%)	
Direct Construction Cost	(A/D%)	(B/D%)	(C/D%)	
others	(A/D%)	(B/D%)	(C/D%)	
Equipment Cost	(A/D%)	(B/D%)	(C/D%)	
Design and Supervision Cost	(A/D%)	(B/D%)	(C/D%)	
Total	(A/D%)	(B/D%)	(C/D%)	

Handwritten signature

Annex10 Environmental Check List

Environmental Check List

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
1 Permits and Explanation	(1) EIA and Environmental Permits	(a) Have EIA reports been already prepared in official process? (b) Have EIA reports been approved by authorities of the host country's government? (c) Have EIA reports been unconditionally approved? If conditions are imposed on the approval of EIA reports, are the conditions satisfied? (d) In addition to the above approvals, have other required environmental permits been obtained from the appropriate regulatory authorities of the host country's government?	(a) N (b) N (c) N (d) N	(a) EIA and IEIA are not required in Cambodian System. (b) ditto (c) ditto (d) Other environmental permits are not required.
	(2) Explanation to the Local Stakeholders	(a) Have contents of the project and the potential impacts been adequately explained to the Local stakeholders based on appropriate procedures, including information disclosure? Is understanding obtained from the Local stakeholders? (b) Have the comment from the stakeholders (such as local residents) been reflected to the project design?	(a) Y (b) Y	(a) EDC explained contents of the project, the potential impacts and mitigation measures to stakeholder in the stakeholder meetings (SHM) on 11 December 2015 in Bavet, 15 December 2015 in Poipet and 24 December 2015 in Koh Kong. Stakeholders agreed with the Project. (b) The comments from stakeholders was reflected to the construction plan.
	(3) Examination of Alternatives	(a) Have alternative plans of the project been examined with social and environmental considerations?	(a) Y	(a) The alternative routes of distribution lines and Zero-option were compared in order to minimize the impact on environment and social.
2 Pollution Control	(1) Water Quality	(a) Is there any possibility that soil runoff from the bare lands resulting from earthmoving activities, such as cutting and filling will cause water quality degradation in downstream water areas? If the water quality degradation is anticipated, are adequate measures considered?	(a) N	(a) There is not possibility of soil runoff because the works of the project don't include earthmoving activities such as cutting and filling.
3 Natural Environment	(1) Protected Areas	(a) Is the project site located in protected areas designated by the country's laws or international treaties and conventions? Is there a possibility that the project will affect the protected areas?	(a) N	(a) The site of Koh Kong is adjacent to the Southern Elephant Corridor Protected Forest. But there is little impact on the protected forest, because the planned route is along the national road No.48 and is developed in the Right of Way of the road.

Annex10 Environmental Check List

	<p>(2) Ecosystem</p>	<p>(a) Does the project site encompass primeval forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)? (b) Does the project site encompass the protected habitats of endangered species designated by the country's laws or international treaties and conventions? (c) If significant ecological impacts are anticipated, are adequate protection measures taken to reduce the impacts on the ecosystem? (d) Are adequate measures taken to prevent disruption of migration routes and habitat fragmentation of wildlife and livestock? (e) Is there any possibility that the project will cause the negative impacts, such as destruction of forest, poaching, desertification, reduction in wetland areas, and disturbance of ecosystem due to introduction of exotic (non-native invasive) species and pests? Are adequate measures for preventing such impacts considered? (f) In cases where the project site is located in undeveloped areas, is there any possibility that the new development will result in extensive loss of natural environments?</p>	<p>(a) N (b) Y (c) N (d) N (e) N (f) N</p>	<p>(a) The project areas are located in the rural developed area, they don't have ecological valuable habitats. (b) The site of Koh Kong is adjacent to the Southern Elephant Corridor Protected Forest. But there is little impact on the protected forest, because the planned route is along the national road No.48 and is developed in the Right of Way of the road. (c)(d)(e)(f) The impact on ecosystem is not expected.</p>
	<p>(3) Topography and Geology</p>	<p>(a) Is there any soft ground on the route of power transmission and distribution lines that may cause slope failures or landslides? Are adequate measures considered to prevent slope failures or landslides, where needed? (b) Is there any possibility that civil works, such as cutting and filling will cause slope failures or landslides? Are adequate measures considered to prevent slope failures or landslides? (c) Is there a possibility that soil runoff will result from cut and fill areas, waste soil disposal sites, and borrow sites? Are adequate measures taken to prevent soil runoff?</p>	<p>(a) N (b) N (c) N</p>	<p>(a) The project sites are almost flat and don't have the soft ground that may cause slope failures or landslides. (b)(c) Works which cause slope failures or landslides are not expected.</p>
<p>4 Social Environment</p>	<p>(1) Resettlement</p>	<p>(a) Is involuntary resettlement caused by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement? (b) Is adequate explanation on compensation and resettlement assistance given to affected people prior to resettlement? (c) Is the resettlement plan, including compensation with full replacement costs, restoration of livelihoods and living standards developed based on socioeconomic studies on resettlement? (d) Are the compensations going to be paid prior to the resettlement? (e) Are the compensation policies prepared in document? (f) Does the resettlement plan pay particular attention to vulnerable groups or people, including women, children, the elderly, people below the poverty line, ethnic minorities, and indigenous peoples? (g) Are agreements with the affected people obtained prior to resettlement? (h) Is the organizational framework established to properly implement resettlement? Are the capacity and budget</p>	<p>(a)N (b)N (c)N (d)N (e)N (f)N (g)N (h)N (i)N (j) N</p>	<p>(a)(b)(c)(d)(e)(f)(g)(h)(i)(j) The involuntary resettlement is not caused by the project, because the project is developed in the Right of Way of the road.</p>

Handwritten signature and initials

Annex10 Environmental Check List

		<p>secured to implement the plan?</p> <p>(i) Are any plans developed to monitor the impacts of resettlement?</p> <p>(j) Is the grievance redress mechanism established?</p>		
4 Social Environment	(2) Living and Livelihood	<p>(a) Is there a possibility that the project will adversely affect the living conditions of inhabitants? Are adequate measures considered to reduce the impacts, if necessary?</p> <p>(b) Is there a possibility that diseases, including infectious diseases, such as HIV will be brought due to immigration of workers associated with the project? Are adequate considerations given to public health, if necessary?</p> <p>(c) Is there any possibility that installation of structures, such as power line towers will cause a radio interference? If any significant radio interference is anticipated, are adequate measures considered?</p> <p>(d) Are the compensations for transmission wires given in accordance with the domestic law?</p>	<p>(a) Y (b) N (c) N (d) Y</p>	<p>(a) The impact on residents along the route is limited, because the size of construction work is very small. In the case that poles are constructed near shops and houses occupied in ROW of the road, consultation with residents about working hour is conducted before construction. There is little possibility that poles are constructed in farm lands within ROW, but it will not be able to be avoided, the consultation with concerned people about work schedule is conducted before construction. The cutting of commercial trees along the road is avoided as far as possible. If the cutting trees will not be able to be avoided, EDC will consult with PAPs and compensate as necessary.</p> <p>(b) There is not any possibility that diseases due to immigration of workers. Because the immigration of workers is limited because of the small construction work.</p> <p>(c) The radio interference is not expected, because the project is construction of 22kV distribution line.</p> <p>(d) The compensations under the line is not required on distribution line development.</p>
	(3) Heritage	<p>(a) Is there a possibility that the project will damage the local archeological, historical, cultural, and religious heritage? Are adequate measures considered to protect these sites in accordance with the country's laws?</p>	<p>(a) N</p>	<p>(a) There is not any local archaeological, historical, cultural, and religious heritage affected by project.</p>

Handwritten signature
S.

Annex10 Environmental Check List

	(4) Landscape	(a) Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?	(a) N	(a) There is not any local landscape affected by project.
	(5) Ethnic Minorities and Indigenous Peoples	(a) Are considerations given to reduce impacts on the culture and lifestyle of ethnic minorities and indigenous peoples? (b) Are all of the rights of ethnic minorities and indigenous peoples in relation to land and resources respected?	(a) N (b) N	(a) (b) There are not any ethnic minority and indigenous people in and around the project area.
4 Social Environment	(6) Working Conditions	(a) Is the project proponent not violating any laws and ordinances associated with the working conditions of the country which the project proponent should observe in the project? (b) Are tangible safety considerations in place for individuals involved in the project, such as the installation of safety equipment which prevents industrial accidents, and management of hazardous materials? (c) Are intangible measures being planned and implemented for individuals involved in the project, such as the establishment of a safety and health program, and safety training (including traffic safety and public health) for workers etc.? (d) Are appropriate measures taken to ensure that security guards involved in the project not to violate safety of other individuals involved, or local residents?	(a) Y (b) Y (c) Y (d) Y	(a) The project will be implement in compliance with the Labor Law stipulated in Cambodia. (b) The contractor will conduct the safety consideration measures on hardware in accordance with all safety working standards. (c) The contractor will prepare the safety and health management plan and conduct safety education and training for workers. (d) The contractor will conduct safety education and training for security guards in accordance with the safety and health management plan. The security guards will conduct periodical patrol so as to avoid conflict with stakeholders and local people.
5 Others	(1) Impacts during Construction	(a) Are adequate measures considered to reduce impacts during construction (e.g., noise, vibrations, turbid water, dust, exhaust gases, and wastes)? (b) If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts? (c) If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts?	(a) Y (b) N (c) Y	(a) Pollution is hardly expected to cause due to the small construction work. But the construction work will be conducted with consideration in dense residential area. In addition, low emission vehicles and noise reduction machine are used and water sprinkling is conducted so as not to affect air pollution and noise/vibration. (b) The impact on natural environment is not hardly expected. (c) There is possibility of the impact on shop operating and passage of residents along the road. Mitigation measures will be implemented as above: living and livelihood.
	(2) Monitoring	(a) Does the proponent develop and implement monitoring program for the environmental items that are considered to have potential impacts? (b) What are the items, methods and frequencies of the monitoring program? (c) Does the proponent establish an adequate monitoring framework (organization, personnel, equipment, and adequate budget to sustain the monitoring framework)? (d) Are any regulatory requirements pertaining to the monitoring report system identified, such as the format and frequency of reports from the proponent to the regulatory authorities?	(a) Y (b) Y (c) Y (d) N	(a) Monitoring program is prepared on air pollution, noise/vibration, protected area/ ecosystem, living, traffic and working condition. . (b) Public meeting and monthly observation survey in the site will be conducted. (c) EDC will establish the monitoring system and conduct monitoring with responsibility of the monitoring cost. (d) At present, the format and the frequency of the report are not provided from regulatory

J. S.

Annex10 Environmental Check List

				authorities.
6 Note	Reference to Checklist of Other Sectors	(a) Where necessary, pertinent items described in the Road checklist should also be checked (e.g., projects including installation of electric transmission lines and/or electric distribution facilities).	(a) N	(a) Temporary access road is not constructed.
	Note on Using Environmental Checklist	(a) If necessary, the impacts to transboundary or global issues should be confirmed, (e.g., the project includes factors that may cause problems, such as transboundary waste treatment, acid rain, destruction of the ozone layer, or global warming).	(a) N	(a) There is no possibility to impact on the transboundary or global environment due to the small construction work.

Handwritten signature

**Annex11 Environmental Management Plan/Environmental Monitoring Plan
Environmental Management Plan and Monitoring Plan**

(1) Mitigation Measures

The mitigation measures were examined about the negative impact items assumed in the impact assessment.

Table 1 Mitigation Measures

No.	Items	Mitigation measure	Implementation organization	Responsible organization
1				
Air Pollution				
1	Air pollution	<ul style="list-style-type: none"> ➢ Preparation and compliance of safety and health management plan <ul style="list-style-type: none"> - Use of low emission machines and vehicles - Water sprinkling for dust ➢ Explanation of the work schedule to local people 	DCC EDC	EDC
5	Noise/ vibration	<ul style="list-style-type: none"> ➢ Preparation and compliance of safety and health management plan <ul style="list-style-type: none"> - Use of noise reducing machines ➢ Explanation of the work schedule to local people 	DCC EDC	EDC
9	Protected area	<ul style="list-style-type: none"> ➢ Preparation and compliance of safety and health management plan <ul style="list-style-type: none"> - Restriction of materials temporary placed to outside ROW of the road near Southern Elephant Corridor Protected Forest 	DCC	EDC
10	Ecosystem			
16	Local Economy (Employment and Livelihood, etc.)	<ul style="list-style-type: none"> ➢ Preparation of final design so as to avoid the impact on livelihood such as shops, houses and commercial trees ➢ Preparation and compliance of safety and health management plan <ul style="list-style-type: none"> - Implementation of construction work in non-business hour or holiday in market area - Implementation of consultation and coordination about construction schedule with stakeholders ➢ Explanation of the work schedule to local people ➢ Appropriate compensation for cutting commercial trees if necessary 	DCC PIC EDC	EDC
19	Existing Social Infrastructure, Social Service (including Traffic)	<ul style="list-style-type: none"> ➢ Preparation and compliance of safety and health management plan <ul style="list-style-type: none"> - Restriction of place parked construction vehicles ➢ Explanation of the work schedule to local people 	DCC EDC	EDC
28	Working condition	<ul style="list-style-type: none"> ➢ Preparation and compliance of safety and health management plan <ul style="list-style-type: none"> - Wearing of basic safety equipment such as safety shoes, gloves and helmet - Wearing safety best at high place 	DCC	EDC
29	Accident	<ul style="list-style-type: none"> ➢ Preparation and compliance of safety and health management plan <ul style="list-style-type: none"> - Installation of warning signs 	DCC	EDC

*DCC : Design and Construct Contractor, PIC: Project Implementation Consultant

(2) Implementation System

The implementation system of Environmental management and monitoring plan is shown in Table 2. EDC is responsible for entire implementation of the project.

EDC explains the detailed construction schedule to local people before construction. DCC confirms the planned route and prepares the final design in terms of mitigation measures and safety and health management plan (including construction plan). The Project Implementation Consultant (PIC) reviews the plan prepared by DCC. If the cutting trees is required, PIC will inform to EDC, then EDC will consult with Affected People.

EDC regularly patrols surrounding of the site during construction. EDC will require to DCC through PIC if the problem is found. In the case that residents in the project area have grievance or any environmental and social problems occurs, EDC will attempt to solve them.

Table 2 Environmental Management and Monitoring Responsibilities

Organization	Responsibilities
--------------	------------------

EDC


EDC	<ul style="list-style-type: none"> ➤ EDC is directly responsible for EMP and the monitoring plan. ➤ EDC explains the detailed construction schedule and route. ➤ EDC regularly patrols the surrounding of the sites. ➤ In the problem is found, EDC provides environmental staffs to the site for the status check. ➤ EDC solves the grievance during construction and operation.
DCC	<ul style="list-style-type: none"> ➤ DCC prepares the final design in terms of mitigation measures ➤ DCC prepares and implements the safety and health management plan (including construction plan).
PIC	<ul style="list-style-type: none"> ➤ PIC supervises the execution of works so that the project conducts in line with EMP and the monitoring plan. ➤ PIC reviews the safety and health management plan prepared by DCC.

(3) Monitoring Plan

The monitoring plan was prepared according to the mitigation measures.

Table 3 Monitoring Plan

Item	Parameters to be Monitored	Measure	Location	Frequency	Implementing /Responsible Organization
Pre-construction phase					
All items	Checking the final engineering design		—	At the detailed design stage and the final design stage	PIC, DCC
	Preparation and verification of the safety and health management plan		—	At the final design stage	PIC, DCC
	Public consultation		Project sites	Once to twice/ site	EDC
Construction phase					
Air pollution	Dust, situation of transportation of materials	Site confirmation by the patrol, complaints	Around the project site	Monthly	DCC, PIC,EDC
Noise/ vibration	Noise/ vibration, situation of transportation of materials				
Protected area	Situation of temporary storage of materials	Site confirmation by the patrol			
Ecosystem					
Local Economy (Employment and Livelihood, etc.)	Situation of avoidance of impacts on shops, houses, crops and commercial trees	Site confirmation by the patrol, complaints			
Traffic	Situation of parking of construction vehicles	Site confirmation by the patrol, complaints	Project site		
Working condition	Situation of wear safety equipment	Site confirmation by the patrol			
Accident	Situation of installation of warning signs	Site confirmation by the patrol			


 4.

Annex12 Environmental and Social Monitoring Form

Monitoring Form

【Before Construction】

1. Explanation of the Project Construction for Local Residence				
No.	Date	Place	Method	Note
1				
2				
3				

2. Cutting of Trees				
No.	Date	Place	Type of Tree	Reason
1				
2				
3				

【Under Construction】

No.	Item	Date	Place	Condition	Frequency
1	Dust				Monthly
	Noise				
	Protected Area/ Ecosystem				
	Traffic				
	Working Condition				
	Accident				
	Livelihood				
2	Dust				Monthly
	Noise				
	Protected Area/ Ecosystem				
	Traffic				
	Working Condition				
	Accident				
	Livelihood				
3	Dust				Monthly
	Noise				
	Protected Area/ Ecosystem				
	Traffic				
	Working Condition				
	Accident				
	Livelihood				

Handwritten signature/initials

APPENDIX 5

ENVIRONMENTAL CHECK LIST

APPENDIX 5 : ENVIRONMENTAL CHECK LIST

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
1 Permits and Explanation	(1) EIA and Environmental Permits	(a) Have EIA reports been already prepared in official process? (b) Have EIA reports been approved by authorities of the host country's government? (c) Have EIA reports been unconditionally approved? If conditions are imposed on the approval of EIA reports, are the conditions satisfied? (d) In addition to the above approvals, have other required environmental permits been obtained from the appropriate regulatory authorities of the host country's government?	(a) N (b) N (c) N (d) N	(a) EIA and IEIA are not required in Cambodian System. (b) ditto (c) ditto (d) Other environmental permits are not required.
	(2) Explanation to the Local Stakeholders	(a) Have contents of the project and the potential impacts been adequately explained to the Local stakeholders based on appropriate procedures, including information disclosure? Is understanding obtained from the Local stakeholders? (b) Have the comment from the stakeholders (such as local residents) been reflected to the project design?	(a) Y (b) Y	(a) EDC explained contents of the project, the potential impacts and mitigation measures to stakeholder in the stakeholder meetings (SHM) on 11 December 2015 in Bavet, 15 December 2015 in Poipet and 24 December 2015 in Koh Kong. Stakeholders agreed with the Project. (b) The comments from stakeholders was reflected to the construction plan.
	(3) Examination of Alternatives	(a) Have alternative plans of the project been examined with social and environmental considerations?	(a) Y	(a) The alternative routes of distribution lines and Zero-option were compared in order to minimize the impact on environment and social.
2 Pollution Control	(1) Water Quality	(a) Is there any possibility that soil runoff from the bare lands resulting from earthmoving activities, such as cutting and filling will cause water quality degradation in downstream water areas? If the water quality degradation is anticipated, are adequate measures considered?	(a) N	(a) There is not possibility of soil runoff because the works of the project don't include earthmoving activities such as cutting and filling.
3 Natural Environment	(1) Protected Areas	(a) Is the project site located in protected areas designated by the country's laws or international treaties and conventions? Is there a possibility that the project will affect the protected areas?	(a) N	(a) The site of Koh Kong is adjacent to the Southern Elephant Corridor Protected Forest. But there is little impact on the protected forest, because the planned route is along the national road No.48 and is developed in the Right of Way of the road.
	(2) Ecosystem	(a) Does the project site encompass primeval forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)? (b) Does the project site encompass the protected habitats of endangered species designated by the country's laws or international treaties and conventions? (c) If significant ecological impacts are anticipated, are adequate protection measures taken to reduce the impacts on the ecosystem?	(a) N (b) Y (c) N	(a) The project areas are located in the rural developed area, they don't have ecological valuable habitats. (b) The site of Koh Kong is adjacent to the Southern Elephant Corridor Protected Forest. But there is little impact on the protected forest, because the planned route is along the national road No.48 and is developed in the Right of Way of the road. (c)(d)(e)(f) The impact on ecosystem is not expected.

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
3 Natural Environment	(2) Ecosystem	(d) Are adequate measures taken to prevent disruption of migration routes and habitat fragmentation of wildlife and livestock? (e) Is there any possibility that the project will cause the negative impacts, such as destruction of forest, poaching, desertification, reduction in wetland areas, and disturbance of ecosystem due to introduction of exotic (non-native invasive) species and pests? Are adequate measures for preventing such impacts considered? (f) In cases where the project site is located in undeveloped areas, is there any possibility that the new development will result in extensive loss of natural environments?	(d) N (e) N (f) N	
	(3) Topography and Geology	(a) Is there any soft ground on the route of power transmission and distribution lines that may cause slope failures or landslides? Are adequate measures considered to prevent slope failures or landslides, where needed? (b) Is there any possibility that civil works, such as cutting and filling will cause slope failures or landslides? Are adequate measures considered to prevent slope failures or landslides? (c) Is there a possibility that soil runoff will result from cut and fill areas, waste soil disposal sites, and borrow sites? Are adequate measures taken to prevent soil runoff?	(a) N (b) N (c) N	(a) The project sites are almost flat and don't have the soft ground that may cause slope failures or landslides. (b)(c) Works which cause slope failures or landslides are not expected.
4 Social Environment	(1) Resettlement	(a) Is involuntary resettlement caused by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement? (b) Is adequate explanation on compensation and resettlement assistance given to affected people prior to resettlement? (c) Is the resettlement plan, including compensation with full replacement costs, restoration of livelihoods and living standards developed based on socioeconomic studies on resettlement? (d) Are the compensations going to be paid prior to the resettlement? (e) Are the compensation policies prepared in document? (f) Does the resettlement plan pay particular attention to vulnerable groups or people, including women, children, the elderly, people below the poverty line, ethnic minorities, and indigenous peoples? (g) Are agreements with the affected people obtained prior to resettlement? (h) Is the organizational framework established to properly implement resettlement? Are the capacity and budget secured to implement the plan? (i) Are any plans developed to monitor the impacts of resettlement? (j) Is the grievance redress mechanism established?	(a)N (b)N (c)N (d)N (e)N (f)N (g)N (h)N (i)N (j) N	(a)(b)(c)(d)(e)(f)(g)(h)(i)(j) The involuntary resettlement is not caused by the project, because the project is developed in the Right of Way of the road.

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
4 Social Environment	(2) Living and Livelihood	<p>(a) Is there a possibility that the project will adversely affect the living conditions of inhabitants? Are adequate measures considered to reduce the impacts, if necessary?</p> <p>(b) Is there a possibility that diseases, including infectious diseases, such as HIV will be brought due to immigration of workers associated with the project? Are adequate considerations given to public health, if necessary?</p> <p>(c) Is there any possibility that installation of structures, such as power line towers will cause a radio interference? If any significant radio interference is anticipated, are adequate measures considered?</p> <p>(d) Are the compensations for transmission wires given in accordance with the domestic law?</p>	<p>(a) Y</p> <p>(b) N</p> <p>(c) N</p> <p>(d) Y</p>	<p>(a) The impact on residents along the route is limited, because the size of construction work is very small. In the case that poles are constructed near shops and houses occupied in ROW of the road, consultation with residents about working hour is conducted before construction. There is little possibility that poles are constructed in farm lands within ROW, but it will not be able to be avoided, the consultation with concerned people about work schedule is conducted before construction. The cutting of commercial trees along the road is avoided as far as possible. If the cutting trees will not be able to be avoided, EDC will consult with PAPs and compensate as necessary.</p> <p>(b) There is not any possibility that diseases due to immigration of workers. Because the immigration of workers is limited because of the small construction work.</p> <p>(c) The radio interference is not expected, because the project is construction of 22kV distribution line.</p> <p>(d) The compensations under the line is not required on distribution line development.</p>
	(3) Heritage	<p>(a) Is there a possibility that the project will damage the local archeological, historical, cultural, and religious heritage? Are adequate measures considered to protect these sites in accordance with the country's laws?</p>	(a) N	(a) There is not any local archaeological, historical, cultural, and religious heritage affected by project.
	(4) Landscape	<p>(a) Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?</p>	(a) N	(a) There is not any local landscape affected by project.
	(5) Ethnic Minorities and Indigenous Peoples	<p>(a) Are considerations given to reduce impacts on the culture and lifestyle of ethnic minorities and indigenous peoples?</p> <p>(b) Are all of the rights of ethnic minorities and indigenous peoples in relation to land and resources respected?</p>	<p>(a) N</p> <p>(b) N</p>	(a) (b) There are not any ethnic minority and indigenous people in and around the project area.
	(6) Working Conditions	<p>(a) Is the project proponent not violating any laws and ordinances associated with the working conditions of the country which the project proponent should observe in the project?</p> <p>(b) Are tangible safety considerations in place for individuals involved in the project, such as the installation of safety equipment which prevents industrial accidents, and management of hazardous materials?</p> <p>(c) Are intangible measures being planned and implemented for individuals involved in the project, such as the establishment of a safety and health program, and safety training (including traffic safety and public health) for workers etc.?</p>	(a) Y	<p>(a) The project will be implement in compliance with the Labor Law stipulated in Cambodia.</p> <p>(b) The contractor will conduct the safety consideration measures on hardware in accordance with all safety working standards.</p> <p>(c) The contractor will prepare the safety and health management plan and conduct safety education and training for workers.</p>

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
4 Social Environment	(6) Working Conditions	(d) Are appropriate measures taken to ensure that security guards involved in the project not to violate safety of other individuals involved, or local residents?	(d) Y	(d) The contractor will conduct safety education and training for security guards in accordance with the safety and health management plan. The security guards will conduct periodical patrol so as to avoid conflict with stakeholders and local people.
5 Others	(1) Impacts during Construction	(a) Are adequate measures considered to reduce impacts during construction (e.g., noise, vibrations, turbid water, dust, exhaust gases, and wastes)?	(a) Y	(a) Pollution is hardly expected to cause due to the small construction work. But the construction work will be conducted with consideration in dense residential area. In addition, low emission vehicles and noise reduction machine are used and water sprinkling is conducted so as not to affect air pollution and noise/vibration.
		(b) If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts? (c) If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts?	(b) N (c) Y	(b) The impact on natural environment is not hardly expected. (c) There is possibility of the impact on shop operating and passage of residents along the road. Mitigation measures will be implemented as above: living and livelihood.
6 Notes	Reference to Checklist of Other Sectors Note on Using Environmental Checklist	(a) Does the proponent develop and implement monitoring program for the environmental items that are considered to have potential impacts? (b) What are the items, methods and frequencies of the monitoring program? (c) Does the proponent establish an adequate monitoring framework (organization, personnel, equipment, and adequate budget to sustain the monitoring framework)? (d) Are any regulatory requirements pertaining to the monitoring report system identified, such as the format and frequency of reports from the proponent to the regulatory authorities?	(a) Y (b) Y (c) Y (d) N	(a) Monitoring program is prepared on air pollution, noise/ vibration, protected area/ ecosystem, living, traffic and working condition. (b) Public meeting and monthly observation survey in the site will be conducted. (c) EDC will establish the monitoring system and conduct monitoring with responsibility of the monitoring cost. (d) At present, the format and the frequency of the report are not provided from regulatory authorities.
		(a) Where necessary, pertinent items described in the Road checklist should also be checked (e.g., projects including installation of electric transmission lines and/or electric distribution facilities). (a) If necessary, the impacts to transboundary or global issues should be confirmed, (e.g., the project includes factors that may cause problems, such as transboundary waste treatment, acid rain, destruction of the ozone layer, or global warming).	(a) N (a) N	(a) Temporary access road is not constructed. (a) There is no possibility to impact on the transboundary or global environment due to the small construction work.

APPENDIX 6

MONITORING FORM

APPENDIX 6 : MONITORING FORM

[Before Construction]

1. Explanation of the Project Construction for Local Residence				
No.	Date	Place	Method	Note
1				
2				
3				
2. Cutting of Trees				
No.	Date	Place	Type of Tree	Reason
1				
2				
3				

[Under Construction]

No.	Item	Date	Place	Condition	Frequency
1	Dust				Monthly
	Noise				
	Protected Area/ Ecosystem				
	Traffic				
	Working Condition				
	Accident				
	Livelihood				
2	Dust				Monthly
	Noise				
	Protected Area/ Ecosystem				
	Traffic				
	Working Condition				
	Accident				
	Livelihood				
3	Dust				Monthly
	Noise				
	Protected Area/ Ecosystem				
	Traffic				
	Working Condition				
	Accident				
	Livelihood				

APPENDIX 7

MINUTES AND ATTENDANCE LISTS OF STAKEHOLDER MEETINGS

APPENDIX 7 : MINUTES AND ATTENDANCE LISTS OF STAKEHOLDER MEETINGS

A. Bavet in Svay Teab District

1. Minutes

Date:	Friday, December 11, 2015	
Time:	9:00 AM - 10:30 AM	
Venue:	Svay Teab District Office	
Purpose:	<ol style="list-style-type: none"> 1. Public Disclosure for Stakeholders about the project; 2. Collection of Stakeholders' opinions on the Project and Expected Environmental Impacts and Mitigation. 	
Attendees: (20 persons)	JICA Study Team	2 persons
	CEC Coordinator	2 persons
	Local Authority	12 persons
	EDC Phnom Penh	3 persons
	EDC Svay Rieng	1 person
Outcome		
The meeting was chaired by Mr. Hay Chanoat , Deputy Governor of Svay Teab District.		
Mr. Hai Chamnat Deputy Governor of Svay Teab District	Good morning. I much appreciate and thank you for your present in today's meeting. As I got information from EDC, JICA planned to construct new power line across our district, and we are glad to hear this news.	
Mr. Din Sakal EDC Phnom Penh	Good morning and how do you do. I am very pleased to meeting you all here. Thank you and welcome for your participation today. I would like to inform that this project has started a few months earlier this year and planned to finish in mid-2018. So after the presentation, we will seek resolutions to mitigate the impacts.	
Mr. Svay Borin CEC	Made the presentation.	
Discussion Session		
Mr. Hai Chamnat Deputy Governor of Svay Teab District	After the presentation, I would like to raise interesting issues concerning with Mr. the village heads and Commune council members presenting in this meeting. So we are parts of cooperation. As highlighted in the presentation, both environmental and social concerns are raised, so as local authorities, if you have, in your area, any doubts or concerns please speak out and we will discuss. This is a new project in addition to existing ones. So we will say that positive impacts will actually have and increasingly, but simultaneously it may also produce some degrees of adverse effects. So I will handle this opportunity to local authorities that encountered problems, please share your opinions or doubts and we will discuss to enable this project feasible. Recently we all knew that access to electricity is still not adequate or satisfy to population's requirement yet. Therefore, as representative from EDC Svay Rieng is here, eventually as the actual demand is so huge, there are load shedding as a consequence. This is the problem, and now we got this project additionally and if we consider to the future this project still cannot cope with requirement but we understand that this project will be a step to relief the constraint. So please raise your questions, Thank you. Especially Kandieng Reay Commune, you got a lot of households along the road which the distribution line planned.	
Mr. Has Samon Deputy Chief of Kandieng Reay Commune	<p>How much is the span from road's centerline?</p> <p><u>Answered by Mr. Din Sakal, EDC</u></p> <p>The ROW for national road 1 digit is 30 m from centerline. And the pole will be erected within the last 2 or 3 m at the outmost depends on reality. Thanks to the</p>	

	flexibility and the pole size is small so its effects will be least and I don't think it will affect people's mind.
Village head 1	How about existing big settlements within the ROW? <u>Answered by Mr. Din Sakal, EDC</u> The resolution will follow previous project solution patterns and/or further discussion with Provincial department of public works and transport and other relevant parties.
Mr. Hai Chamnat Deputy Governor of Svay Teab District	<u>Suggestion:</u> For populated/market areas (Prasaut and Chiphu) it is better and safer to bring the distribution line underground. <u>Answered by EDC, Mr. Din Sakal</u> Thank you very much for the suggestions and feedbacks. I will bring this suggestion to JICA study team for consideration.
Village head 2	Will there be any land acquisitions in this project? <u>Answered by EDC, Mr. Din Sakal</u> No there won't. Because the pole will be constructed within the Right-Of-Way (ROW) which is the state land. Only some trees may need to be trimmed or removed. And we will ask your help to negotiate with the owners. <u>Emphasized by Mr. Hay Chanoat</u> I just would like to inform that EDC just convey the project to this province, so in the construction phase it will concern with local authorities, if local authorities do not help resolve the issues (such as permission to trim or cut tree from owners, etc.), the construction process will not go smoothly and in timely manner. So I would like to ask to village heads that: Could you coordinate with affected people? As the pole shall not be installed on private land but within ROW which is the state land, and as you can see, the Ministry of Public Works and Transport (MPWT) already marked ROW boundary along the national road and people also understood this. Just we want to know that if we install electric pole within ROW, is there any problem with the people or not? As I noticed in the past problems like trimming of regrown trees by EDC personnel were no complaint from the owners.
Mr. Koeung Thuok Deputy Chief of EDC Svay Rieng	Please the villagers do not confuse between high voltage transmission line compensation with this medium voltage one. Because the high voltage transmission line affected private land but this medium voltage shall be constructed within the ROW set by Ministry of Public Works and Transport (MPWT) and no violation on private land therefore there will be no dispute.
Mr. Hai Chamnat Deputy Governor of Svay Teab District	Please inform villagers how we have been doing as mentioned by Mr. the Deputy of EDC Svay Rieng, although we can say it is a success, please Mr. The village chief concerned, as my suggestion, subsequently defuse information to villagers to understand from now on about this procedure, that we are doing the development works and the benefits will be to the people. Another thing as my suggestion to this JICA project, please take consideration on populated/market areas. Beside this, I can draw conclusion that there will be no serious problem. Because we have been doing similar projects, particularly EDC Svay Rieng, there was no issue with the tree clearing after thorough explanation to the villagers. On behalf of District authorities, I would like to thank for the project as it is considered one of the development projects to improve population livelihood.
Mr. Hay Chanoat Deputy Governor of Svay Teab District	On behalf of District Administration and myself, I would like to say thank you very much that this project falls on population in our Svay Teab district as well as for the whole Svay Rieng province, as we are receiving a new project to participate in poverty alleviation and take part in the country development. I would like to thank and close the meeting.

2. Attendance List

No.	Name	Position	Belongings
1	Hai Chamnat	Deputy Chief	Svay Teab District
2	Koeung Thuok	Deputy Chief	EDC Svay Rieng
3	Duong Phirom	Engineer	CEC
4	Svay Borin	Engineer	CEC
5	Yoshiko Oishi	Environmental Engineer	NEWJEC
6	Ryousuke Ishii	Technical Engineer	NEWJEC
7	Din Sakal	Staff	SEPRO, EDC
8	Ros Nita	Staff	SEPRO, EDC
9	Lim Chakriya	Secretary	CPPD, EDC
10	Som Somnang	Chief	Daeum Pou Village
11	Pen Saoum	Chief	Lieb Village
12	Sola San	Chief	Banteay Village
13	Ream Dok	Deputy Chief	Prasoutr Ti Pir Village
14	Cham Soum	Chief	Prey Samphor Village
15	Nawf Khan	Chief	Kbal Thnal Village
16	Has Samon	Deputy Chief	Kandieng Reay Commune
17	Loeuk Channa	Deputy Chief	Romeang Thkaol Commune
18	Keo Chhon	Deputy Chief	Sambuor Commune
19	Koy Samath	Chief	Toul Angkob Village
20	Phak Saphuon	Deputy Chief	Prasoutr Ti Muoy Village

B. Bavet in Bavet District

1. Minutes

Date:	Friday, December 11, 2015	
Time:	2:00 PM - 3:13 PM	
Venue:	Bavet District Office	
Purpose:	<ol style="list-style-type: none"> 1. Public Disclosure for Stakeholders about the project; 2. Collection of Stakeholders' opinions on the Project and Expected Environmental Impacts and Mitigation. 	
Attendees: (30 persons)	JICA Study Team	2 persons
	CEC Coordinator	2 persons
	Local Authority	22 persons
	EDC Phnom Penh	3 persons
	EDC Svay Rieng	1 person
Outcome		
The meeting was chaired by Mr. Seng Seula , Bavet District Governor.		
Mr. Seng Seula Bavet District Governor	Good morning. Thank you for your present in today's meeting. As I got information from EDC, JICA planned to construct 22kV distribution line across our region. Therefore I would like to invite EDC as well as JICA study team to present in detail regarding technical issues and so on.	
Mr. Din Sakal EDC Phnom Penh	Good morning and how do you do. I am EDC representative from Phnom Penh and will assist hosting today's meeting. Thank you and welcome for your participation today. JICA has a distribution project at 22kV which will connect from Chrak Mtes grid substation to Svay Rieng provincial town and from the same grid substation to Bavet City. The two distribution lines have a total length of about 37 km. After the meeting, if we agree with the project, this project will happen and will help improve electricity supply to Special Economic Zones (SEZs) in this area as well as SEZs nearby Chrak Mtes grid substation.	
Mr. Svay Borin CEC	Made the presentation.	
Discussion Session		
Mr. Koeung Thuok Deputy Chief of EDC Svay Rieng	<p>I would like to share my opinion, I would like to salute all levels of leadership of villages, communes and districts. Firstly, I would like to pay respect to your Excellency the City Governor and JICA Study Team, Mr. and Mrs. attending this meeting. In the past and recently, electricity infrastructure development works, primarily regarding electric pole installation; if we follow the standard, there were some difficulties as well. So let me enlighten to the village/commune leaderships that we erect poles according to standard that specialized department provides us. As an example, the Department of Public Works and Transport (DWPT) set 30m ROW for one-digit road, we follow that but sometimes it was not 100% correct. Secondly, concerning with trees belonging to the villagers; as this project shall be constructed alongside of the national road, within the ROW, so obstructed trees may be trimmed or removed. Please the local authorities seek proper methodologies to resolve. Because EDC side will proceed the installation of course, but for the issue, it depends on local authorities' participation. If we can resolve the issues smoothly, the project implementation will be fast tracked as well. As we know Bavet city imports power from Vietnam 16 MW only supply up to the dry port and still not sufficient. And down the Konpong Ro through Svay Teab and Chiphu toward Chantrea district, 7 MW more are importing. And now EDC sends power 4 MW from Phnom Penh to Sovanaphum power station of Svay Rieng province and still not enough. As we can see there are many development activities in this province especially SEZ related ones. There are eight SEZs and only four of them are operational, the rests are in need of power supply. Therefore the</p>	

	<p>government pays much attention on transmission and distribution expansion to send power from Phnom Penh system to a new grid substation in Chrak Mtes Sangkat; and for the transmission towers, in Svay Rieng the resettlement is ongoing. This transmission line passes through private lands other than the Right-of-Way. So compensation required. But this 22kV distribution project, the pole will be installed within the ROW which is the land of the state, therefore no resettlement nor land acquisition. So please share your opinions and explain the villagers the differences.</p>
<p>Mr. Seng Seula Bavet District Governor</p>	<p>So, through the presentation and suggestion from provincial EDC, concerned issue is that the line will cross populated areas, so I request your opinions how to facilitate with the residents? Also the affected trees, for the sack of common benefit. So please Chrak Mtes Authorities, the village heads, share your comments.</p>
<p>Mr. Kam Din Deputy Chief of Toul Ampil Village</p>	<p>In our Toul Ampil village of Chrak Mtes Sangkat, there may few trees affected but many households as it is populated area (Chiphu market) and there are big and tall houses within ROW.</p>
<p>Mr. Huot Samay Chief of Chrak Mtes District</p>	<p>I would like to clarify that my district, in particular, there is a populated area called Chiphu market. Houses are very dense and in continuous manner so that it is difficult to find available spot to mount the electric pole. For trees and plants it is not a big deal, the residents will donate. To the east of Chrak Mtes substation, there is no problem because the houses are very sparse, and concerning trees, the district already disseminates information to the villagers, ROW from road centerline is 30 m, therefore affected trees should be clear in order everyone to have access to electricity.</p>
<p>Mr. Koeng Thouk Deputy of EDC Svay Rieng</p>	<p>To deal with problem in Chiphu market area, as my suggestion, we can do like this: all existing LV poles in the market area to be replaced by new higher MV poles, and existing LV conductors be strung below new MV conductors of this project. The issues then solved.</p>
<p>Mr. Din Sakal EDC Phnom Penh</p>	<p>So after discussion, I can draw conclusion that the problem in market area is solved. Local authorities agreed and happy with the project and will cooperate with EDC and the construction teams as well to make the project go smoothly and success. For problem in market area, we agreed with the solution proposed by Mr. the Deputy of EDC Svay Rieng. As he mentioned poles in the market area are not follow ROW standard location of 28 – 30 m from road centerline, so we just follow existing ones (that is about 15m from road centerline) and after leaving market area, the pole will be returned to its appointed location.</p> <p>On behalf of Bavet City authority and Sangkat/village authorities alike and on behalf of Bavet City population, I deeply thank for the support of JICA in the preparation of this distribution line 22kV project. This is a work to speed the improvement of electricity supply in Bavet City to a more sufficient level and we hope that we will receive this new achievement soon.</p>

2. Attendance List

No.	Name	Position	Belongings
1	Seng Seula	Chief	Bavet District
2	Koeung Thuok	Deputy Chief	EDC Svay Rieng
3	Din Sakal	Staff	SEPRO, EDC
4	Yoshiko Oishi	Environmental Engineer	Newjec
5	Ryousuke Ishii	Technical Engineer	Newjec
6	Ern Somnang	Deputy Chief	EDC Bavet
7	Koeum Chheom	Chief	Bavet Commune
8	Huot Samey	Chief	Chrak Mtes Commune
9	Ros Nita	Staff	SEPRO, EDC
10	Lim Chakriya	Secretary	CPPD, EDC
11	Van Vorn	Chief	Dambouk Chuor Village
12	Kong Saroeun	Assitant	Sala Tean Village
13	Mok Savoth	Chief	Kampout Pras Village
14	Kam Din	Deputy Chief	Tuol Ampil Village
15	Phich Savom	Deputy Chief	Thanl Cheat Village
16	Each Khorn	Chief	Kamport Jrouk Village
17	Chan Chantha	Deputy Chief	Prey Tob Village
18	Each Sakhon	Chief	Sameakki Village
19	Men Poek	Chief	Ang Sala Village
20	That Pout	Chief	Prey Tob Village
21	Chey Sovann	Chief	Thmei Village
22	Khaun Doeun	Chief	Prey Angkuhn Commune
23	Cahn Then	Chief	Trapeng Phlong Village
24	Svay Borin	Engineer	CEC
25	Duong Phirom	Engineer	CEC
26	Thaung Neath	Chief	Ta Pov Village
27	Chan Vanna	Chief	Village
28	Than Poul	Member	Bavet District
29	Tea Thit	Chief	Bavet Ler Village
30	Chhum Thoum	Chief	Chrok Leav Village

C. Poipet

1. Minutes

Date:	Tuesday, December 15, 2015	
Time:	9:30 AM - 12:00 AM	
Location:	Ou Bei Choan Commune Office	
Purpose:	<ol style="list-style-type: none"> 1. Public Disclosure for Stakeholders about the project; 2. Collection of Stakeholders' opinions on the Project and Expected Environmental Impacts and Mitigation. 	
Attendees: (35 persons)	JICA Study Team	2 persons
	CEC Coordinator	2 persons
	Local Authority	25 persons
	EDC Phnom Penh	4 persons
	EDC Banteay Mean Chey	1 person
	Provincial Department of Mines and Energy, Banteay Mean Chey	1 person
Outcome		
The meeting was chaired by Mr. Soung Mouen , Commune Chief of Ou Bei Choan Commune		
Mr. Soung Mouen Chief of Ou Bei Choan Commune	Good morning, Mr. and Mrs. the district heads, Commune chiefs, village heads, ladies and gentlemen presenting in today's meeting. The purpose of this meeting is public consultation meeting, information disclosure regarding power distribution project granted by JICA. This is what I understand at the first sight and please excuse me, and for details issues please EDC and JICA representatives provide us thorough explanation. Thank you for today's gathering, as you see this is a good practice that we discuss before doing the works and that is the general rule we have implemented. If a work proceeded without consultation, discussion, without opinion sharing, that work would not be a success and inefficient.	
Mr. Din Sakal EDC Phnom Penh	Good morning and how do you do. I am EDC representative from Phnom Penh from Department of Corporate and Planning and will assist hosting today's meeting. JICA has proposed a distribution project at 22kV in three border towns/province which includes Bavet, Poipet and Koh Kong. And it is required to conduct consultation meetings with stakeholders, this means relevant project areas. EDC need your support and good cooperation. After the meeting, if you agree with the project, this project will happen and will help improve economic situation in this area.	
Mr. Svay Borin CEC	Made the presentation.	
Discussion Session		
Mr. Sao Born Council Member of Koub Commune	<p>I have a question that in the past, laterite roads (unpaved road) in villages and communes have a ROW of 15m in total from one side to the other side, but now ROW is 15m from centerline to both sides, so this affects villagers' houses and crops. I would like to request upper level authorities resolve this issue.</p> <p><u>Answered by Mr. Din Sakal, EDC</u></p> <p>Please don't worry about village/commune road, as this project will construct along 2-digit and 3-digit national road, but as confirmation from Provincial Department of Public Works and Transport yesterday, the 3-digit road that the project will construct along, has been re-evaluated as 2-digit road (to be upgraded) because of its important role in the region. Therefore, now ROW is 25 m from centerline, and in the whole project here, the ROW is 25m.</p>	
Mr. Soung Mouen Chief of Ou Bei Choan Commune	I have a question too. I am still not clear about this project. I saw that existing distribution lines with three bare conductors seem pass through nearly every communes from the provincial town, and this project will concern only Kaub and	

	<p>Ou Bei Choan Commune, so will this project construct different type of distribution line? And is there different substation or else?</p> <p><u>Answered by Mr. Din Sakal, EDC</u> This project will improve electricity supply in the area, it means that existing infrastructure is not yet sufficient and still cannot meet consumer demands and JICA oversees that there will be more increase in demand in the future, therefore this project was proposed.</p>
<p>Mr. Rann Chamrouen Chief of Toul Pongro Village Head</p>	<p>I have questions. First issue, conductor installation: will the new conductors be installed on existing pole or on new one? Second issue, if new poles be installed, it will concern with trees that the villagers grew, so how should we resolve this?</p> <p><u>Answered by Mr. Din Sakal, EDC</u> Regarding poles and conductors, the project is going to provide whole brand new. Existing infrastructure shall be intact. And new construction will have new impacts, more or less, especially trees. As we know, within the ROW, there will be trees and small commercial stores. However, EDC will try to avoid the impacts as much as possible on economy, i.e. commercial activities, and on environment, i.e. tree cutting/clearing. In case of tree clearing, we will avoid cutting but trying to minimize to only branch trimming where possible. If cutting is unavoidable, EDC will ask your understanding and your cooperation as local authorities to facilitate the process.</p>
<p>Mr. Keat Houll Chief of Phsar Kandal Commune</p>	<p>My question is different. In this JICA project, the four villages to be crossed by the distribution line in my commune are Ou Neang, Prey Kob, Ou Reusse, and Tuol Pongro until national road No. 5. So I would like to ask that new distribution line will construct along road no. 58 (currently being constructed by a Chinese company) or on old road. I just want to inform that if running aside this new road no. 58, there will be no issue, I will work for you. When the Chinese are constructing the road, as inter-ministerial resolution, 50m width ROW (25m to either side) resettlement has been done. So I ask your clarification when I come back, as my village heads are here, I will disseminate the information in our monthly meeting. In the 50 m ROW (25m to both side) crops planting is prohibited. And if running beside other roads, please EDC clarifies to acknowledge me to be able to cooperate with the project.</p> <p><u>Answered by Mr. Din Sakal, EDC</u> This road is road no. 58, so please help coordinate with local residents.</p>
<p>Mr. Naov Sovat Council Member of Ou Bei Chaon Commune</p>	<p>In case of today's meeting about project affected on population's assets along road no. 58, I have questions to EDC to clarify as follows. About pole behind houses, for example, house built since 2010 and if electric poles installed in 2012, my question is that how the national level of resettlement committee facilitate the affected households?</p> <p><u>Answered by Mr. Din Sakal, EDC</u> Regarding your first question, We the electricity utility construct power line within the ROW determined by Ministry of Public Works and Transport (MPWT), therefore no resettlement. In addition, we try to minimize impacts as much as possible. In the construction phase, we will form a committee to monitor this construction include members from relevant institutions.</p>
<p>Mr. Din Sakal EDC</p>	<p>So after discussion, let me summarize that the impacts is least. Local authorities agreed and happy with the project and will support and cooperate with EDC to make the project happen to improve power supply stability in this area and improve economic activities alike.</p>
<p>Mr. Soung Mouen Chief of Ou Bei Choan Commune</p>	<p>Thank you for today's meeting, as we have questions and answers session, we had a lot of talks and discussions and I think it makes this meeting agreeable. And for me, what are the important points and you all agreed with everything that make improvement, for example, electricity supply that is still insufficient, EDC as well as JICA improves the quality of supply. Therefore thank you for today's discussion, important thing is we agreed to work together for the development.</p>

2. Attendance List

No.	Name	Position	Belongings
1	Soung Mouen	Chief	Ou Bei Choan Commune
2	Yoshiko Oishi	Environmental Engineer	NEWJEC
3	Ryousuke Ishii	Technical Engineer	NEWJEC
4	Chev Narin	Deputy Chief	EDC Banteay Meanchey
5	Din Sakal	Staff	SEPRO, CPPD, EDC
6	Ros Nita	Staff	SEPRO, CPPD, EDC
7	Sok Lin	Staff	MIST, CPPD, EDC
8	Lim Chakriya	Deputy Chief	Secretariat, CPPD, EDC
9	Svay Borin	Engineer	CEC
10	Duong Phirom	Engineer	CEC
11	Von Eang	Official	DME
12	Theb Vasey	Deputy Chief	Ou Bei Choan Commune
13	Soam Saroeun	Council	Nimit Commune
14	Keat Houll	Chief	Phsar Kandal Commune
15	Rann Chamrouen	Chief	Toul Pongro Village
16	Naov Sovat	Council	Ou Bei Choan Commune
17	Meng Samet	Council	Ou Bei Choan Commune
18	Preap Sam Oun	Chief	Nimit II Village
19	Nak Noum	Deputy Chief	O Kai Dorn Village
20	Bun Sorng	Deputy Chief	Ou Chrov Village
21	Yun Chann	Chief	Koan Trei Village
22	Pen Khorn	Deputy Chief	Mak Heun Village
23	Maen Men	Assistant	Prey Kob Village
24	Leang Song	Chief	Prey Sar Village
25	Sao Born	Council	Koub Commune
26	Chea Sovanny	Chief	Tumnob Dach Village
27	Yim Pov	Chief	Seila Khmaer Village
28	Noun Choub	Chief	Ou Bei Choan Village
29	Soun Soeung	Chief	Chouk Chey Village
30	Bun Srun	Chief	Banteay Thmei Village

C. Koh Kong

1. Minutes

Date:	Thursday, December 24, 2015	
Time:	8:30 AM - 10:30 AM	
Location:	Koh Kong Provincial Hall	
Purpose:	<ol style="list-style-type: none"> 1. Public Disclosure for Stakeholders about the project; 2. Collection of Stakeholders' opinions on the Project and Expected Environmental Impacts and Mitigation. 	
Attendees: (29 persons)	JICA Study Team	2 persons
	CEC Coordinator	2 persons
	Local Authority	21 persons
	EDC Phnom Penh	4 persons
Outcome		
The meeting was chaired by Mr. Sun Dara , Deputy Governor of Koh Kong Province.		
Mr. Sun Dara Deputy Governor of Koh Kong Province	<p>Good morning, Mr. and Mrs. the representative of concerned departments/offices and local authorities presenting in today's meeting. I would like to salute the representatives of EDC and JICA study team and delegate. Today we will discuss about proposed distribution project for southern economic corridor, which will cross our Koh Kong territory. I warmly welcome the delegate before the presentation by the expert to make us understand the project. I take this chance to request to local authorities, if there is issue in local communities, please raise your questions or doubts to the technical experts to enable us understand and ease in information dissemination and implementation especially issues concerning with the impacts on population, social and environmental impacts and etc.</p>	
Mr. Din Sakal EDC Phnom Penh	<p>Good morning and how do you do. I am EDC representative from Phnom Penh from Department of Corporate and Planning and will assist hosting today's meeting. JICA has proposed a distribution project at 22kV in three border towns/province which includes Bavet, Poipet and Koh Kong. This project aims to improve electricity supply in the areas as well as Special Economic Zones (SEZs). This project is granted by JICA. I hope this project will be realized to boost our overall economy especially in the three provinces, and hope that local authorities will cooperate with EDC and help coordinate with the population regarding impact mitigation.</p>	
Mr. Svay Borin CEC	Made the presentation.	
Discussion Session		
Mr. Pho Vibol Chief of Khemara Phomn District	<p>Please show us where exactly the distribution project will cross, as we are still not clear through the presentation and do not know whether our villages/communes will be passed by the project or not. We need clear information before the project can be proceed. It is only my opinion, thank you. And local authorities will have more questions to ask and discuss to make the project go smoothly.</p> <p><u>Answered by Mr. Din Sakal, EDC</u></p> <p>Please look at page no. 9, we have a figure indicated that the power line completely goes along the national road no. 48, from Koh Kong SEZs to Ta Pon Waterfall. It will traverse Mondul Seima district and Khemarak Phoumin. Communes/Sangkats crossed by the project include Pak Khlang, Smach Mean Chey and Stung Veang. Villages concerned are Neang Kok, Koh Por, Boeung Khun Chhang, 1st Village, 2nd village and Preaek Svay. For villages/communes not listed here still share benefit from this project as well.</p>	

<p>Mr. Hak Leng Chief of Mondul Seima District</p>	<p>According to the project information, this project will construct along national road no. 48 from special economic zone to Ta Porn Waterfall. For my district, it will traverse two villages of Pak Khlang commune, i.e. Cham Yeam and Neang Kok village. So I would like to ask that this line with approximate length of 14 km ends at Ta Porn Waterfall or continue to Phnom Penh. For this project location, I think there won't be a major problem as it goes along the national route and I already explained reasons to the population, as Mr. Ly Young Phat planned to expanse the road, I told the telecom company Metfone to relocate their poles to justify with 25 m ROW between the 24th and 25th meter. So how about this project installed location? At the 24th or 25th meter? So we can inform the villagers.</p> <p><u>Answered by Mr. Din Sakal, EDC</u> The proposed 22kV distribution line will end at Ta Porn Waterfall. For electric pole erection within the ROW, EDC will install at the last two meters of ROW boundary, i.e. at the 23rd meter. However this may vary according to actual situation. While in some cases, people constructed settlement into ROW, EDC will try to avoid impacts by joint inspection with relevant expertised departments, unfortunately EDC will bear cost of pole relocation to standard ROW alignment in the future. So we come today to ask authorities help coordinate to install poles at the final 23rd meter of ROW to avoid future relocation.</p>
<p>Mr. Sao Sintheon Deputy Director of Administrative Department, Koh Kong Provincial Hall</p>	<p>I would like to ask to clarify regarding level of electricity supply of this project. Is this project planned to distribute power to villages adjacent to national road no. 48 or else?</p> <p><u>Answered by Mr. Din Sakal, EDC</u> This project will construct only along national road no. 48, by JICA grant. About the final distribution, the Electricity Authority of Cambodia (EAC) will manage. As this region is serviced by licensee other than EDC, he/she will be responsible for power network expansion. If EAC grant final distribution to end users to EDC, EDC of course will do the expansion works.</p>
<p>Mr. Sao Sintheon Deputy Director of Administrative Department, Koh Kong Provincial Hall</p>	<p>This issue concerns with the price. It concerns with people's livelihood and distribution transformers. We want proper rule, for example, the licensees, we want a fair tariff for rural population affordability as Mr. the Prime Minister insisted that all village must have access to electricity. If talk about tariff, it concerns with this distribution expansion project as well. Please consider this issue as well, as population will bear higher cost if electricity distributed by bulk purchaser and not directly from EDC. This is just my opinion.</p> <p><u>Answered by Mr. Din Sakal, EDC</u> Concerning with this point, EDC has a role in power supply, a role to find energy sources, build power generating plants to distribute and expand our networks. EDC tries to manage its profit to expand power infrastructure, together with grants and loans. However, EDC cannot violate into areas under other licensees granted by EAC. EDC cannot poke into other licensee's business even if it see shortage or poor of supply and infrastructure within any licensed zones, as they also have contract with EAC. I hope that in the near future electricity supply will be stable, independent and tariff will be more affordable, as you can see, big hydropower plants locate in this province, so the people of Koh Kong province should deserve a lower tariff than anywhere else.</p>
<p>Mr. Hak Leng Chief of Mondul Seima District</p>	<p>I would like to add something regarding development of distribution system in my district. There are three communes in the district. In general electricity distribution, only one commune being electrified. The other two, Tuol Koki and Peam Krasob are not. Pak Khlang commune has 7 villages; only 5 of them being electrified, the other two, Boeung Kachhang and Kog Pao are not yet electrified. So I would like to raise question to EAC or EDC alike, will you have any contract with power investors from the EAC, to urge the investors expand distribution facilities to our non-electrified villages/communes? The other thing, I would like to suggest to EDC and JICA, when you have project, concerning with my district authority, please inform us before hand in order everybody aware of and help cooperate.</p>

<p>Mr. Pho Vibol Chief of Khemara Phomn District</p>	<p>Salute. My name is Phu Vibol, Koh Kong City Governor. I deeply welcome, thank you and support distribution project within our Krong Khemarak Phumin as well as Koh Kong province granted by JICA. Whatever project, from JICA or from the government, city authorities will always cooperate regarding a number of affected issues incurred by the projects. Our city has “Plan de Mass” for governance including road networks with different sizes. I will take part in the cooperation to construct this distribution line, as there still a lack of electricity supply as well in our city. Although it bears a name as a city, we just had proper power line constructed passing the city hall last month. In the past, people used small wooden poles to connect electricity from a far distance. Another request is that, please help Smach Mean Chey and Stung Veang Sangkat. How far can you help Smach Mean Chey Sangkat, which villages? As previously mentioned, Boeng Kachhang does not have access to electricity, and a number of remote villages still have no electricity as well. Thirdly, we would like to know the tariff, how much will the connection fee for residential household? Fourth issue concerning with electrified communes, may you help further connect nearby villages as well? Such as reach Prey Svay and continue to surrounding villages. We also have a village in mangrove forest requiring development. It’s Boeung Kayak village and also have no electricity. Please EDC and JICA help develop this region as well. Another issue concerns with cooperation, City authorities will gladly cooperate with JICA. I would like to inform the meeting that recently, an optical fiber company laid underground cables in the city. Provincial hall informed us also, to cooperate with. Authority just submitted letter to me and the company started to works. So, I simply halted their operation for a while. The company dug roadside, some in front of houses, crossing roads, they did not properly restore the roads/roadsides to the initial condition and left. I halted the company for a while and made agreement that after works complete, the company must clean and restore roads/roadsides to initial condition. This is an example. Fifth issues concerning with villages, as most village heads present here, please raise your issues, doubts, needs or suggestions to EDC.</p> <p><u>Answered by Mr. Din Sakal, EDC</u></p> <p>Thank you to hear that Mr. the city governor warmly welcomed and will cooperate with the project. I am happy to hear that. Unfortunately, We EDC cannot interfere other license zone that already granted by EAC. The expansion works likely to be done by the Licensee.</p> <p>Regarding tariff, as I explained earlier, EDC has nothing to do with but EAC.</p> <p>Concerning with roadsides/roads digging, we have only a small portion of line to go underground around toll bridge. The rest will be overhead line requiring about 1m by 1m to erect pole. So the impacts should be less.</p> <p>Regarding your suggestion to connect more dark villages, we will inform JICA study team to consider the actual needs with available budget.</p>
<p>Mr. Sao Sintheon Deputy Director of Administrative Department, Koh Kong Provincial Hall</p>	<p>Let me salute to the whole meeting, especially JICA, the grant provider and as well as EDC delegate. Mr. Sao Sinthoun insisted and emphasized same suggestions raised by Koh Kong City Governor and Mondul Seima District Head.</p>
<p>Mr. Din Sakal EDC</p>	<p>As project a coordinator, I saw local authorities strongly support this project, so EDC and JICA is happy to your good cooperation, so I hope this project will be realized soon in the three provinces. Thank you for your corporation and supports.</p>
<p>Mr. Sun Dara Deputy Governor of Koh Kong Province</p>	<p>Thank you JICA team and EDC for taking your valuable time to study this project in our province. My last suggestion is that if there is project please inform local authorities so we can help cooperate in collecting more precise data or information. Finally, thank you JICA study team and colleagues and everybody present in this meeting, and may the project be a success as planned. I would like to thank and close the meeting.</p>

2. Attendance List

No.	Name	Position	Belongings
1	Sun Dara	Deputy Chief	Koh Kong Province
2	Pho Vibol	Chief	Khemara Phomn District
3	Hak Leng	Chief	Mondul Seima District
4	Sao Sintheon	Deputy Director	Administrative Department, Koh Kong Province
5	Ouk Sota	Director	Interim Department, Koh Kong Province
6	Eav Kosal	Chief	Pak Khlang Commune
7	Khuon Keng	Deputy Chief	Dong Tong Commune
8	Khong Vichhean	Chief	Stueng Vearng Commune
9	Ryouske Ishii	Technical Engineer	NEWJEC
10	Yoshiko Oishi	Environmental Engineer	NEWJEC
11	Svay Borin	Engineer	CEC
12	Din Sakal	Staff	SEPRO, CPPD, EDC
13	Ros Nita	Staff	SEPRO, CPPD, EDC
14	Lim Chakriya	Deputy Chief	Secretariat, CPPD, EDC
15	Sok Lin	Staff	MIST, CPPD, EDC
16	Duong Phirom	Engineer	CEC
17	Sok Chantry	Representative	Smach Mean Chey Commune
18	Ou Thy	Chief	Pak Khlang II Village
19	Vin Savat	Chief	Kaoh Pao Village
20	Soeung Sinat	Deputy Chief	Phum Bey Village
21	Kong Nay	Deputy Chief	Phum Ti Pir Village
22	Le Lavan	Chief	Preak Svay Village
23	Heng Soly	Chief	Finance Office, Koh Kong Province
24	Sok Chhiv	Chief	Pak Khlang Mouy Village
25	Nget Luch	Chief	Boeng Khum Chhang Village
26	Ros Sarin	Chief	Pak Khlang III Village
27	Kim Lai	Chief	Cham Yeam Village
28	Po Sokunnary	Deputy Chief	Dang Tong Village
29	Vann Saly	Chief	Dang Tong Village

2nd Stakeholder Meeting

A. Bavet in Svay Teab District

1. Minutes

Date:	Wednesday, May 25, 2016	
Time:	9:00 AM - 10:30 AM	
Venue:	Svay Teab District Office	
Purpose:	1. Conduct presentation on the results of studies for the project; 2. Collect stakeholders' opinions on the project and expected environmental impacts and mitigation.	
Attendees: (33 persons)	Local Authority	17 persons
	DME Official	2 persons
	Residents	7 persons
	EDC Phnom Penh	4 persons
	EDC Svay Rieng	1 person
	JICA Study Team	4 persons
Main Opinions		
Opinion 1	Safety clearance of the line from house and plant.	
Ans.	According to EDC Standard, the clearance is 2.5m above building structure and 2m from plant.	
Opinion 2	Possibility of avoiding dense- building areas like Prosot and Chiphou.	
Ans.	EDC will continue cooperating with JICA Study Team to meticulously study to minimize impacts on residents there.	
Opinion 3	Solution to owner's objection to cutting down his trees.	
Ans.	Firstly, local authorities will facilitate and explain the owner. If the objection persist, EDC will assess the benefits of the trees and proceed with compensation procedure.	
- Positive conclusion with local authorities' and residents' support of the project		

DME: Department of Mines and Energy

2. Attendance List

No.	Name	Position	Belongings
1	Hai Chamnat	Deputy Chief	Svay Teab District
2	Tim Ridhaska	Inter-Sedoral	Svay Rieng District
3	Koeung Thuok	Deputy Chief	EDC Svay Rieng
4	Kenichiro Yagi	Chief Consultant	JICA Study Team
5	Yoshiko Oishi	Environmental Engineer	JICA Study Team
6	Bin Sopheakda	Deputy of Sector	SEPRO, EDC
7	Ros Nita	Staff	SEPRO, EDC
8	Tuy Soklin	Staff	MIST, CPPD, EDC
9	Lim Chakriya	Deputy Chief	CPPD, EDC
10	Kong Sary	Administrative Director	Svay Teav District
11	Sao Youn	Chief	Tonlieng Village
12	Nay Sany	Resident	Prey Samphor Village
13	Ek Sitha	Resident	Tonlieng Village
14	Meas Uk	Chief	Knal Village
15	Cham Soum	Chief	Prey Samphor Village
16	Sak Yong	Deputy Chief	Lieb Village
17	In Sokha	Resident	Lieb Village
18	Chan Som	Deputy Chief	Daeum Pou Village
19	Loeuk Channa	Deputy Chief	Romeang Thkaol Commune
20	Reoum Dok	Chief	Prosout 2 Village
21	Lim Somat	Resident	Prosout 2 Village
22	Som Somnang	Chief	Daeum Pou Village
23	Mouk Savuth	Chief	Prosout 1 Village
24	Sola San	Chief	Banteay Village
25	Koy Samath	Chief	Tuol Angkob Village
26	Tep Sophea	Resident	Tuol Angkob Village
27	Khleang Sopheak	Chief	Thnal Kaeng Village
28	Sek Phora	Resident	Tuol Angkob Village
29	Has Samon	Assistant	Kandieng Reay Commune
30	Meas Samit	Resident	Prey Samphor Village
31	Keo Chhon	Assistant	Sambuor Commune
32	Ong Theoun	Deputy Director	MME Department
33	Neng Rattana	Official	MME Department

B. Bavet in Bavet District

1. Minutes

Date:	Wednesday, May 25, 2016	
Time:	2:30 PM - 4:00 PM	
Venue:	Bavet District Office	
Purpose:	<ol style="list-style-type: none"> 1. Conduct presentation on the results of studies for the project; 2. Collect stakeholders' opinions on the project and expected environmental impacts and mitigation. 	
Attendees: (33 persons)	Local Authority	17 persons
	DME Official	2 persons
	Residents	6 persons
	EDC Phnom Penh	4 persons
	EDC Svay Rieng	2 person
	JICA Study Team	2 persons
Main Opinions		
Opinion 1	No objection for cutting trees	
Opinion 2	Impacts of line construction on residents and their buildings at Chiphou.	
Ans.	EDC will continue cooperating with JICA Study Team to meticulously study to minimize impacts on residents there.	
- Positive conclusion with local authorities' and residents' support of the project		

2. Attendance List

No.	Name	Position	Belongings
1	Ong Sa	Deputy Chief	Bavet District
2	Kenichiro Yagi	Chief Consultant	JICA Study Team
3	Yoshiko Oishi	Environmental Engineer	JICA Study Team
4	Koeung Thuok	Deputy Chief	EDC Svay Rieng
5	Bin Sopheakda	Deputy of Sector	SEPRO, EDC
6	Ros Nita	Staff	SEPRO, EDC
7	Tuy Soklin	Staff	MIST, CPPD, EDC
8	Lim Chakriya	Deputy Chief	CPPD, EDC
9	Pen Phearun	Administrative Chief	Bavet District
10	Ngoun Phalla		Prey Tob Village
11	Thov Ron	Deputy Chief	Prey Angkuhn Commune
12	Huot Samey	Chief	Chrak Mtes Commune
13	Ok Bunna	Deputy Chief	Bavet District
14	Neng Pattana	Staff	MME Department
15	Ok Bonat	Staff	Bavet District
16	Ong Thoeun	Deputy Chief	MME Department
17	Tim Vichaka	Officer	Svay Rieng Province
18	Sam Suth	Head Assistant	Ang Sala Village
19	Chan Borin	Head Assistant	Prey Tob Village
20	Tith Puth	Chief	Prey Tob Village
21	Men Poeuk	Chief	Ang Sala Village
22	Preap Chan	Chief	Prey Pdao Village
23	Keo Le	Deputy Chief	Phum Thmei Village
24	Chan Chantha	Deputy Chief	Prey Tob Village
25	Neth Sok		Prey Tob Village
26	Krouch Sophea	Chief	Phum Thmei Village
27	Ly Huy		Tuol Ampil Village
28	Meas Saroen		Tuol Ampil Village
29	Srey Socheat	Deputy Chief	Tuol Ampil Village
30	Chan Nov	Deputy Chief	Phum Thmei Village
31	Choam Sarin		Tuol Ampil Village
32	Kam Din	Deputy Chief	Tuol Ampil Village
33	Prak Pov	Administrative Deputy Chief	Bavet District

C. Poipet

1. Minutes

Date:	Friday, May 27, 2016	
Time:	9:30 AM - 11:00 AM	
Venue:	Ou Bei Chaon Commune Office	
Purpose:	<ol style="list-style-type: none"> 1. Conduct presentation on the results of studies for the project; 2. Collect stakeholders' opinions on the project and expected environmental impacts and mitigation. 	
Attendees: (116 persons)	Local Authority	13 persons
	DME Official	3 persons
	Residents	92 persons
	EDC Phnom Penh	4 persons
	EDC Banteay Meanchey	2 person
	JICA Study Team	2 persons
Main Opinions		
Opinion 1	Residential request for installing poles 15m from the center line for Road No.58.	
Ans.	EDC will abide by approval of Ministry of Transportation and Public Works on the ROW of Road No.58.	
- Positive conclusion with local authorities' and residents' support of the project		

2. Attendance List

No.	Name	Position	Belongings
1	Soung Mouen	Chief	Ou Bei Choan Commune
2	Kenichiro Yagi	Chief Consultant	JICA Study Team
3	Yoshiko Oishi	Environmental Engineer	JICA Study Team
4	Toek Visoth	Deputy Chief	EDC Banteay Meanchey
5	Mecn Somnang	Chief of Group	EDC Banteay Meanchey
6	Bin Sopheakda	Deputy of Sector	SEPRO, EDC
7	Ros Nita	Staff	SEPRO, EDC
8	Tuy Soklin	Staff	MIST, CPPD, EDC
9	Lim Chakriya	Deputy Chief	CPPD, EDC
10	Cy Sombath	Police	Ou Bei Choan Commune
11	Chrov Rom	Assistant	Koub Commune
12	Naov Sovat	Council	Ou Bei Choan Commune
13	Chun Rithy	Licensee	Ou Bei Choan Commune
14	Mean Chanthea	Chief	Banteay Thmei Village
15	Son Than	Assistant	Ou Bei Choan Commune
16	Suon Seun	Chief	Chouk Chey Village
17	Duck Kanha	Deputy Chief	Thnol Bat Village
18	Chea Vanna	Chief	Tumnob Dach Village
19	Chan Mab	Police	Ou Bei Choan Commune
20	Khoun Brayong	Deputy Chief	MME Department
21	Oun Eang	Official	MME Department
22	Chea Sarin	Deputy Chief	Seila Khmaer Village
23	Noun Choub	Chief	Ou Bei Choan Village
24	Kuy Sereymanut	Official	MME Department
25	Vek Phal	Resident	Ou Bei Choan Village
26	Choub Yorn	Resident	Ou Bei Choan Village
27	Chooun Pheary	Resident	Ou Bei Choan Village
28	Kong Prsey	Resident	Ou Bei Choan Village
29	Chea Sam Ang	Resident	Ou Bei Choan Village
30	Vek Phal	Resident	Ou Bei Choan Village
31	Seng Ratha	Resident	Snuol Tret Village
32	Hom Se	Resident	Snuol Tret Village
33	Sol Hoeimg	Resident	Snuol Tret Village
34	So Sana	Resident	Snuol Tret Village
35	Hoeung Hov	Resident	Snuol Tret Village
36	Dol Ratha	Resident	Snuol Tret Village
37	Vong Dany	Resident	Snuol Tret Village
38	Pech Vanna	Resident	Snuol Tret Village
39	Mao Nget	Resident	Snuol Tret Village
40	Sun Sokhom	Resident	Snuol Tret Village
41	Or Souan	Resident	Snuol Tret Village
42	Chea Vanny	Resident	Tumnob Dach Village
43	Mei Bunny	Resident	Tumnob Dach Village
44	Bandol Chaokorn	Resident	Tumnob Dach Village
45	Lim Kim Eng	Resident	Tumnob Dach Village

No.	Name	Position	Belongings
46	Ny Chantha	Resident	Tumnob Dach Village
47	Lim Aun	Resident	Tumnob Dach Village
48	Chum Sarath	Resident	Tumnob Dach Village
49	Leng Sarith	Resident	Tumnob Dach Village
50	Un Kreth	Resident	Tumnob Dach Village
51	Chan Vuthy	Resident	Thnol Bat Village
52	Sok Nary	Resident	Thnol Bat Village
53	Sok Ny	Resident	Thnol Bat Village
54	Buk Phut	Resident	Thnol Bat Village
55	Ung Tom	Resident	Thnol Bat Village
56	Pin Samath	Resident	Thnol Bat Village
57	Ouk Pisath	Resident	Thnol Bat Village
58	Nany Choeun	Resident	Thnol Bat Village
59	Kong Bunnarith	Resident	Chok Chey Village
60	Koy Len	Resident	Chouk Chey Village
61	Heng Pheng	Resident	Chouk Chey Village
62	So Samnang	Resident	Chouk Chey Village
63	Nhem Doen	Resident	Chouk Chey Village
64	Hout Chea	Resident	Chouk Chey Village
65	Chum Phalla	Resident	Chouk Chey Village
66	Chea Khum	Resident	Chouk Chey Village
67	Kim Rem	Resident	Chouk Chey Village
68	Long Tola	Resident	Chouk Chey Village
69	Khut Kha	Resident	Chouk Chey Village
70	Bet Lin	Resident	Chouk Chey Village
71	Chea Vanna	Resident	Chouk Chey Village
72	Kong Tol	Resident	Chouk Chey Village
73	Nhem Sim	Resident	Chouk Chey Village
74	Phy Rom	Resident	Chouk Chey Village
75	Oy Oun	Resident	Chouk Chey Village
76	Kun Sochen	Resident	Chouk Chey Village
77	Sam Houng	Resident	Chouk Chey Village
78	Khum Earb	Resident	Chouk Chey Village
79	Mao Pheng	Resident	Chouk Chey Village
80	Tang Hoeun	Resident	Chouk Chey Village
81	Lab Chab	Resident	Chouk Chey Village
82	Tim Bona	Resident	Chouk Chey Village
83	Mao Sorn	Resident	Chouk Chey Village
84	Poch Kimloeung	Resident	Chouk Chey Village
85	Poch Kimheng	Resident	Chouk Chey Village
86	Bov Kher	Resident	Chouk Chey Village
87	Sun Sokhorn	Resident	Chouk Chey Village
88	Som Lovnh	Resident	Chouk Chey Village
89	Kim Channa	Resident	Chouk Chey Village
90	Bov Vong	Resident	Chouk Chey Village
91	But Sopath	Resident	Chouk Chey Village

No.	Name	Position	Belongings
92	Ly Mony	Resident	Seila Khmaer Village
93	Dol Din	Resident	Seila Khmaer Village
94	Khin Khoem	Resident	Seila Khmaer Village
95	Sun Chhiv	Resident	Seila Khmaer Village
96	Lat Pha	Resident	Seila Khmaer Village
97	Sreang Komsot	Resident	Seila Khmaer Village
98	So Hach	Resident	Seila Khmaer Village
99	Heang Vanna	Resident	Seila Khmaer Village
100	Sek Chat	Resident	Seila Khmaer Village
101	Ath Singang	Resident	Seila Khmaer Village
102	Lor Sochea	Resident	Seila Khmaer Village
103	Tang Vath	Resident	Seila Khmaer Village
104	So soevth	Resident	Seila Khmaer Village
105	Heng King	Resident	Seila Khmaer Village
106	Thong Sokheang	Resident	Seila Khmaer Village
107	Am Khorn	Resident	Seila Khmaer Village
108	Hout Phov	Resident	Seila Khmaer Village
109	Lim Chhun Leang	Resident	Seila Khmaer Village
110	Hout Ang	Resident	Seila Khmaer Village
111	Bun Phorn	Resident	Seila Khmaer Village
112	Sreng Phan	Resident	Seila Khmaer Village
113	Chhean Mach	Resident	Seila Khmaer Village
114	Ry Pich	Resident	Seila Khmaer Village
115	Hout Seang Leng	Resident	Seila Khmaer Village
116	Sen Sophal	Resident	Seila Khmaer Village

C. Koh Kong

1. Minutes

Date:	Monday, May 30, 2016	
Time:	10:30 AM - 11:30 AM	
Venue:	Koh Kong Provincial Hall	
Purpose:	1. Conduct presentation on the results of studies for the project; 2. Collect stakeholders' opinions on the project and expected environmental impacts and mitigation.	
Attendees: (25 persons)	Local Authority	19 persons
	EDC Phnom Penh	4 persons
	JICA Study Team	2 persons
Main Opinions		
Opinion 1	Suggest JICA and EDC to be flexible for placing poles in Khmerak Phoumin City because ROW of Road No.48 in the city cannot be maintained at 25m from the center line as stated in Approval of Ministry of Transportation and Public Works.	
Opinion 2	Request for more line extension if possible because some villages are lack of power supply.	
- Positive conclusion with local authorities' and residents' support of the project		

2. Attendance List

No.	Name	Position	Belongings
1	Sao Sintheon	Deputy Director	Administrative Office of Koh Kong Province
2	Pho Vibol	Chief	Khemara Phoumin District
3	On Davuth	Deputy Chief	MOPW Department
4	Aum Vuthy	Office Chief	MME Department
5	Yem Yan	Chief	Peam Krosob Commune
6	Yim Sanet	Chief	Toul Ko Ky Commune
7	Nhem Yi	Chief	Smach Mean Chey Commune
8	Khong Vichhean	Chief	Stueng Veang Commune
9	Heng Soly	Office Chief	Koh Kong Province
10	Mao Sam Ath	Office Chief	Koh Kong Province
11	Sang Vanny	Office Deputy Chief	Koh Kong Province
12	Saing Navy	Office Deputy Chief	Koh Kong Province
13	Lim Dy	Chief	Dong Tong Commune
14	Sun Sopheak	Office Deputy Chief	Koh Kong Province
15	Eav Kasal	Chief	Pak Khlang Commune
16	Mon Phalla	Chief	MOE Department
17	Hak Leng	Chief	Mondul Seima District
18	Oung Sam Oeun	Representative Inter-Sectoral	Koh Kong Province
19	Heang Sroevn	Office Deputy Chief	Koh Kong Province
20	Kenichiro Yagi	Chief Consultant	JICA Study Team
21	Yoshiko Oishi	Environmental Engineer	JICA Study Team
22	Bin Sopheakda	Deputy of Sector	SEPRO, EDC
23	Ros Nita	Staff	SEPRO, EDC
24	Tuy Soklin	Staff	MIST, CPPD, EDC
25	Lim Chakriya	Deputy Chief	CPPD, EDC