Environmental Monitoring Report

Project Number: 49216-002
Loan Number: 3409
Semi Annual Report
July 2019

SRI: Supporting Electricity Supply Reliability Improvement Project

Prepared by Ceylon Electricity Board for the Asian Development Bank.

Environmental Safeguard Monitoring Report

Period : January 2019 to June 2019

Date : 30th July 2019

ADB Loan No. 3409 - SRI
Supporting Electricity Supply Reliability Improvement Project
Packages 4 and 6

Prepared by Project Management Unit of Supporting Electricity Supply Reliability Improvement Project for Packages 4 and 6, in Ceylon Electricity Board for the Asian Development Bank on 30th July 2019

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Executive Summary

Introduction

The Supporting Electricity Supply Reliability Improvement Project is financed under ADB Loan No: 3409-SRI and two financial grants provided by CEFPF and JFPR. The loan of US$ 115 million has been provided directly to CEB. The relevant loan and grant agreements were signed on 19th December 2016 and loan became effective on 29th June 2017. The project will be completed by 30th September 2021. The loan closing date will be 31st March 2022. CEB is the executing and implementing agency for loan component.

This report is to present the progress of environmental safeguard monitoring activities of the packages 4 and 6 of Supporting Electricity Supply Reliability Improvement project from 01st of January 2019 to 1st of July 2019.

Environmental Safeguard Activities

Since the project does not involve activities that have significant adverse impacts, an initial environmental examination (IEE) been done in March 2016 and presented in ADB website www.adb.org to determine the extent of impact as per the ADB's new Safeguard Policy Statement (SPS) 2009. The environmental classification for the project is "Category B".

Environmental impacts are likely to result from the proposed project development are manageable and can be managed cost effectively. In order to ensure the minimal environmental impacts it has been introduced monitoring and mitigation systems, specific selection criteria, reviewing and impact assessment procedures for individual subprojects. The detailed design would address any such environmental impacts that could not be specified or identified at this stage and includes mitigation measures, where necessary. Foreseen environmental impacts were minimized by applying mitigation measures such as careful selection of sites, identifying additional measures to be taken at the implementation. The Line Routes are carefully selected with the participation of all concerned parties including Divisional Secretaries, Government Officials & other relevant State Organizations. Factors such as Forest & other Reservations, clearance to be maintained from existing Power & Telecommunication Lines, Highways & Public Access Routes etc. will be addressed during the Design Stage.

The proposed project will have number of positive impacts and negative impacts on the existing environment as follows:

(i) Significant improvement of the quality and reliability of the electricity supply to the project affected area is the main positive impact.

(ii) Removal of trees on distribution line routes is the main negative impact to the proposed project area.

(iii) Environment pollution due to cut and fill operations, transportation of construction materials, disposal of debris, disturbance to the farming activities, nuisance from dust, noise, vehicle fumes, black smoke, vibration etc. due to construction activities are the short term negative impacts of the proposed project.

(iv) There will be loss of agricultural productivity due to obstruction and reduction of the land of paddy fields as well as cutting of home gardens, coconut and rubber plantations; which will be compensated based on the valuation of the significance of the loss.

Benefits far outweigh negative impacts: the proposed project will improve operational efficiency and quality of power, voltages, reliability of the system and at the same time will reduce system losses. Supply of power to both the local areas and regions will boost economic development of the area by strengthening the power

distribution infrastructure. Overall, the major social and environmental impacts associated with the distribution subprojects are limited to the construction period and can be mitigated to an acceptable level by implementation of recommended measures and by best engineering and environmental practices.

Potential adverse environment impacts associated with distribution lines have been avoided or minimized through careful route selection.
The alignment is sited away from major settlements, whenever possible, to account for future urban expansion. Forests areas and thick vegetation areas are avoided wherever possible; however, route alignment passes through scrublands, cultivated paddy fields, rubber cultivations, rubber plantations, tea cultivations, etc. The lines will also pass through degraded forest areas but very limited access to national park or sanctuary at few occasions. The alignments in this project have also avoided wetlands and geologically unstable areas, which can also pose foundation related problems. The assistance of national Building research Institute is being obtained to identify possible land sliding positions within the route. Land will be purchased or acquired for gantries and hybrid power plants. Physical damage to the crops during the construction phase of the project will be compensated at the time of damage as per Government of Sri Lanka (GoSL) norms. Associated impacts on agricultural land will be restricted to the construction phase and will be temporary in nature. Agricultural land will not be lost permanently at the base of the distribution tower. After construction, agricultural land within the distribution corridors can be used again for farming purpose.

The Divisional Secretaries & all the relevant government bodies will grant their approval for the project with the consultation of all the Departments concerned. All Divisional Secretaries will be informed about the environmental and social issues and mitigation measures to be adopted and various complaints and issues raised by the public are inquired to address them and find solutions for the satisfaction of every stake holder.

Once the line route approval process is over, the Initial Environmental Examination report published in March 2016 will be updated for each subproject.

- **Package 4 : Construction of 270 km long 33kV tower lines and 13 no. of 33kV 2SSBB gantries**

This contract was awarded on 30/05/2019. The contractor is Quindao Hujintong Power Equipment Co. Ltd. China. By now, the contractor is making arrangements for design activities and line route surveying work,

The following new 33kV double circuit tower lines are to be constructed under this project.

No	Proposal	Length (km)	Line route through
1	Puttalam GSS to Keeriyankalliya	28.2	Paddy fields, residential areas, cultivated lands
2	Mallawapitiya GSS to Rathmalgoda	16.5	Paddy fields, residential areas, cultivated lands, expressway route crossing
3	Maho grid to Ma-Eliya gantry	26	Paddy fields, residential areas, cultivated lands, lakes, railway crossing
4	Wimalasurendra GSS to Maskeliya gantry	9.97	Tea plantation, reservoir area, airport area, hilly area
5	Ampara GSS to Uhana gantry	12.56	Paddy fields, residential areas, cultivated lands, forests
6	Kappalthurai gantry to 6th Mile Post gantry	13.92	residential areas, forests
7	Irankandy gantry to Kumburupitiya gantry	7.56	residential areas, saltern, lagoon area, shrubs
8	Choisy gantry to Thawalantenna	5.82	residential areas, cultivated lands, forests, reservoir area, hilly area

9	Kegalle Grid to Givilipittiya gantry	11.5	residential areas, cultivated lands, hilly areas
10	Badulla GSS to Ella	15.16	residential areas, cultivated lands, hilly areas
11	Mahiyanganaya GSS to Bibile	35.7	Paddy fields, residential areas, cultivated lands
12	Ranthnapura GSS to Idangoda	15.98	residential areas, cultivated lands, hilly areas, Paddy fields
13	Monaragala GSS to Wellawaya	37.8	residential areas, cultivated lands, hilly areas
14	Warukandeniya to Morawaka	17.52	Paddy fields, residential areas, cultivated lands, shurbs, irrigation facilities
15	Elpitiya 11th Mile Post to Mattaka	10.7	Paddy fields, residential areas, cultivated lands, shurbs, irrigation facilities
16	Matara GSS to Yakabedda GT	22	Paddy fields, marshy land, shurbs, hilly areas
	Total	285.59	

Tower line route identification and route clearance are now in the final phase. All routes have been surveyed. However, minor adjustments have to done due to the decisions made at the inquiries held by Divisional Secretariats (DS) to summon public objections. The land owners and affected people living under line route length of 100% have been acknowledged and the objections raised by them are being inquired with DSs to come to the settlement. For 90% of the line route length, compensations to be paid to land owners for trees to be cut down have been listed out.

The following line routes are in land sliding areas and therefore the selected line routes have been investigated with National Building Research Organization (NBRO) to identify possible measures to avoid soil erosion and possible land sliding.

(i) Kegalle Grid to Givilipittiya gantry
(ii) Badulla GSS to Ella
(iii) Warukandeniya to Morawaka
(iv) Elpitiya 11th Mile Post to Mattaka
(v) Wimalasurendra GSS to Maskeliya gantry
(vi) Ranthnapura GSS to Idangoda
(vii) Choisy to Thawalanthenna

After visiting the sites, NBRO provided recommendations for above given (i), (ii), (iii) and (iv) line routes. Line route have been adjusted at few locations based on the instructions given by NBRO. NBRO has to visit the routes of lines (v),(vi) and (vii).

The following two line routes are passing closer to the local airports. After the consultation of the Airport & Aviation Authority, line routes have been slightly modified and additional measures to be taken during the line construction stage have been identified.

(i) Wimalasurendra GSS to Maskeliya gantry
(ii) Ampara GSS to Uhana gantry

Some sections of the following lines are passing through reserved forest areas. With the official assistance of Department of Forest and Wild life, the original line routes were adjusted to minimize the damage.

(i) Kappalthurai gantry to 6th Mile Post gantry
(ii) Irankandy gantry to Kumburupitiya gantry
(iii) Ampara GSS to Uhana gantry

(iv) Monaragala to Wellawaya
(v) Matara-Yakabedda
(vi) Mahiyangane to Bibile

Approval of Department of Forest has been received for the routes of Kappalthurai gantry to 6th mile post gantry and Irankandy gantry to Kumburupitiya gantry. The Department of Forest is evaluating the other routes by now.

Final route approval has been received by DS for the following lines after solving all public objections.

1. Puttalam GSS to Keeriyankalliya
2. Maho GSS to Ma-Eliya gantry
3. Wimalasurendra GSS to Maskeliya gantry
4. Kappalthurai gantry to 6th Mile Post gantry
5. Irankandy gantry to Kumburupitiya gantry
6. Warukandeniya to Morawaka

The following 33kV Two Section Single Busbar gantries have to be constructed under this project.

No	Gantry Location
1	Keeriyankalliya
2	Ratmalgoda
3	Ma-Eliya
4	Maskeliya
5	Erankandy
6	Kumburupitiya
7	Wellawaya
8	Ella
9	Warukandeniya
10	Mattaka
11	Morawaka
12	Uhana
13	Bibile

The Board of CEB has granted the principle approval for purchasing or acquiring of land owned by private parties and allocating selected government lands for gantry construction.

The Board of CEB has granted the principle approval for purchasing or acquiring of the lands owned by private parties and allocating government owned lands selected for gantry construction. Land valuation reports have been obtained from the Department of Valuation for 8 lands having private ownership. For 8 lands, the legal clearances have been investigated by the Legal Branch of CEB in order to purchase them. By considering the inadequacy of documents available with the land owner's to prove the ownership of the land, it has been decided to acquire lands at Maelliya, Rathmalgoda, Irrankandy, Maskeliya, Ella, Wellawaya, Warukandeniya and Mattaka.
The owners of the Kerriyankalliya and Morawaka lands expressed their dissatisfaction to sell their lands at government valuation and demanded unreasonably higher prices. Therefore it has been decided to acquire both lands.

The first gazette notice has been published by the Ministry of Power, Energy and Business Development for the acquisition of the following lands.

1. Maelleiya
2. Keeriyankalliya

3. Rathmalgoda
4. Irrankandy
5. Maskeliya
6. Ella
7. Wellawaya
8. Warukandeniya
9. Mattaka
10. Morawaka

The gantry land in Kuburupitti is a state owned one. DS has requested approval from five government institutions prior to the allocation of the land. Four institutions have given their consent. Only the consent of the Coastal Conservation Department is pending.

- **Package 6 (Construction of Hybrid renewable energy systems in 03 small islands-Analathivu, Delfts, Nainathivu)**

Tendering procedure is being executed for selecting a contractor to do construction activities. Tender was advertised on 27/06/2019 and it will be closed on 21/08/2019.

The lands selected for hybrid power plant construction in Delft and Analativu are state owned lands but the land identified in Nagadeepa is a private land. All lands those have been selected for construction of hybrid power systems have been surveyed.

(i) Allocation of the land in Nagadeepa Island

Selected land in Nagadeepa is a private land. Necessary document to check legal clearance of the land has been submitted to the Legal branch of CEB. Legal branch has given convent for purchasing the land. The valuation report of the land was obtained from the government Valuation Department. All land owners agreed to sell their lands to CEB at the government valuation. However, CEB management has instructed to acquire the land. Therefore documents have been forwarded to the Ministry of Power and Renewable Energy for land acquisition process. The ministry has instructed CEB to purchase the land. Purchasing procedure is in progress.

Construction approval has already been requested from several government institutions and the progress is as following.

- Approval cannot be requested from Urban Development Authority (UDA) until the land is purchased by CEB.
- Coastal Conservation and Coastal Resource Management Department (CCCRMD) approval was obtained for construction of the Plant

(ii) Allocation of the land in Analativu Island

This is a government owned land and the DS (Kytes) has granted approval by a letter and the land plot is allocated for the Hybrid Energy Project. Further, following approvals and clearances were obtained by PMU.

- The Letter of DS-Kytes on consent of allocation of the land
- Preliminary planning clearance obtained from UDA.
- Clearance from Central Environmental Authority (CEA).
- Coastal Conservation and Coastal Resource Management Department has granted their approval for the construction of the Plant.

(iii) Allocation of the land in Delft Island

This is a government owned land and the Divisional Secretory (Delft) has granted approval by a letter and the land plot is allocated for the Hybrid Energy Project. Further, following approvals and clearances were obtained by PMU.

- The Letter of DS-Delft on consent of allocation the land
- Preliminary planning clearance from UDA
- Clearance from Central Environmental Authority (CEA)
- Coastal Conservation and Coastal Resource Management Department has informed that they have no objection for construction of the plant

1.0 Introduction

The power sector has undergone significant policy level and structural changes in the recent past:

- Sri Lanka Electricity Act passed in Parliament in 2009;
- Assumption of the role of electricity regulator in April, 2009 by the Public Utilities Commission of Sri Lanka (PUCSL);
- Creation of Functional Business Units (FBUs) within Ceylon Electricity Board (CEB) with one unit each for generation and transmission and four geographical units for distribution function; and
- PUCSL issued licenses to all FBUs. FBUs have been filing tariff petitions since 2010.

The Supporting Electricity Supply Reliability Improvement Project was approved by ADB's Board of Directors on 26th July 2016. This project is financed by (i) Loan 3409-SRI for US$ 115 million from ADB ordinary capital resources and (ii) an investment Grant 0486 of US$ 1.8 million is provided by the Clean Energy Fund (CEF) under the Clean Energy Financing Partnership Facility and administered by ADB, and (iii) an investment grant of US$ 2 million is provided by the Japan fund for Poverty Reduction and administered by ADB. The loan has been provided directly to CEB while with a sovereign guarantee while the investment grant is provided to the Democratic Socialist Republic of Sri Lanka. The local financing component by CEB and government of Sri Lanka is US$ 45.2 million. The relevant loan and grant agreements were signed on 19th December and loan became effective on 29th June 2017. The project will be completed by 30th September 2021. The loan closing date will be 31st March 2022. CEB is the executing and implementing agency for loan component.

1.1 Brief Project Description

The outputs of the Supporting Electricity Supply Reliability Improvement Project are as following.

(i) Renewable energy systems established. This involves (a) establishing hybrid renewable energy systems, consisting of wind, solar, efficient diesel generators, and battery storage; (b) support for productive energy use for small isolated island and rural communities on three islands in the Jaffna area of the Northern Province (Analativu, Delft, and Nainativu); and (c) a renewable energy micro-grid system in the Western Province.

(ii) Reliability of the medium voltage network improved. This involves (a) construction of 270.5 km of 33 kV tower lines, 80.0 km of 33 kV aerial bundled conductor lines, and 13 of 33 kV gantries; and (b) installation of 175 of 33 kV load-break switches and 25 of 33 kV auto reclosers.

(iii) Rural electrification network extended and distribution performance monitoring improved. This involves (a) construction of 1,979 km of low voltage line extensions; (b) 106 rural electrification schemes, comprising 106 of 100 kilovolt-ampere distribution substations, 198 km of dedicated 33 kV lines, and 393 km of low voltage lines to connect rural households to the grid; and (c) installation of 25,000 programmable distribution substation meters with a remote meter-reading facility.

(iv) Reactive power management in the transmission system improved. This includes installation of (a) 100 megavolt-ampere reactive breaker-switched capacitors at the 132 kV bus bar of the existing Pannipitiya grid substation; and (b) a +100/–50 megavolt-ampere reactive static var compensator at the 220 kV bus bar of the existing Biyagama grid substation for voltage control during dynamic conditions.

1.2 Project Progress Status and Implementation Schedule

A. Progress Status

The updated status of environment activities for the two sub projects, package 4 and package 6 up to June 2019 is given below.

Sub Project	Description	Status
Package 4	**Construction of 270 km long 33kV tower lines and 13 no. of 33kV 2SSBB gantries**	(i)Line route surveying 100% completed.
		(ii) W notice issuing 100% completed.
		(iii) public objections are being cleared and informed District Secretariat for conducting inquiries
		(v) Line route adjustments as instructed by DSs at public inquiries are done and resurveying of the adjusted sections is being conducted.
		(vi) Trees on 90.1% of the total route which are to be removed have been identified and listed out for payment of compensations
		(vii) Valuation of identified trees is being obtained from DSs for 62% of route length.
		(viii) All gantry lands have been surveyed
		(iv) The first gazette notice for acquisition has been published for the following lands. 1. Maelleiya 2. Keeriyankalliya 3. Rathmalgoda 4. Irrankandy 5. Maskeliya 6. Ella 7. Wellawaya 8. Warukandeniya 9. Mattaka 10. Morawaka
		(v) The land allocation procedure is being implemented for the government owned gantry land in Kumburupitti,
Package 6	**(Construction of Hybrid renewable energy systems in 03 small islands- Analathivu, Delfts, Nagadepa)**.	(i) All lands have been surveyed.
		(ii) Value of the private owned land in Nagadeepa has been evaluated from the Department of Valuation. All land owners agreed to sell the land at the government valuation. CEB Legal Department confirmed the legal clearance. But the Board of CEB instructed not to purchase but to acquire. Therefore documents have been forwarded to the Ministry of Power and Renewable Energy for land acquisition process. The ministry has instructed CEB to purchase the land. The approval of the Board of CEB has been sought for purchasing the land.
		(iii) Land allocation procedure is being implemented for government owned land in Analitivu. Land acquisition forms have been submitted to DS-Kytes for land allocation in Analativu. The decision is pending but work approval has been granted. Construction approval has been granted by the Coastal Conservation and Coastal Resource Management Department, UDA and the Central Environmental Authority,

		Necessary documents have been submitted to the DS (Delfts) for allocating government owned land in Delft. DS (Delfts) has given work approval for the land selected in Delft. The construction approvals have been obtained from the Coastal Conservation and Coastal Resource Management Department, Department of Wild Life and UDA and the Central Environmental Authority.

B. Implementation Schedule

B.1: for Package 4

Sub Project Activities	2019				2020				2021		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Selection of line corridor	√	√	P	P							
Clearance of line corridor	√	√	P	P							
Preliminary Survey	√	√	P	P							
Profile Survey	—	—	—	P	P	P					
Tower Spotting	—	—	—	—	P	P	P	P	P		
Soil Investigation	—	—	—	P	P	P					
Excavation for construction of tower foundations	—	—	—	P	P	P	P	P	P		
Construction of tower foundations	—	—	—	P	P	P	P	P	P		
Tower erection	—	—	—	—	P	P	P	P	P		
Conductor Stringing	—	—	—	—	—	P	P	P	P	P	
Preliminary civil works of gantry	—	—	—	—	P	P	P				
Foundation works of gantry	—	—	—	—	P	P	P	P	P		
Earthing of gantry	—	—	—	—	—	P	P	P	P		
Erection of structures	—	—	—	—	—	P	P	P	P		
Installation of equipment in gantry	—	—	—	—	—	—	P	P	P	P	
Testing & Commissioning	—	—	—	—	—	—	—	P	P	P	

Q: Quarters √: Activity Done P: Activity Planned —: No Activity

(B.2) For package 6

Sub Project Activities	2018				2019				2020		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Land survey	√	√									
Land clearance	—	—	√	√	√	√					
Soil testing	—	—	—	—	—	—	—	—	P	P	
Design	—	—	—	—	—	—	—	—	P	P	
Civil construction	—	—	—	—	—	—	—	—	—	**P**	**P**

Q: Quarters √: Activity Done P: Activity Planned —: No Activity

2.0 Compliance to National Regulations

The relevant applicable Acts and Legislations to the project are given below and until now all the applicable Acts and Legislations are being complied.

01. Agrarian Services Act (No. 58 of 1979)
02. Agrarian Development Act No. 46 of 2000
03. Ceylon Electricity Board Act, 1969
04. Electricity Act 2009
05. Fauna and Flora Protection (Amendment) Act 1993 (Nº 49 of 1993)
06. Felling of Trees (Amendment Act No. 01 of 2000 and Act to amend felling of trees control)
07. Fisheries and Aquatic Resources Act 1996
08. Flood Act No. 22 of 1955
09. Forest Ordinance Act No. 13 of 1966
10. Forest (Amendment) Act No. 65 of 2009
11. Irrigation Clauses Act 1973
12. Land Acquisition (Amendment) Act, No. 13 of 1986
13. Monuments and Archaeological Sites and remains Act, 1958. Act No. 24 of 1958
14. Antiques Ordinance, 1960
15. Motor Traffic Act No. 60 of1979
16. National Environmental Act No. 47 of 1980, amendment No. 56 of 1988, and other amendments
17. National Environmental (Protection & Quality) Regulations, No 01 1990.
18. National Environmental (Ambient Air Quality) Regulations, 1994.

19. National Environmental (Noise Control) Regulations No. 1 1996
20. National Involuntary Resettlement Policy
21. Public Utilities Commission of Sri Lanka Act, No. 35 of 2002
22. Soil Conservation (Amendment) Act No. 24 of 1996
23. Sri Lanka sustainable energy Authority Act, No. 35 of 2007

3.0 Compliance to Environmental Covenants from the ADB Loan Agreement

Product	Schedule	Para No.	Description	Compliance
Loan 3409 - SRI	5	2	The Borrower shall ensure that the preparation, design, construction, implementation, operation and decommissioning of the Project comply with (a) all applicable laws and regulations of the Guarantor relating to environment, health and safety; (b) the Environmental Safeguards; and (c) all measures and requirements set forth in the IEE, the EMP and any corrective or preventive actions set forth in a Safeguards Monitoring Report.	Being Complied
		3	The Borrower shall ensure that all land and all rights-of-way required for the Project are made available to the Works contractor in accordance with the schedule agreed under the related Works contract and all land acquisition and resettlement activities are implemented in compliance with (a) all applicable laws and regulations of the Guarantor relating to land acquisition and involuntary resettlement; (b) the Involuntary Resettlement Safeguards; and (c) all measures and requirements set forth in the RP, and any corrective or preventative actions set forth in the Safeguards Monitoring Report.	Being Complied
		4	Without limiting the application of the Involuntary Resettlement Safeguards or the RP, The Borrower shall ensure that no physical or economic displacement takes place in connection with the Project until: (a) compensation and other entitlements have been provided to affected people in accordance with the RP;	Being Complied
		5	The Borrower shall ensure that the Project does not impact indigenous peoples within the meaning of the SPS. If due to unforeseen circumstances, the Project impacts indigenous peoples, the Borrower shall take all steps necessary or desirable to ensure that the Project complies with all applicable laws and regulations of the Guarantor relating to indigenous peoples and with the SPS.	Being Complied
		6	The Borrower shall make available necessary budgetary and human resources to fully implement the EMP and the RP.	Being Complied

		7	The Borrower shall ensure that all bidding documents and contracts for Works contain provisions that require contractors to: (a) comply with the measures relevant to the contractor set forth in the IEE, the EMP and the RP (to the extent they concern impacts on affected people during construction), and any corrective or preventative actions set forth in a Safeguards Monitoring Report; (b) make available a budget for all such environmental and social measures; (c) provide the Borrower with a written notice of any unanticipated environmental, resettlement or indigenous peoples risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP and the RP; (d) adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction; and (e) Reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition upon the completion of construction.	Being Complied

4.0 Compliance to Environmental Monitoring Plan

Project Activity	Potential impact	Mitigation measure	Parameter to be monitored	Method and Frequency	Institutional responsibility	Compliance
Pre-construction						
Selection of line corridor of 33kV tower line from Maho-Maelliya	Public Objections	Avoid/minimize public objections	Number of objections along the line route	further reviewed after the notices are issued and DS's rulings	CEB/ Divisional Secretariat	By changing route between TT and AP3, AP7 and AP11, AP18 and AP20.
	Traversing above houses/buildings.	Avoid/minimize traversing above houses/buildings wherever practicable	Number of buildings along the line route,	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey, further reviewed after the notices are issued and DS's rulings	CEB	Houses are avoided by changing route between angle points AP3 and AP7, AP11 and AP14, AP20 and AP24 , AP27 and AP38
	Excessive requirements for clearance of way-leaves.	Examine alternative routes, and select the route causing the minimum possible removal of trees	proportion of line route through such areas	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey,	CEB	Some trees are avoided by changing route between angle points AP20 and AP24 , AP24 and AP27, AP42.
	Reducing Construction Cost	Examine alternative routes, and select the route to minimum construction cost	Soil Type	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey,	CEB	Avoid unfavourable soil conditions by changing route between angle points AP27 and AP38, AP39 and AP41.

Project Activity	Potential impact	Mitigation measure	Parameter to be monitored	Method and Frequency	Institutional responsibility	Compliance
Pre-construction						
Selection of line corridor of 33kV tower line from Puttalum-Keeriyankalliya	Public Objections	Avoid/minimize public objections	Number of objections along the line route	further reviewed after the notices are issued and DS's rulings	CEB/ Divisional Secretariat	By changing route between angle points AP4 and AP5, AP10 and AP14, AP23 and AP24, AP26 and AP27,AP28 and AP29.
	Agrarian Department Objection	Avoid/minimize Agrarian Department Objection	Distance between part of the canal of the Tank and angle tower location	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey,	CEB/ Agrarian Department	Relocated AP3 location
	Traversing close to houses/buildings.	Avoid/minimize traversing close to houses/buildings wherever practicable	Number of buildings along the line route,	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey, further reviewed after the notices are issued and DS's rulings	CEB	By changing route between angle points AP32 and AP34.
	Excessive requirements for clearance of way-leaves.	Examine alternative routes, and select the route causing the minimum possible removal of trees	proportion of line route through such areas	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey,	CEB	By changing route between angle points AP18 and AP20 , , AP28 and AP30.

Project Activity	Potential impact	Mitigation measure	Parameter to be monitored	Method and Frequency	Institutional responsibility	Compliance
Pre-construction						
	Excessive requirements for clearance of existing 220kV line.	Examine alternative routes, and select the route to keep safe clearance for 220kV line.	clearance for 220kV line	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey.	CEB	By changing route between angle points AP27 and AP28, AP29 and AP30 .
Selection of line corridor of 33kV tower line from Mallawapitiya-Rathmalgoda	Public Objections	Avoid/minimize public objections	Number of objections along the line route	further reviewed after the notices are issued and DS's rulings	CEB/ Divisional Secretariat	By changing route between angle points TT1 and AP3, AP3 and AP4, AP7 and AP12, AP13 and AP14, AP22 and AP24, AP32 and TT2.
	Excessive requirements for clearance of way-leaves.	Examine alternative routes, and select the route causing the minimum possible removal of trees	proportion of line route through such areas	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey,	CEB	By changing route between angle points AP7 and AP12 .
	Excessive requirements for clearance of Highway crossing	Examine alternative routes, and select the route to keep safe clearance for Highway crossing.	clearance for Highway crossing	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey,	CEB	By changing route between angle points AP24 and AP25.

Project Activity	Potential impact	Mitigation measure	Parameter to be monitored	Method and Frequency	Institutional responsibility	Compliance
Pre-construction						
	Reducing Construction Cost	Examine alternative routes, and select the route to minimum construction cost	Reducing Line length	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey,	CEB	By changing route between angle points AP7 and AP12.
Selection of line corridor of 33kV tower line from Kappalthurai - 6MP	Traversing through thick jungle where elephants' habitats exits.	Line route was taken closer to road	No. of trees to be cleared.	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey, further reviewed on the advice of Forest Dept.	CEB	Line route was selected in parallel with road near the boundary fence. (AP01 – AP04, AP07 – AP09,).
	Traversing above houses/buildings.	Line route was deviated.	Number of buildings under the line route,	During preliminary route selection, reviewed during field visits and in final line design survey, further reviewed after the DS's rulings	CEB	Route was changed to avoid line going over Pentecostal Church building (AP14 – AP15).
	Land use restrictions	Examine alternative routes, and select the route causing the minimum impacts on long-term land-use	How line passes through private lands and area to be cleared within the land.	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey, further reviewed after the notices are issued and Objections received.	CEB	Route was changed to avoid traversing above private land which had been diagonally crossed (AP09 – AP10).

Project Activity	Potential impact	Mitigation measure	Parameter to be monitored	Method and Frequency	Institutional responsibility	Compliance
Pre-construction						
	Difficulties for maintaining Tank bund.	Examine alternative routes and avoid protected area of the Tank bund.	High to conductor from on the top of the Tank bund.	On the advice of Irrigation Dept.	CEB	Conductor height should be increased over the dam to have adequate clearance (AP11 – AP12).
Selection of line corridor of 33kV tower line from WPS - Maskeliya	Traversing above houses/buildings.	Line route was changed to avoid going above houses.	Number of buildings along the line route.	Reviewed during field visits and in final line route survey.	CEB	Line route was changed to avoid going above houses in between (AP23 – AP25, AP17 – AP18).
	Construction difficulties to cross existing lines.	Examine alternative routes to avoid those difficulties.	Clearance to existing lines and existing tower positions.	Reviewed during field visits and in final line route survey.	CEB	Conductor height should be increased to have adequate clearance with existing lines and existing tower positions (AP22 – AP26)
	Difficulties to erect towers at selected positions.	Selection of suitable alternative tower locations.	Examine ground slopes, water streams and existing rocks and boulders.	Visual inspection and reviewed during field visits. And reviewed after final survey.	CEB	Relocate tower locations (AP14 – AP25)
Selection of line corridor of 33kV tower line from Ampara - Uhana	Traversing through protected areas.	To avoid line goes through Buddangala Sanctuary.	Protected areas in the vicinity	Visual inspection, reviewed during field visits and in final line route survey, further reviewed after	CEB	Rerouted to avoid line goes through Buddangala Sanctuary (AP22 – AP24).

Project Activity	Potential impact	Mitigation measure	Parameter to be monitored	Method and Frequency	Institutional responsibility	Compliance
Pre-construction						
				information sharing with Wild Life Dept.		
	Traversing above houses/buildings.	Avoid/minimize traversing above houses/buildings wherever practicable	Number of buildings along the line route.	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey, further reviewed after the notices were issued and DS's rulings	CEB	Line was shifted to avoid traversing above Houses and Home Gardens (AP24 – AP25, AP09 – AP11).
	Traversing across flight route to Ampara airport	Avoid/minimize traversing across air traffic path	Height of the tower line near the airport	Reviewing the route with Airport Aviation after route survey	CEB/Airport Aviation	The height of towers are limited to 20m and install warning spheres on the highest conductor
	Construction difficulties to go along with an existing lines.	Examine alternative routes to avoid those difficulties.	Clearance to existing lines and existing pole positions.	Reviewed during field visits and in final line route survey.	CEB	Line was shifted to have adequate clearance with existing lines and existing tower positions (AP25 – AP26)

Project Activity	Potential impact	Mitigation measure	Parameter to be monitored	Method and Frequency	Institutional responsibility	Compliance
Pre-construction						
Selection of line corridor of 33kV tower line from Irakkandy - Kumburupitiya	Going through limited land available for Raigam Salt Factory construction.	Line was shifted to saltern.	Land area available for factory construction.	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey, further reviewed after the notices are issued.	CEB	Line was shifted over saltern (AP10-AP13).
	Land use restrictions	Line was shifted to coastal belt of Irakkandi lagoon.	How many private lands are affected.	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey, further reviewed after the notices are issued and DS's rulings	CEB	Line was shifted towards Irakkandi lagoon (AP01-AP08).
Selection of line corridor of 33kV tower line from Molagoda-Gavilipitiya	Traversing through densely populated areas.	Avoid traversing above densely populated areas as much as possible and to reduce line length for cost minimize.	Populated areas in the vicinity	Visual inspection, During preliminary route selection and in preliminary surveying stage, reviewed during field visits	CEB	By changing route between TT and AP 11 point
	Traversing above houses/school Premises.	Avoid/minimize traversing above houses/school premises wherever practicable	Number of houses along the line route	Visual inspection, During preliminary route selection, reviewed during field visits, further reviewed after the notices are issued and DS's	CEB	02 number of houses were fully avoided by changing route between Angle points AP22 and AP24.

Project Activity	Potential impact	Mitigation measure	Parameter to be monitored	Method and Frequency	Institutional responsibility	Compliance
Pre-construction						
				rulings		
	Excessive requirements for clearance of way-leaves.	Examine alternative routes, and select the route causing the minimum possible removal of trees	proportion of line route through such areas	Visual inspection, During preliminary route selection, reviewed during field visits	CEB	51 numbers of trees were fully avoided; by changing the line route between angle points AP12 – AP18
	Public Objections	Avoid/minimize public objections	Number of objections along the line route	further reviewed after the notices are issued and DS's rulings	CEB/ Divisional Secretariat	By changing route between angle points AP20 and AP21, at AP-47, AP-11.
	Located in Earth slip proven Areas	Shifted to a safer location with the recommendations of National Building research Organization (NBRO).	Condition of soil	Visual inspection, reviewed after join field visit with NBRO officials.	CEB/NBRO	Avoided possible earth slip areas and relocate Angle points AP5, AP44, AP 45,
Selection of line corridor of 33kV tower line from Badulla - Ella	Traversing through Residential Area.	Avoid travelling middle of the land plots	Number of buildings along the line route,	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey,	CEB	A house was fully avoided by changing the route between angle points.AP04 and AP05.

Project Activity	Potential impact	Mitigation measure	Parameter to be monitored	Method and Frequency	Institutional responsibility	Compliance
Pre-construction						
	Located in Earth slip proven Areas	Shifted to a safer location with the recommendations of National Building research Organization (NBRO).	Condition of soil	Visual inspection, reviewed after join field visit with NBRO officials.	CEB/NBRO	Avoided possible earth slip areas and relocate Angle points AP10, AP34, AP 36, AP37 and AP38,AP43,AP50.
	Traversing close to house.	Avoid traversing above house and shifted to the edge of the property.	Number of buildings along the line route,	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey, further reviewed after the notices are issued and DS's rulings	CEB	A house located between the angle points AP13 and AP47 was fully avoided by changing the route.
	Land use restrictions in areas of high population density	Examine alternative routes, and select the route causing the minimum impacts on long-term land-use	urban and suburban centers of population crossed by the line, proportion of line route through such areas	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey.	CEB	Line route passing over a highly populated area was avoided near Badulla town by changing the route between Angle points AP45 and AP52.
Selection of line corridor of 33kV tower line from Rathnapura – Idangoda.	Traversing near houses.	Avoid traversing above houses and located wherever practicable	Number of buildings along the line route,	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey.	CEB	Houses were fully avoided between angle points AP01 and AP03., between angle points AP04 and AP05. between angle points AP20 and

Project Activity	Potential impact	Mitigation measure	Parameter to be monitored	Method and Frequency	Institutional responsibility	Compliance
Pre-construction						
						AP21,; between angle points AP32 and AP33, between angle points AP38 and AP39, between angle points AP42 and AP43 by changing the route .
	Traversing through Rubber Cultivated Area	Minimized the length going through Rubber cultivated Area and located wherever practicable	Number of Rubber trees along the line route,	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey.	CEB	Minimize the damage caused to Rubber cultivation by changing the route between angle points AP15 and AP16.
	Traversing near Earth Mining area	Avoid locating Angle points close to the earth mined area and located wherever practicable	Area allocated for mining	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey.	CEB	AP27 was shifted to a better location away from the earth mining area.
	Located in a rocky area	Avoid traversing above rocky area to avoid high construction cost and to mitigate the environmental impact and located wherever practicable	extent of the rock	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey.	CEB	Angle point AP 54 was shifted to a better location to avoid rocky area.

Project Activity	Potential impact	Mitigation measure	Parameter to be monitored	Method and Frequency	Institutional responsibility	Compliance
Pre-construction						
	Located in Earth slip proven Areas	Shifted to a safer location with the recommendations of National Building research Organization (NBRO).	Condition of soil	Visual inspection, reviewed after join field visit with NBRO officials.	CEB/NBRO	Avoided possible earth slip areas and relocate Angle points AP10, AP23.
Selection of line corridor of 33kV tower line from Monaragala to Wellawaya.	Traversing above house and plantation	Avoid traversing above houses wherever practicable	Number of buildings and trees along the line route,	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey.	CEB	A house and few trees were fully avoided between angle points AP05 and AP08 by changing the route .
	Traversing close to a house.	Distance to the house has increased and placed the new angle point wherever practicable	Number of buildings along the line route,	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey.	CEB	Relocated Angle points AP08, AP13. AP04 to new locations. A house was fully avoided; between angle points AP19 and AP20 by changing the route .
	Traversing through a rubber and mango plantation	Shifted to a new location to minimize the damage for the rubber and mango plantation	Number of rubber and mango trees.	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey	CEB	Relocated AP13 angle point to a new location to minimize the damage on rubber and mango plantation, .

Project Activity	Potential impact	Mitigation measure	Parameter to be monitored	Method and Frequency	Institutional responsibility	Compliance
Pre-construction						
	Traversing through coconut and Areca nut plantation	Minimize traversing through the plantation and wherever practicable	Number of trees along the line route,	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey.	CEB	Minimize the damage caused to Coconut and Areca nut plantation; between angle points AP29 and AP30 by changing the route. Relocated angle points AP12,AP32 and AP50 to a new location Minimize the damage caused to Coconut and Areca nut plantation; between angle points AP30 and AP31 by changing the route.
	Traversing middle of a land	Avoid traversing middle of the land, shifted the angle point wherever practicable		Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey.	CEB	Relocated angle points AP30, AP37, AP52, AP53, AP54,AP 01, AP21, AP29,AP24,AP44,AP 45,AP34,AP35.AP36 new locations. .

Project Activity	Potential impact	Mitigation measure	Parameter to be monitored	Method and Frequency	Institutional responsibility	Compliance
Pre-construction						
	Traversing Close to the Nagadeepa Tank Dam.	shifted wherever practicable with the consent of the irrigation Department	Dam height	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey and joint site inspection with Irrigation Department. Approval is pending for the new route	CEB	New line route is proposed near angle point AP17. Approval is pending from the irrigation Department.
	Traversing through coconut and Rubber plantation	Minimize traversing through the plantation and shifted wherever practicable	Number of trees along the line route,	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey.	CEB	Minimize the damage caused to Coconut and Areca nut plantation; between angle points AP36B and AP37 . by changing line route
	Traversing through Mango and other trees.	Minimize traversing through the plantation and shifted wherever practicable	Number of trees along the line route,	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey. further reviewed after the notices are issued and DS's rulings	CEB	Minimize the damage caused to Mango and Other trees; between angle points AP42 and AP45 by changing line route

Project Activity	Potential impact	Mitigation measure	Parameter to be monitored	Method and Frequency	Institutional responsibility	Compliance
Pre-construction						
	Traversing through Rubber plantation	Minimize traversing through the plantation and shifted wherever practicable	Number of trees along the line route,	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey.	CEB	Relocated AP54 angle point to a new location
	Traversing close to a newly built house.	Avoid traversing close to the newly built house, shifted the angle point wherever practicable	Number of buildings along the line route,	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey.	CEB	A house was fully avoided; between angle points AP66 and AP67 by changing line route .
Selection of line corridor of 33kV tower line from Elpitiya - Mattaka	Traversing above houses/buildings.	Avoid/minimize traversing above houses/buildings wherever practicable	Number of buildings along the line route,	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey, further reviewed after the notices are issued and DS's rulings	CEB	Highly populated area in Ketandola (along Elpitiya-Pitigala main road) was avoided from AP05 to AP11. by changing line route. AP11 was also shifted to a new location due to new house construction under the proposed line route. 04 houses were avoided by changing line route between

Project Activity	Potential impact	Mitigation measure	Parameter to be monitored	Method and Frequency	Institutional responsibility	Compliance
Pre-construction						
						AP10 – AP11 – 01 Nos. AP11 – AP12 – 01 Nos. AP15 – AP16 – 01 Nos. AP19 – AP20 – 01 Nos.
	Land use restrictions in areas of high population density	Examine alternative routes, and select the route causing the minimum impacts on long-term land-use	urban and suburban centers of population crossed by the line, proportion of line route through such areas	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey, further reviewed after the notices are issued and DS's rulings	CEB	From AP24 to Mattaka gantry , the line route was changed due to an objection in Weihena GS Area. Another alternative route proposed by DS-Niyagama could not be finalized (Amargama GS Area) due to objections raised from occupants in the alternative route
	Located in Earth slip proven Areas	Shifted to a safer location with the recommendations of National Building research Organization (NBRO).	Condition of soil	Visual inspection, reviewed after join field visit with NBRO officials.	CEB/NBRO	avoided land slide prone areas along the line route according to NBRO recommendations. Following are the

Project Activity	Potential impact	Mitigation measure	Parameter to be monitored	Method and Frequency	Institutional responsibility	Compliance
Pre-construction						
						locations changed. AP13 and AP14
	Excessive requirements for clearance of way-leaves.	Examine alternative routes, and select the route causing the minimum possible removal of trees	proportion of line route through such areas	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey, further reviewed after the notices are issued and DS's rulings	CEB	Removing of some trees were fully avoided by changing the line route between angle points AP01 – AP16 and AP19 – AP24.
Selection of line corridor of 33kV tower line from Morawaka - Warukandeniya	Traversing through protected areas.	Avoid traversing above Protected and densely populated areas as much as possible	Protected areas in the vicinity	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey, further reviewed after the notices are issued and DS's rulings	CEB	avoided land slide prone areas along the line route according to NBRO recommendations AP17, AP30, AP32, AP35, AP35B (Newly added), AP36, AP39, AP44, AP46.
	Excessive requirements for clearance of way-leaves.	Examine alternative routes, and select the route causing the minimum possible removal of trees	proportion of line route through such areas	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey, further reviewed after the notices are issued and DS's rulings	CEB	Removing of some trees were fully avoided; by changing the line route between angle points AP01 – AP23 and AP30 – AP42.

Project Activity	Potential impact	Mitigation measure	Parameter to be monitored	Method and Frequency	Institutional responsibility	Compliance
Pre-construction						
Selection of line corridor of 33kV tower line from Matara - Yakabedda	Traversing through protected areas.	Avoid traversing above Protected and densely populated areas as much as possible	Protected areas in the vicinity	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey, further reviewed after the notices are issued and DS's rulings	CEB	Line route was adjusted at the Matara end due to Southern Expressway Extension – Phase 1 activities.
	Traversing above houses/buildings.	Avoid/minimize traversing above houses/buildings wherever practicable	Number of buildings along the line route,	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey, further reviewed after the notices are issued and DS's rulings	CEB	Highly populated area near Amalagoda Junction and Akuressa – Matara road was avoided from AP02 to AP15. The line route was changed.
	Excessive requirements for clearance of way-leaves.	Examine alternative routes, and select the route causing the minimum possible removal of trees	proportion of line route through such areas	Visual inspection, During preliminary route selection, reviewed during field visits and in final line design survey, further reviewed after the notices are issued and DS's rulings	CEB	Removing of some trees were fully avoided; by changing the line route between angle points AP24 – AP50

5.0 Implementation of Grievance Redress Mechanism and Complaints Received from Stakeholders

Since the project is at initial stage, discussions with groups and individuals are being conducted to make them aware of the proposed project. Thus, the project-affected community residing beside the proposed distribution line is being gained a reasonable knowledge about the potential grievances.

The selected line route is being carefully selected with the participation of all concerned parties [including the Government Agent (GA), Divisional Secretaries & relevant state organizations] and all the factors such as reserved areas clearance from the Department of Forest, communal issues etc. Telephone numbers are available for public to contact the project officials for raising any complaints, requesting information etc. Moreover public can make their complaints, views, comments etc via the official web site of CEB, www.ceb.lk. People can raise their complaints and grievances through relevant Government Officials in their areas; Grama Niladhari and Divisional Secretary. They can also contact PUCSL. Presently objections hearing meetings with objected people are being held within all the divisional secretary areas affected by the project, followed by the way leaves estimations and compensation payments with the participation of relevant divisional secretaries will be done.

6.0 Conclusion and Recommendations

Impacts are manageable and can be managed cost effectively - environmental impacts are likely to result from the proposed distribution system development. Careful mitigation and monitoring, specific selection criteria and review and assessment procedures for candidate subprojects have been specified to ensure that minimal impacts take place. The impacts can be reduced through mitigation -measures such as correction in work practices at the construction sites, or through the careful selection of sites and access routes.

The proposed project will have a number of positive and negative impacts on the existing environment. Significant improvement in the quality and reliability of the electricity supply to the project affected areas according to the current demand is the main positive impact. In addition, electricity supply will help agricultural activities, students and public, increase land value, create a lot of income generating activities, enhancement of safety at night, and increase mobility during night.

Environment pollution due to cut and fill operations, transportation of construction materials, disposal of debris, nuisance from dust, noise, vehicle fumes, black smoke, vibration etc. due to construction activities are the short term negative impacts due to the proposed project.

Proper GRM will have to be implemented to overcome public inconvenience during the proposed project activities.

Benefits far outweigh negative impacts - the proposed project will improve operational efficiency and quality of power, reliability of the system and at the same time will reduce losses. Supply of power to the region will boost economic development of the area by strengthening the power distribution infrastructure. Overall, the major social and environmental impacts associated with distribution subprojects are limited to the construction period and can be mitigated to an acceptable level by implementation of recommended measures and by best engineering and environmental practices. The impact matrix depicts that the project will not have significant negative environmental impacts and the project would help in improving the socio-economic conditions of this developing state.

Distribution subprojects require land for gantry based switching stations and hybrid power plants but do not require land for laying the distribution lines. The alignment is sited away from major settlements, whenever possible, to account for future urban expansion. Forests areas and thick vegetation areas are avoided, wherever possible; however, route alignment passes through scrublands, cultivated paddy fields, rubber cultivations, rubber plantations, tea cultivations, etc. The lines will also pass through degraded forest areas but avoid any national park or sanctuary. The alignments in this project have also avoided wetlands and geologically unstable areas, which can also pose foundation related problems. No land will be required for placing distribution towers on private land thereby avoiding any relocation of project affected people.

The proposed construction activities will cause significant environment impact and most of the potential environment impacts are temporary in nature mainly restricted to pre-construction and construction periods. The Environment Management Plan (EMP) and the Environment Monitoring Plan (EMoP) have been prepared for the project and responsibilities for implementation assigned. The anticipated environmental impacts can be easily mitigated through implementation of EMP.

Overall, the social and environmental impacts associated with distribution project are limited to the construction period and can be mitigated to an acceptable level by implementation of recommended measures and by best engineering and environmental practices.