9th Semi Annual (January-June, 2020) Report

Social Safeguard and Monitoring Report

Ashuganj 400 MW (East) Combined Cycle Power Plant Project (CCPP)
Ashuganj Power Station Company Ltd.
Ashuganj, Brahmanbaria.

Social Safeguard and Monitoring Report

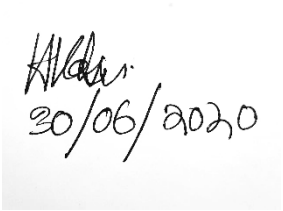
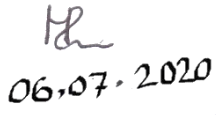
9th Semi-Annual (January – June 2020) Report

ASHUGANJ 400 MW (EAST) COMBINED CYCLE POWER PLANT PROJECT

At Ashuganj, Brahmanbaria

Ashuganj Power Station Company Limited (APSCL)

9th Semi Annual Social Safeguard and Monitoring Report

Rev	Date	Prepared By	Approved By	Description
00	June 2020	 A.K.M. Humayan Kabir Dewan Deputy Manager (HS&E) Ashuganj 400 MW East Project APSCL.	 Md. Atiqur Rahman, Manager (HS&E), APSCL.	9th Semi-Annual Social Safeguard and Monitoring Report

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Semi-Annual Social Safeguard and Monitoring Report
For
For Ashuganj 400 MW (East) Combined Cycle Power Plant (CCPP) Project
(Ashuganj, Brahmanbaria)

Period: 9th Semi-Annual (January –June 2020)

EXECUTIVE SUMMARY

During the period from January to June 2020, the EPC Contractor has carried out mainly HRSG foundation works, Central Control Building (CCB), Main Building and Turbine Base, Gas booster and conditioning station, Exhaust Stack, Air compressor Building, Air Storage tank, Service and Fire water pump house, Service and Fire water tank, Emergency Oil pit, Oily waste water treatment station, sewage treatment station etc. To complete those works, they mobilize the equipment's, workers and materials. In this period there is no discharge and for this, there is no impact on the living things in the water body. Air Pollution caused by dust emission during construction traffic activities is controlled by good management practices like continuous water spray over the unpaved or bare surfaces, covering soil materials pile. This plant is constructed by replacing old inefficient Unit-3 plant (150 MW) that is now generating in total of 129 MW and emits 17,78,010 ton of CO_2 per year. But when 400 MW CCPP (East) plant will come in operation the Unit-3 will be closed and this 400 MW CCPP (East) will emit only 10,23,860 ton of CO_2 per year at full load. So, compared to that old inefficient power plant unit, this new 400 MW CCPP (East) plant will reduce 7,54,150 ton of CO_2 per year. That will be a significant reduction of GHG emission. Soil and water pollutions are also prevented by proper management like spill prevention and well drainage system. Solid waste is managed by the waste management plan. Noise pollution is also a regarding issue during Steel Structure Erection activities for using of demolition equipment's and for traffic and transport. Noise level is reduced by using of fine-tuned low noise level construction equipment's and by the proper traffic management system. Every personnel use personal protective equipment to ensure own safety. The remarkable achievement in this period is that till now there is no record of accident or injury. Beside this, visual monitoring included traffic volume, site security, personal protective equipment, incident record and reporting, solid and oily wastes generation and disposal, worker's health, complaints from neighbors, safety orientation and training of workers, sanitation and drinking water facilities to the worker's and site drainage is covered during this period and its found that all aspects regarding visual monitoring were found in line with the environment management plan and required environmental guidelines. APSCL is committed to keeping the accident level in Zero by implementing its proper occupational health and safety management system. So, there is no impacts on local people livelihood, land use pattern or land ownership. Even there is no need to resettle any people because of APSCL own existing plant land. This project also has a positive effect on the socio-economic condition. Local skilled and semi-skilled peoples are engaged in different levels of construction activities and they are happy about getting employment opportunities.

CHAPTER 1

INTRODUCTION

1.0 INTRODUCTION

1.1 Location of the Project

The power plant is setting up at the existing power plant area of Ashuganj Power Station Company Ltd. (APSCL) at Ashuganj, Brahmanbaria, Bangladesh. Ashuganj is located on the east bank of the Meghna River about 91 km Northeast to Dhaka & is connected by railway & highway way with Dhaka. There also exists good waterway connection to the site by seaports of Chittagong and Mongla. The project is in Sonaram Mouza of Ashuganj Upazila, Brahmanbaria District. The location map of APSCL 400 MW (East) is shown in Figure 1. Bangladesh UK Friendship Bridge across the river Meghna (Meghna Bridge) connects both the banks of Bhairab and Ashuganj which connects with Dhaka-Sylhet highway which passes at the south side of the project. Meghna River is in the north side of the project. A khal is situated in the east side of the project and the total APSCL complex including APSCL office is located on the west side of the project. The detail unit wise maximum electricity Generation of APSCL is given **Table-1**.

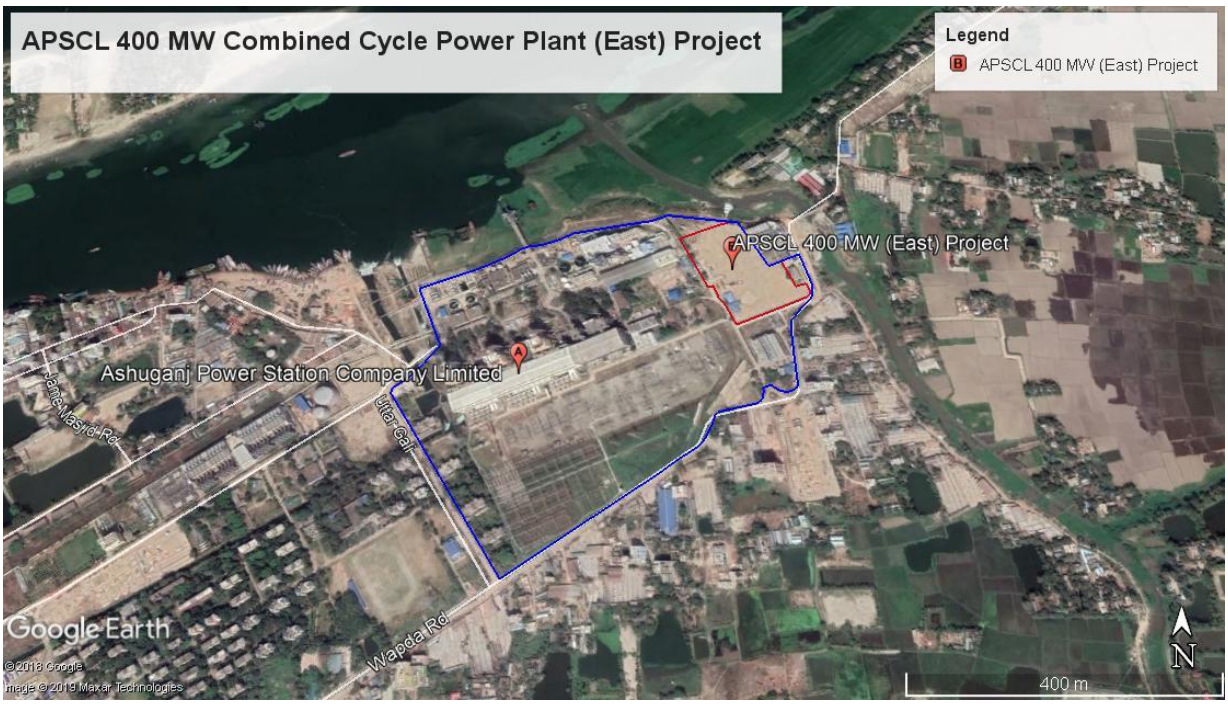


Figure-1: Location Map of APSCL 400 MW CCPP (East) project

Table-1: Unit Wise Maximum Electricity Generation of APSCL

Description	UNIT-3	UNIT-4	UNIT-5	50 MW GE	225MW CCPP	Ashuganj CCPP (South)	Ashuganj 450MW CCPP (North)	Total
Installed Capacity (MW)	150	150	150	53	223	382	389	1497

Present (De-rated) Capacity (MW)	**129**	**138**	**128**	**46**	**222**	**359**	**360**	**1382**

Source: APSCL Website

1.2 Brief Project Description

A Combined Cycle Power Plant of Total net 400±5% MW capacity at site condition (35 ºC, 1.013 bars, 98% R.H.) is intended to be set by Ashuganj Power Station Company Limited inside the existing premises. The Power Station will relate to the Ashuganj 400 KV Gas Insulated Switchgear (GIS) Grid Sub-Station with necessary electrical equipment. The basic concept for the Ashuganj 400 MW CCPP (East) project shall be a CCGT Plant based on one Gas Turbine Generator unit (GTG), one Unfired Heat Recovery Steam Generator and one Steam Turbine Generator unit (STG). Water-steam cycle will be three pressure levels (HP, IP and LP) with reheat. The Ashuganj 400 MW (East) Combined Cycle Power Plant Project complex is located on the Southern bank of Meghna river, just outside and to the East of Bhairab Bridge The power plant is in Ashuganj Upazilla. The entire power plant is completely enclosed, covers an area of about 4.50 acres and is owned by the Ashuganj Power Station Company Limited (APSCL).

1.3 Objective of the Report

The objective of the social safeguard management and monitoring is to record social impacts resulting from the project activities and to ensure implementation of the "mitigation measures" identified earlier in order to reduce adverse impacts and enhance positive impacts from specific project activities. Besides, it would also address any unexpected or unforeseen environmental impacts that may arise during construction and operation phases of the project.

The EMP clearly layout: (a) the measures to be taken during both construction and operation phases of the project to eliminate or offset adverse environmental impacts, or reduce them to acceptable levels; (b) the actions needed to implement these measures; and (c) a monitoring plan to assess the effectiveness of the mitigation measures employed. Environmental management and monitoring activities for the under-construction power plant project could be divided into management and monitoring: (a) during the construction phase, and (b) during the operation phase.

The application of this plan involved an environmental control and monitoring of the work by a technical team to verify compliance with all the indications, limitations or environmental restrictions set forth in the Environmental Management Plan (EMP), EIA and the Project, with the minimal damage caused by work on the environment.

The information obtained by the implementation of the Socio-Environmental Action Plan is required to define preventive measures or define corrective actions. The information generated because of implementing the Socio-Environmental Action Plan must be duly forwarded to the Department of Environment (DoE).

This report is the Nineth semi-annual Social Safeguard and Monitoring Report, which covers the period from January 2020 to June 2020, in compliance with the socio-environmental scope of the construction supervision.

This report is prepared by Ashuganj Power Station Company Limited (APSCL) under the Asian Development Bank, ADB Loan Project Loan/ Grant Nos.: Loan 3350-BAN: Power System Expansion and Efficiency Improvement investment Program, Tranche-3.

1.4 Project Progress Status and Implementation Schedule

The basic concept for the Ashuganj East project shall be a CCGT Plant based on one Gas Turbine Generator unit (GTG), one Unfired Heat Recovery Steam Generator and one Steam Turbine Generator unit (STG). Water-steam cycle will be three pressure levels (HP, IP and LP) with reheat.

General components of the proposed CCGT project include the following: (i) 400±5% MW CCGT unit complete with necessary auxiliaries including air intake filtration facilities, inlet and exhaust silencers, control systems, main stack with delivery damper, gas fuel treatment system, (ii) Power generator for the gas turbine unit with all auxiliaries including cooling system, control system, excitation system; (iii) one Steam turbine unit complete with necessary auxiliaries including heater, pumps, steam turbine bypass, control systems; (iv) Power generator for the steam turbine unit with all auxiliaries including cooling system, control system; (v) Heat Recovery Steam Generating system with auxiliaries including deaerators, pumps, exhaust stack, control system; (vi) Gas booster compressor system with all auxiliaries and control system; (vii) Di-mineralized water system complete with pumps, tanks, control system (viii) Effluent treatment system with all auxiliaries including, chemical dosing systems, settling units, control system, pumps; (ix) Other essential plant equipment including air compressor, natural gas supply system with 2200 m gas pipeline, circulating water system, cooling water pond, raw water intake structure, condensate system; (x) Construction of internal roads. (xi) Switch room (xii) Emergency generator and transformer.

A. Project Progress Status

The updated status of Ashuganj 400 Mw (East) Combined Cycle Power Plant Project (CCPP) from January 2020 to June 2020 is given below in Table:

Sl. No.	Work Description	Status
1.	**Demolition of old Power Plant** Old power plant will be demolished	Completed 100%
	Civil Works:	Description
1.	Main Building	Foundation work has finished and Super Structure work going on
	Bypass Stack	Foundation work has finished.
	Heat Recovery Stream Engine (HRSG)	Super Structure work is going on
	Exhaust Stack	Super Structure work is going on
	Gas booster and conditioning station	Site Processing work has Started
	Gas cold vent stack	Not yet started
	Start Up boiler	Not yet started
	Air compressor Building	Super Structure work is going on
	Air Storage tank	Foundation work has completed
	Service and Fire water pump house	Foundation work has completed
	Service and Fire water tank	Foundation work has completed

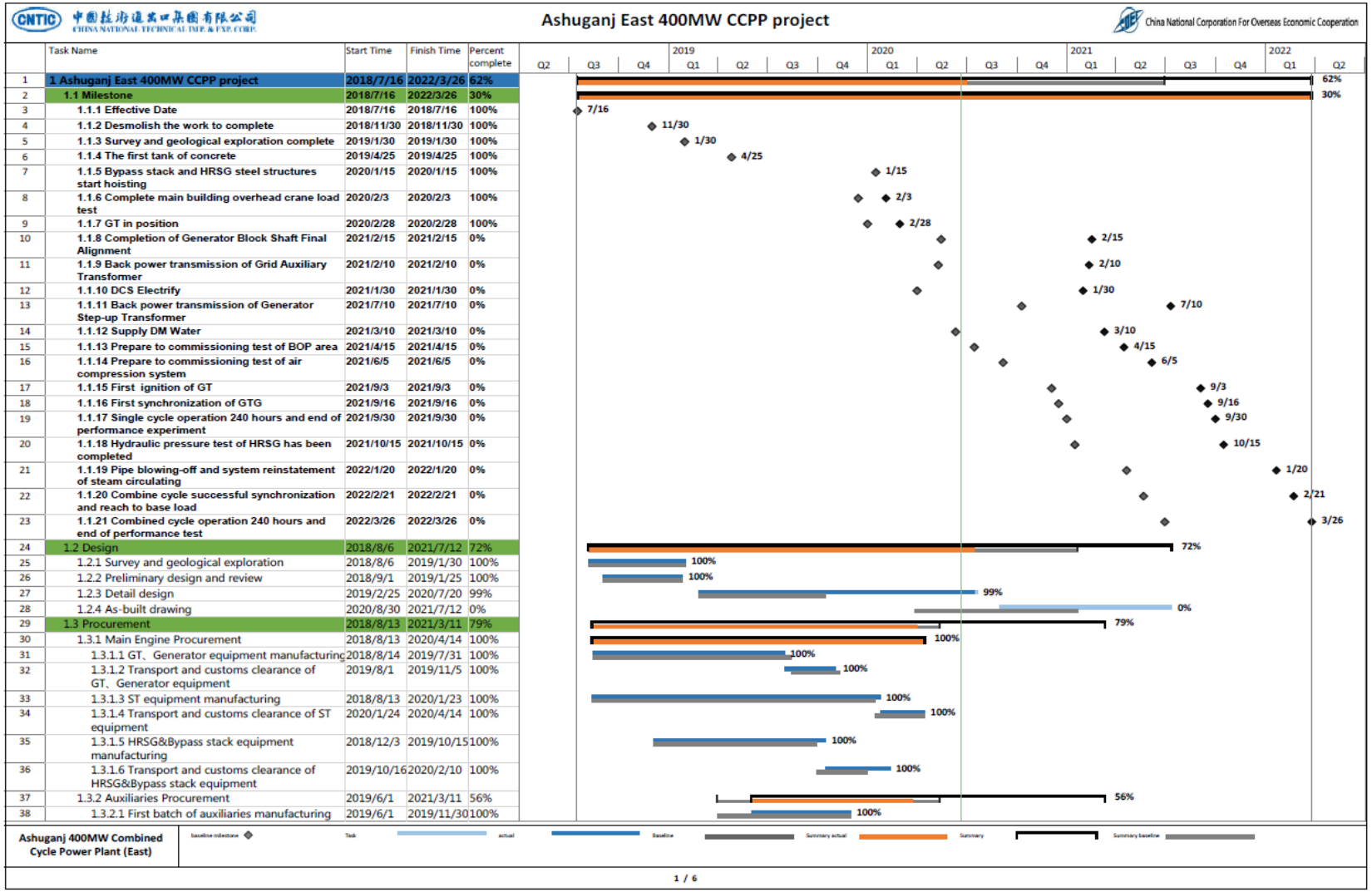
	Emergency Oil pit, Oily waste water treatment station, sewage treatment station	Not yet started
	Power control center	Super Structure work is going on
	Central control Building (CCB)	Super Structure work is going on
	RMS	Site Processing work has Started
	Transformer	Site Processing work Started
	Condenser Pit	Foundation work finished
	Turbine Generator	Foundation work finished
	Mechanical and Electrical Facilities	Description
2.	Consist of: -Erection of HRSG, Steam Turbine, Generator, Cooling Tower, CW Pump House and all other BOP Equipment's /Components of Power Plant. -Electrical and I&C works with commissioning	Not yet started

Fig-2: Latest Picture of the Project Site-Top View (Construction is going on)

B. Implementation Schedule for the Project:

The tentative implementation schedule of Ashuganj 400 Mw (East) Combined Cycle Power Plant Project (CCPP) is given below:

Implementation Schedule (Tentative):



Ashuganj East 400MW CCPP project

China National Corporation For Overseas Economic Cooperation

	Task Name	Start Time	Finish Time	Percent complete
1	1 Ashuganj East 400MW CCPP project	2018/7/16	2022/3/26	62%
2	1.1 Milestone	2018/7/16	2022/3/26	30%
3	1.1.1 Effective Date	2018/7/16	2018/7/16	100%
4	1.1.2 Desmolish the work to complete	2018/11/30	2018/11/30	100%
5	1.1.3 Survey and geological exploration complete	2019/1/30	2019/1/30	100%
6	1.1.4 The first tank of concrete	2019/4/25	2019/4/25	100%
7	1.1.5 Bypass stack and HRSG steel structures start hoisting	2020/1/15	2020/1/15	100%
8	1.1.6 Complete main building overhead crane load test	2020/2/3	2020/2/3	100%
9	1.1.7 GT in position	2020/2/28	2020/2/28	100%
10	1.1.8 Completion of Generator Block Shaft Final Alignment	2021/2/15	2021/2/15	0%
11	1.1.9 Back power transmission of Grid Auxiliary Transformer	2021/2/10	2021/2/10	0%
12	1.1.10 DCS Electrify	2021/1/30	2021/1/30	0%
13	1.1.11 Back power transmission of Generator Step-up Transformer	2021/7/10	2021/7/10	0%
14	1.1.12 Supply DM Water	2021/3/10	2021/3/10	0%
15	1.1.13 Prepare to commissioning test of BOP area	2021/4/15	2021/4/15	0%
16	1.1.14 Prepare to commissioning test of air compression system	2021/6/5	2021/6/5	0%
17	1.1.15 First ignition of GT	2021/9/3	2021/9/3	0%
18	1.1.16 First synchronization of GTG	2021/9/16	2021/9/16	0%
19	1.1.17 Single cycle operation 240 hours and end of performance experiment	2021/9/30	2021/9/30	0%
20	1.1.18 Hydraulic pressure test of HRSG has been completed	2021/10/15	2021/10/15	0%
21	1.1.19 Pipe blowing-off and system reinstatement of steam circulating	2022/1/20	2022/1/20	0%
22	1.1.20 Combine cycle successful synchronization and reach to base load	2022/2/21	2022/2/21	0%
23	1.1.21 Combined cycle operation 240 hours and end of performance test	2022/3/26	2022/3/26	0%
24	1.2 Design	2018/8/6	2021/7/12	72%
25	1.2.1 Survey and geological exploration	2018/8/6	2019/1/30	100%
26	1.2.2 Preliminary design and review	2018/9/1	2019/1/25	100%
27	1.2.3 Detail design	2019/2/25	2020/7/20	99%
28	1.2.4 As-built drawing	2020/8/30	2021/7/12	0%
29	1.3 Procurement	2018/8/13	2021/3/11	79%
30	1.3.1 Main Engine Procurement	2018/8/13	2020/4/14	100%
31	1.3.1.1 GT、Generator equipment manufacturing	2018/8/14	2019/7/31	100%
32	1.3.1.2 Transport and customs clearance of GT、Generator equipment	2019/8/1	2019/11/5	100%
33	1.3.1.3 ST equipment manufacturing	2018/8/13	2020/1/23	100%
34	1.3.1.4 Transport and customs clearance of ST equipment	2020/1/24	2020/4/14	100%
35	1.3.1.5 HRSG&Bypass stack equipment manufacturing	2018/12/3	2019/10/15	100%
36	1.3.1.6 Transport and customs clearance of HRSG&Bypass stack equipment	2019/10/16	2020/2/10	100%
37	1.3.2 Auxiliaries Procurement	2019/6/1	2021/3/11	56%
38	1.3.2.1 First batch of auxiliaries manufacturing	2019/6/1	2019/11/30	100%

Ashuganj 400MW Combined Cycle Power Plant (East)

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Ashuganj East 400MW CCPP project

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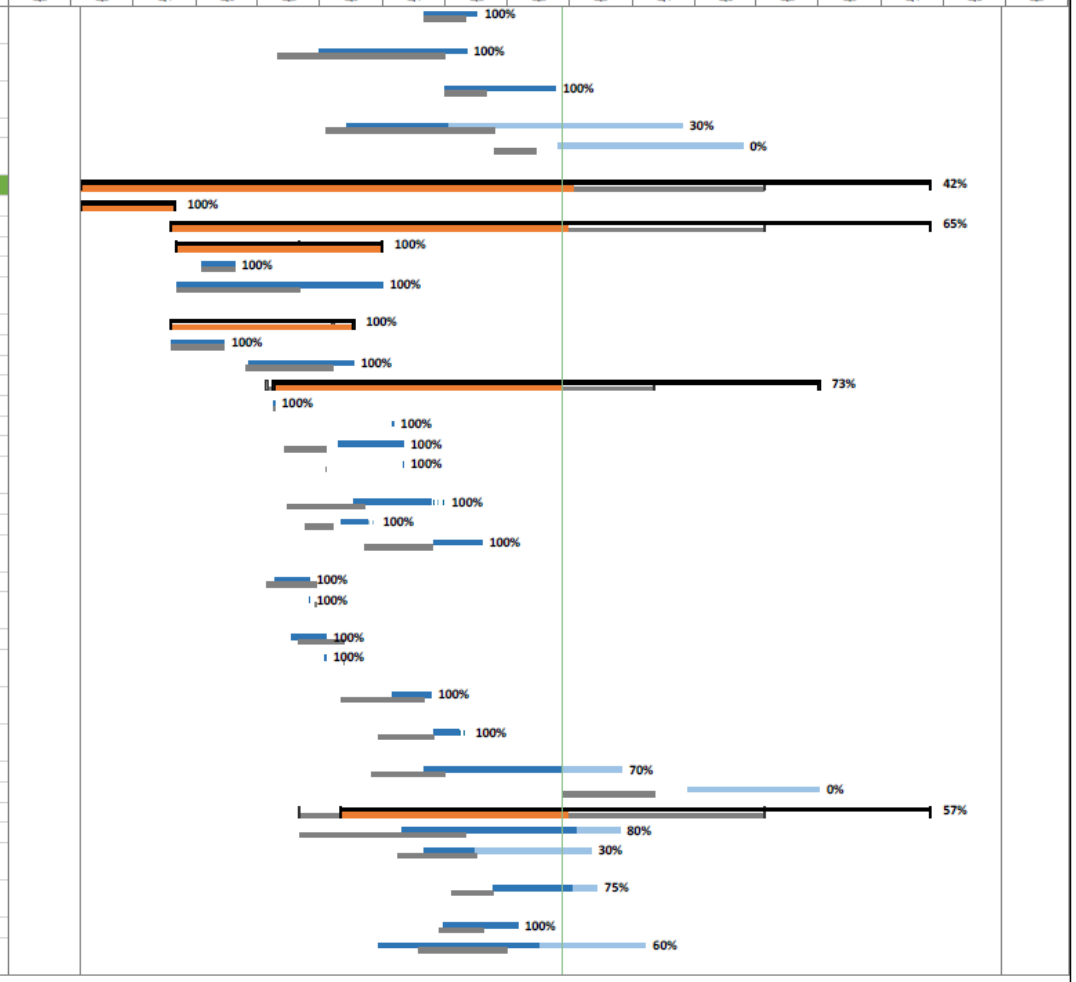
	Task Name	Start Time	Finish Time	Percent complete
39	1.3.2.2 Transport and customs clearance of first batch auxiliaries	2019/12/1	2020/2/15	100%
40	1.3.2.3 Secondary batch auxiliaries manufacturing	2019/6/30	2020/1/31	100%
41	1.3.2.4 Transport and customs clearance of secondary batch auxiliaries	2020/1/1	2020/6/10	100%
42	1.3.2.5 The third batch auxiliaries manufacturing	2019/8/10	2020/12/13	30%
43	1.3.2.6 Transport and customs clearance of the third batch auxiliaries	2020/6/15	2021/3/11	0%
44	1.4 Construction	2018/7/16	2021/12/12	42%
45	**1.4.1 Demolition work in old plant**	**2018/7/16**	**2018/11/3(**	**100%**
108	1.4.2 Erection、Structure	2018/11/25	2021/12/12	65%
109	1.4.2.1 Preliminary Work for Construction	2018/12/3	2019/9/30	100%
110	1.4.2.1.1 Plant ground leveling	2019/1/10	2019/2/25	100%
111	1.4.2.1.2 Preliminary work for construction and temporary building	2018/12/3	2019/9/30	100%
112	1.4.2.2 Foundation treatment	2018/11/25	2019/8/19	100%
113	1.4.2.2.1 test pile	2018/11/25	2019/2/10	100%
114	1.4.2.2.2 Piling foundation	2019/3/18	2019/8/19	100%
115	1.4.2.3 Thermodynamic System-Construction	2019/4/25	2021/7/2	73%
116	1.4.2.3.1 The first tank of concrete	2019/4/25	2019/4/25	100%
117	1.4.2.3.2 Main building steel structure start	2019/10/16	2019/10/16	100%
118	1.4.2.3.3 Main building foundation	2019/7/29	2019/10/31	100%
119	1.4.2.3.4 Main building foundation reaches 0 meter level	2019/10/31	2019/10/31	100%
120	1.4.2.3.5 GT、Generator and ST foundation	2019/8/20	2019/12/30	100%
121	1.4.2.3.6 Control room foundation	2019/8/1	2019/9/20	100%
122	1.4.2.3.7 Distribution room of center control building	2019/12/16	2020/2/23	100%
123	1.4.2.3.8 Bypass stack foundation	2019/4/27	2019/6/15	100%
124	1.4.2.3.9 Bypass stack foundation reaches 0 meter level	2019/6/15	2019/6/15	100%
125	1.4.2.3.10 HRSG foundation	2019/5/21	2019/7/9	100%
126	1.4.2.3.11 HRSG foundation reaches 0 meter level	2019/7/9	2019/7/9	100%
127	1.4.2.3.12 Installation of main building steel structure	2019/10/16	2019/12/10	100%
128	1.4.2.3.13 Complete main building overhead crane installation and load test	2019/12/15	2020/2/3	100%
129	1.4.2.3.14 Main building closed completion	2019/11/30	2020/9/15	70%
130	1.4.2.3.15 Plant comprehensive pipe rack	2020/12/22	2021/7/2	0%
131	1.4.2.4 Auxiliary System-Erection	2019/8/1	2021/12/12	57%
132	1.4.2.4.1 Civil construction of CW pump house	2019/10/30	2020/9/12	80%
133	1.4.2.4.2 Civil construction of comprehensive water pump house	2019/12/1	2020/8/1	30%
134	1.4.2.4.3 Civil construction of hydrogen generation station	2020/3/12	2020/8/10	75%
135	1.4.2.4.4 Civil construction of siphon well	2019/12/30	2020/4/15	100%
136	1.4.2.4.5 Civil construction of gas booster and regulating station/RMS	2019/9/25	2020/10/20	60%



Ashuganj 400MW Combined Cycle Power Plant (East)

baseline milestone ◆ Task actual Baseline Summary actual Summary Summary baseline

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Ashuganj East 400MW CCPP project

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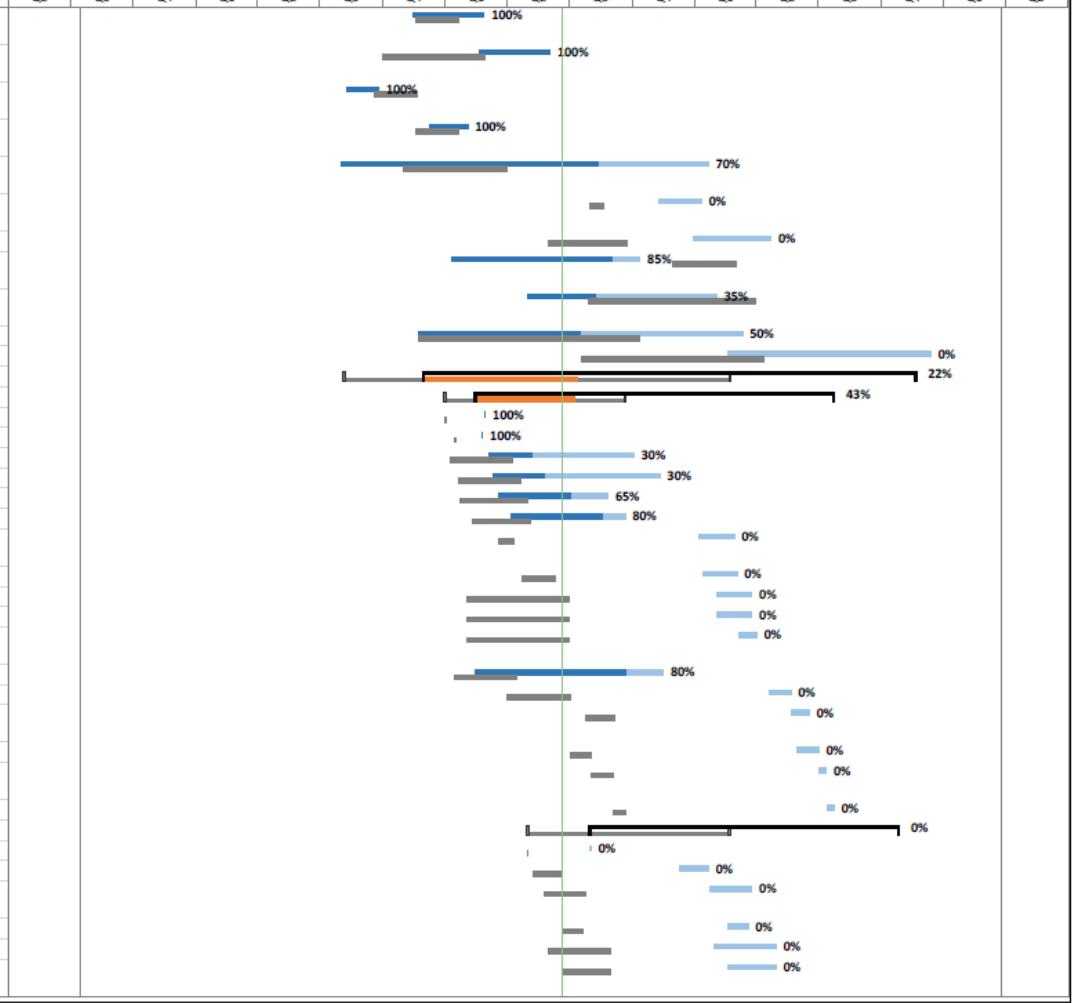
	Task Name	Start Time	Finish Time	Percent complete
137	1.4.2.4.6 Civil construction of air compressor house	2019/11/15	2020/2/25	100%
138	1.4.2.4.7 Bracket for crossing river of circulating water	2020/2/20	2020/6/2	100%
139	1.4.2.4.8 Generator step-up transformer foundation and firewall	2019/8/10	2019/9/25	100%
140	1.4.2.4.9 Grid auxiliary transformer and 230kV GIS foundation	2019/12/10	2020/2/2	100%
141	1.4.2.4.10 Civil construction of water purification station	2019/8/1	2021/1/20	70%
142	1.4.2.4.11 Civil construction of auxiliary boiler house	2020/11/10	2021/1/10	0%
143	1.4.2.4.12 Plant road	2020/12/30	2021/4/22	0%
144	1.4.2.4.13 Civil construction of Extension workshop	2020/1/10	2020/10/12	85%
145	1.4.2.4.14 Civil construction of other auxiliary buildings	2020/5/1	2021/2/1	35%
146	1.4.2.4.15 Civil construction of warehouse	2019/11/23	2021/3/11	50%
147	1.4.2.4.16 Plant utility	2021/2/18	2021/12/12	0%
148	1.4.3 Installation	2019/12/1	2021/11/20	22%
149	1.4.3.1 GT、Generator installation	2020/2/15	2021/7/23	43%
150	1.4.3.1.1 GT module in position	2020/2/28	2020/2/28	100%
151	1.4.3.1.2 Generator in position	2020/2/24	2020/2/24	100%
152	1.4.3.1.3 GT basic module	2020/3/5	2020/10/3	30%
153	1.4.3.1.4 Generator	2020/3/12	2020/11/10	30%
154	1.4.3.1.5 Air intake system	2020/3/20	2020/8/26	65%
155	1.4.3.1.6 Air exhaust system	2020/4/6	2020/9/20	80%
156	1.4.3.1.7 Sealing oil and hydrogen control module	2021/1/7	2021/2/27	0%
157	1.4.3.1.8 Other auxiliary modules	2021/1/13	2021/3/3	0%
158	1.4.3.1.9 Pipes of gas system system	2021/2/3	2021/3/25	0%
159	1.4.3.1.10 Equipment&pipes of lube oil system	2021/2/3	2021/3/25	0%
160	1.4.3.1.11 Pipes for cooling&surge-preventing and deflation	2021/3/6	2021/4/1	0%
161	1.4.3.1.12 Bypass stack	2020/2/15	2020/11/15	80%
162	1.4.3.1.13 GT enclosure and ventilating system	2021/4/20	2021/5/21	0%
163	1.4.3.1.14 Insulation painting for GT equipment and pipe	2021/5/23	2021/6/17	0%
164	1.4.3.1.15 Circulating washing of oil system	2021/5/31	2021/7/1	0%
165	1.4.3.1.16 Gas turbine and generator check coupling connection and casing cover	2021/7/3	2021/7/12	0%
166	1.4.3.1.17 Test of generator tightness	2021/7/15	2021/7/23	0%
167	1.4.3.2 ST installation	2020/8/1	2021/10/26	0%
168	1.4.3.2.1 ST in position	2020/8/1	2020/8/1	0%
169	1.4.3.2.2 Condenser	2020/12/10	2021/1/20	0%
170	1.4.3.2.3 ST open&close cooling water equipment and pipe	2021/1/23	2021/3/25	0%
171	1.4.3.2.4 Condensate water pump installation	2021/2/18	2021/3/19	0%
172	1.4.3.2.5 Equipment and pipe for oil system	2021/1/30	2021/4/29	0%
173	1.4.3.2.6 Equipment and pipe for hydraulic oil system	2021/2/19	2021/4/29	0%



Ashuganj 400MW Combined Cycle Power Plant (East)

baseline milestone ◆ Task actual Baseline Summary actual Summary Summary baseline

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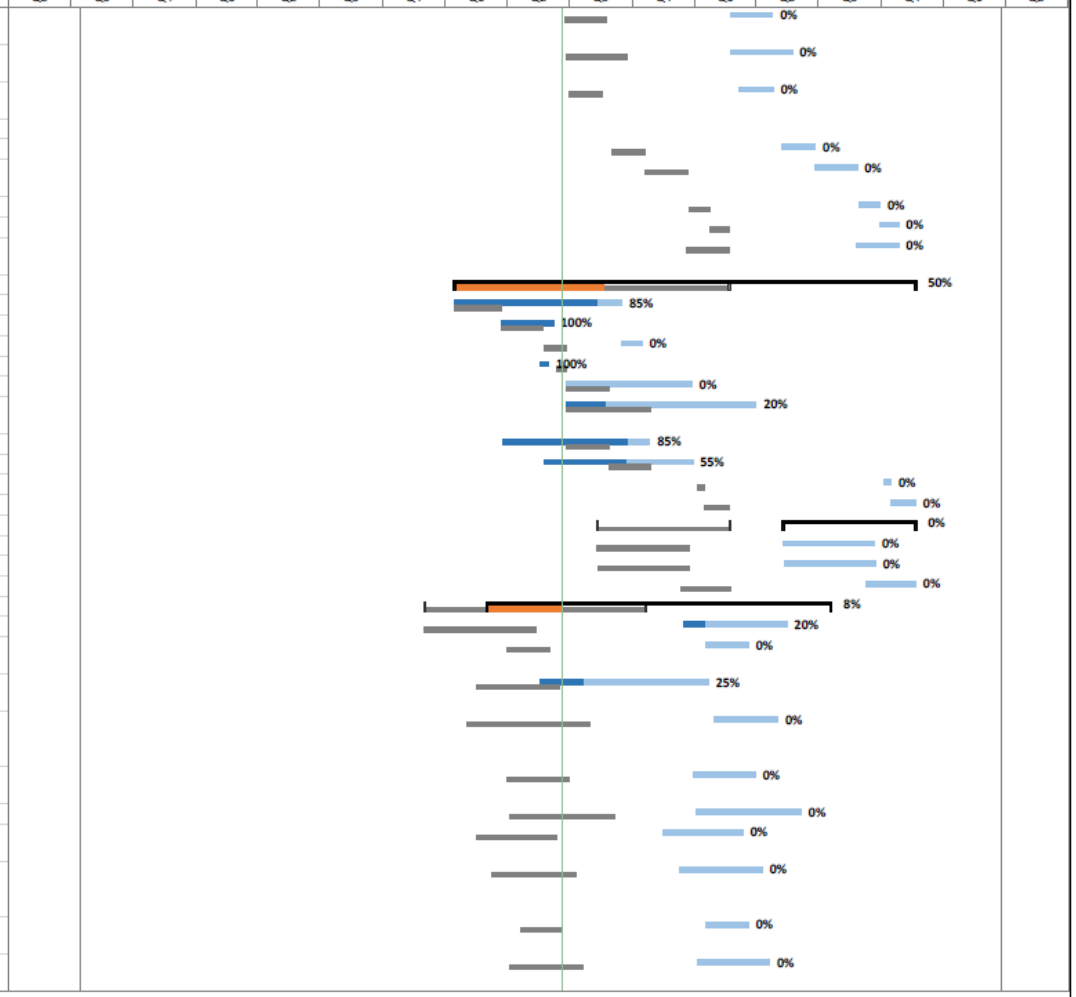
Ashuganj East 400MW CCPP project

China National Corporation For Overseas Economic Cooperation

	Task Name	Start Time	Finish Time	Percent complete
174	1.4.3.2.7 Equipment and pipe for vacuum system	2021/2/23	2021/4/23	0%
175	1.4.3.2.8 Equipment and pipe for drainage,steam seal	2021/2/23	2021/5/23	0%
176	1.4.3.2.9 Equipment and pipe for bypass system	2021/3/7	2021/4/25	0%
177	1.4.3.2.10 E-turbine	2021/4/5	2021/5/7	0%
178	1.4.3.2.11 HP-turbine	2021/5/8	2021/6/26	0%
179	1.4.3.2.12 Common coupling alignment GT/GENO/ST	2021/6/27	2021/8/26	0%
180	1.4.3.2.13 Washing of control oil system	2021/8/29	2021/9/29	0%
181	1.4.3.2.14 Bearing casing cover	2021/9/29	2021/10/26	0%
182	1.4.3.2.15 Insulation and painting of equipment and pipe	2021/8/25	2021/10/26	0%
183	1.4.3.3 HRSG installation	2020/1/15	2021/11/20	50%
184	1.4.3.3.1 HRSG steel structure	2020/1/15	2020/9/15	85%
185	1.4.3.3.2 HRSG generating surface module	2020/3/24	2020/6/7	100%
186	1.4.3.3.3 Feed water pump	2020/9/15	2020/10/15	0%
187	1.4.3.3.4 Hoisting of HRSG drums	2020/5/20	2020/5/31	100%
188	1.4.3.3.5 Feed water pipes	2020/6/26	2020/12/27	0%
189	1.4.3.3.6 HRSG other auxiliary equipment and pipes	2020/6/27	2021/3/31	20%
190	1.4.3.3.7 HRSG stack	2020/3/26	2020/10/26	85%
191	1.4.3.3.8 HRSG duct	2020/5/25	2020/12/28	55%
192	1.4.3.3.9 Hydraulic test of HRSG	2021/10/5	2021/10/15	0%
193	1.4.3.3.10 Insulation and painting of HRSG	2021/10/16	2021/11/20	0%
194	1.4.3.4 W/S Pipe Installation	2021/5/11	2021/11/20	0%
195	1.4.3.4.1 HP,IP,LP steam pipe	2021/5/11	2021/9/21	0%
196	1.4.3.4.2 Condensate water pipe installation	2021/5/13	2021/9/22	0%
197	1.4.3.4.3 Pipe insulation works	2021/9/10	2021/11/20	0%
198	1.4.3.5 Auxiliaries installation	2020/3/3	2021/7/19	8%
199	1.4.3.5.1 Installation of plant pipe	2020/12/15	2021/5/15	20%
200	1.4.3.5.2 Installation of equipment and pipe for air compressor	2021/1/18	2021/3/20	0%
201	1.4.3.5.3 Installation of equipment and pipe for circulating water pump house	2020/5/20	2021/1/20	25%
202	1.4.3.5.4 Installation of inlet、outlet pipe for CW pump house(include outer drainage of condenser)	2021/1/30	2021/5/2	0%
203	1.4.3.5.5 Installation of water purification station equipment system	2020/12/30	2021/3/30	0%
204	1.4.3.5.6 Installation of inlet pipe of natural ga	2021/1/3	2021/6/5	0%
205	1.4.3.5.7 Installation of equipment and pipe for comprehensive water pump house	2020/11/15	2021/3/12	0%
206	1.4.3.5.8 Fabrication and installation of service water、fire、DM and supplement water tank	2020/12/9	2021/4/9	0%
207	1.4.3.5.9 Installation of equipment and pipe for hydrogen generation station	2021/1/18	2021/3/20	0%
208	1.4.3.5.10 Installation of equipment and pipe for gas booster and regulating station&RMS	2021/1/4	2021/4/20	0%



Ashuganj 400MW Combined Cycle Power Plant (East)

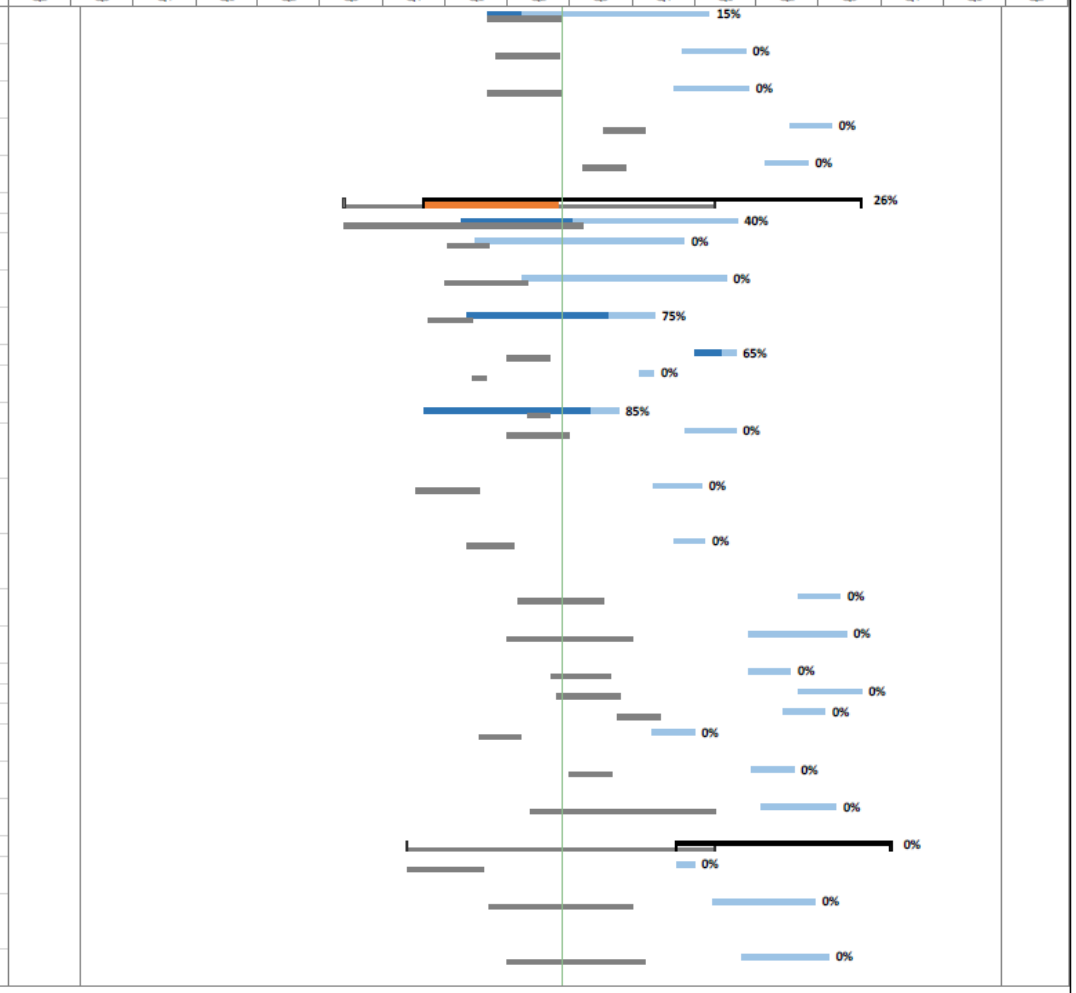
baseline milestone ◆ Task actual Baseline Summary actual Summary Summary baseline

CNTIC 中国技术进出口集团有限公司 CHINA NATIONAL TECHNICAL IMP. & EXP. CORP.

Ashuganj East 400MW CCPP project

China National Corporation For Overseas Economic Cooperation

	Task Name	Start Time	Finish Time	Percent complete
209	1.4.3.5.11 Installation of equipment and pipe for fire water system	2020/3/3	2021/1/20	15%
210	1.4.3.5.12 Installation of equipment and pipe for sampling and dosing system	2020/12/13	2021/3/15	0%
211	1.4.3.5.13 Installation of equipment and pipe for drain water treatment system	2020/12/2	2021/3/20	0%
212	1.4.3.5.14 Installation of equipment and pipe for auxiliary boiler house	2021/5/20	2021/7/19	0%
213	1.4.3.5.15 Insulating& painting of auxiliary system	2021/4/15	2021/6/15	0%
214	1.4.3.6 Electrical System	2019/12/1	2021/9/1	26%
215	1.4.3.6.1 Plant grounding work	2020/1/25	2021/3/3	40%
216	1.4.3.6.2 Installation and cable laying of 230kV GIS distribution device	2020/2/15	2020/12/15	0%
217	1.4.3.6.3 Installation and cable laying of 400kV GIS distribution device	2020/4/22	2021/2/15	0%
218	1.4.3.6.4 Installation of main control and DC system	2020/2/2	2020/11/2	75%
219	1.4.3.6.5 Installation of diesel generator	2021/1/1	2021/3/1	65%
220	1.4.3.6.6 Installation of grid auxiliary transformer	2020/10/12	2020/11/1	0%
221	1.4.3.6.7 Installation PCC	2019/12/1	2020/9/10	85%
222	1.4.3.6.8 Installation of Generator Step-up Transformer and unit auxiliary transformer	2020/12/18	2021/3/1	0%
223	1.4.3.6.9 Installation of unit electricity system (grid auxiliary transformer electrify)	2020/11/2	2021/1/10	0%
224	1.4.3.6.10 Installation cable laying and wiring of unit electricity system (grid auxiliary transformer electrify)	2020/12/1	2021/1/15	0%
225	1.4.3.6.11 Installation of generator excitation system	2021/6/1	2021/8/1	0%
226	1.4.3.6.12 Cable laying and wiring of auxiliary workshop	2021/3/20	2021/8/10	0%
227	1.4.3.6.13 Cable laying and wiring of GT	2021/3/20	2021/5/20	0%
228	1.4.3.6.14 Cable laying and wiring of ST	2021/6/2	2021/9/1	0%
229	1.4.3.6.15 HRSG cable laying and wiring	2021/5/10	2021/7/10	0%
230	1.4.3.6.16 Installation of 230kV communication equipment	2020/10/31	2020/12/30	0%
231	1.4.3.6.17 Installation of 400kV communication equipment	2021/3/24	2021/5/25	0%
232	1.4.3.6.18 Installation of plant communication equipment	2021/4/8	2021/7/26	0%
233	1.4.3.7 Thermal Control System	2020/12/5	2021/10/15	0%
234	1.4.3.7.1 Installation of DCS equipment for control building	2020/12/5	2020/12/30	0%
235	1.4.3.7.2 Installation of instrument,control equipment and pipeline for auxiliary workshop	2021/1/27	2021/6/25	0%
236	1.4.3.7.3 Thermal control cable Laying and wiring in auxiliary workshop	2021/3/10	2021/7/15	0%



Ashuganj 400MW Combined Cycle Power Plant (East)

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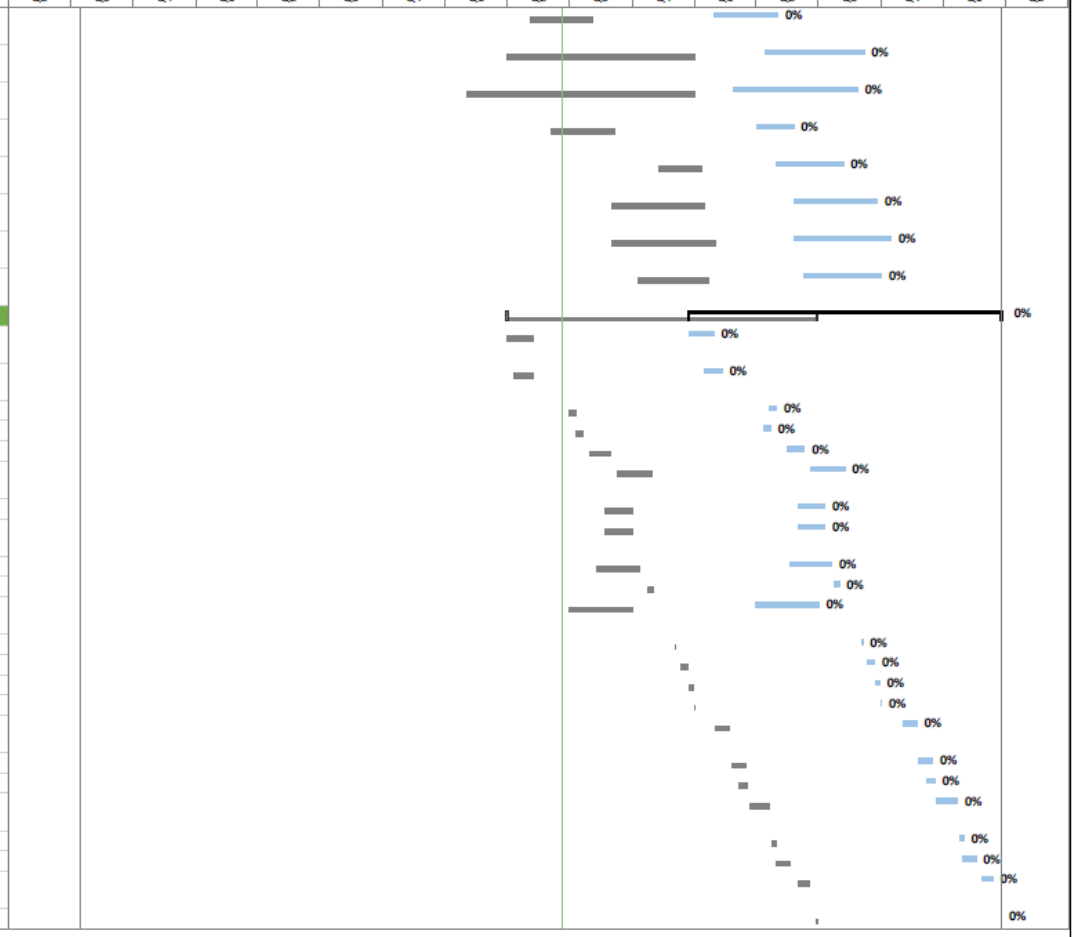
Ashuganj East 400MW CCPP project

China National Corporation For Overseas Economic Cooperation

	Task Name	Start Time	Finish Time	Percent complete
237	1.4.3.7.4 Installation of instrument,control equipment and pipeline for GT	2021/1/29	2021/5/1	0%
238	1.4.3.7.5 Installation and commissioning of CCTV	2021/4/15	2021/9/5	0%
239	1.4.3.7.6 Installation and commissioning of fire alarm system	2021/2/26	2021/8/27	0%
240	1.4.3.7.7 Thermal control cable Laying and wiring for GT	2021/4/2	2021/5/25	0%
241	1.4.3.7.8 Installation of instrument,control equipment and pipeline for ST	2021/5/1	2021/8/6	0%
242	1.4.3.7.9 Installation of instrument,control equipment and pipeline for HRSG	2021/5/26	2021/9/25	0%
243	1.4.3.7.10 Installation of instrument,control equipment and pipeline for ST	2021/5/27	2021/10/15	0%
244	1.4.3.7.11 Thermal control cable Laying and wiring for HRSG	2021/6/11	2021/10/1	0%
245	1.5 Commissioning	2020/12/23	2022/3/26	0%
246	1.5.1 Commissioning of DCS control (grid auxiliary transformer electrify)	2020/12/23	2021/1/28	0%
247	1.5.2 Commissioning of grid auxiliary transformer and plant electricity system	2021/1/16	2021/2/9	0%
248	1.5.3 Commissioning of closed water system	2021/4/20	2021/4/30	0%
249	1.5.4 Commissioning of air compressor system	2021/4/12	2021/4/21	0%
250	1.5.5 Commissioning of CW system	2021/5/16	2021/6/10	0%
251	1.5.6 Commissioning of gas booster and regulating station&RMS	2021/6/20	2021/8/8	0%
252	1.5.7 Commissioning of fire system	2021/6/1	2021/7/10	0%
253	1.5.8 Commissioning of drainage water treatment system	2021/6/1	2021/7/10	0%
254	1.5.9 Commissioning of GT equipment in cold state	2021/5/20	2021/7/20	0%
255	1.5.10 Generator charging hydrogen	2021/7/25	2021/7/31	0%
256	1.5.11 Start-up transformer electrify and comissioning of plant electricity system	2021/4/1	2021/7/1	0%
257	1.5.12 GT initial ignition	2021/9/3	2021/9/3	0%
258	1.5.13 GT ICO	2021/9/12	2021/9/21	0%
259	1.5.14 Test of GT performance	2021/9/23	2021/9/28	0%
260	1.5.15 GT TOC(PAC)	2021/10/1	2021/10/1	0%
261	1.5.16 Chemical washing and reinstatement for HRSG	2021/11/3	2021/11/22	0%
262	1.5.17 Commissioning of HRSG in cold state	2021/11/26	2021/12/15	0%
263	1.5.18 Commissioning of start-up boiler equipment	2021/12/7	2021/12/18	0%
264	1.5.19 Pipe blowing-off and system reinstatement of steam circulating	2021/12/22	2022/1/20	0%
265	1.5.20 Start-up and electric test of units	2022/1/24	2022/1/30	0%
266	1.5.21 Units synchronization,240H pilot run	2022/1/28	2022/2/16	0%
267	1.5.22 Performance test of combined cycle working condition	2022/2/26	2022/3/13	0%
268	1.5.23 Combined cycle working condition TOC(PAC	2022/3/26	2022/3/26	0%



Ashuganj 400MW Combined Cycle Power Plant (East)

baseline milestone ◆ Task actual Baseline Summary actual Summary Summary baseline

CHAPTER 2

SOCIO-ENVIRONMENTAL RESPONSIBILITIES & INSTITUTIONAL SETUP

2.0 SOCIO-ENVIRONMENTAL RESPONSIBILITIES AND INSTITUTIONAL SETUP

2.1 Socio-Environmental Responsibilities, Institutional Arrangements, and Implementation Schedule

For realization of SEMP, it is necessary to identify persons responsible for performance of impact decrease/prevention actions, and those responsible for control over the given actions and to define their role at all stages of the project implementation.

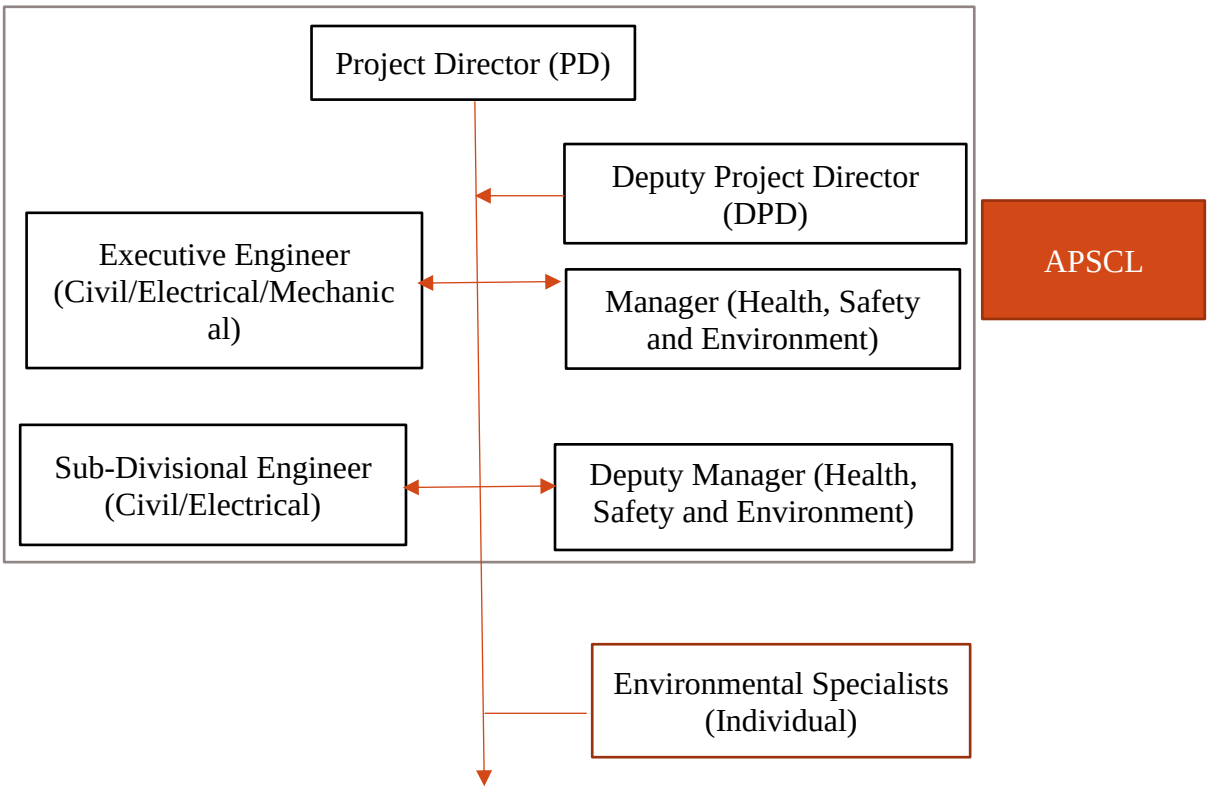
During construction, APSCL, in collaboration with EPC Contractor and any sub-contractors, will establish, maintain, and strengthen as necessary an organisational structure that defines roles, responsibilities and authority to implement the SEMP.

Key SEMP responsibilities are defined and will be communicated to the relevant personnel and to the rest of ASPCL as well as CNTIC and sub-contractors. Sufficient management sponsorship and human and financial resources will be provided on an on-going basis to achieve effective and continuous SEMP performance.

Management of environmental and social risks and impacts during construction will primarily be the responsibility of the EPC Contractor through the EPC contract. During the construction phase, APSCL will review and monitor EPC Contractors performance in accordance with the SEMP.

During the construction phase, APSCL will review and monitor CNTICs (CNTIC) performance in accordance with the SEMP.

The overall Project organizational structure for the implementation of the SEMP is shown in Figure 3 and key roles for implementation and supervision of the SEMP are described in Table 2.



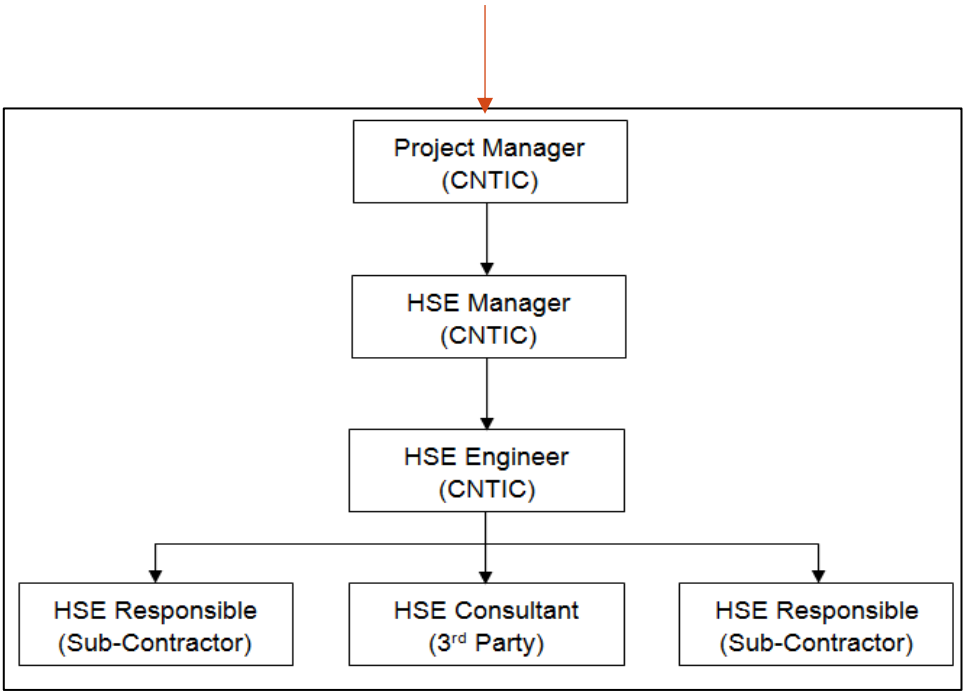


Figure-3: SEMP Organizational Structure

Table-2: Role & Responsibilities for SEMP Implementation

Role and Responsibilities	Key Staff Responsibilities
Ashuganj Power Station Company Ltd - Project Implementation Unit (PMU): ○ Overall responsibility for environmental performance of the Project during construction; ○ Decision-maker on applicable policies for the Project; ○ Oversight supervisory role during construction. ○ Review reports of the Independent Environmental Monitoring Consultant; ○ Approves changes to the SEMP, as necessary, as part of an adaptive approach to HSE and social management of the Project;	APSCL Project Director: ○ Actively promote and participate in the Project HSE and social programs. ○ Ensure that the HSE and social programs reflect the requirements of the Project in terms of resources; ○ Ensure that all legislative and company requirements are complied with; ○ Ensure that the work scope is conducted in accordance with the Project HSE rules and regulations, work practices and procedures, as detailed in this SEMP and other associated documentation; ○ Ensure that all contractors are made aware of their roles and responsibilities with regard to HSE and social management; ○ Ensure that safety is an agenda item in every contractor meeting; ○ Ensure that all contractors are evaluated throughout the duration of the Project, as to their capabilities and performance; and

Role and Responsibilities	Key Staff Responsibilities
○ Responsible for working with stakeholders as required; ○ Establishing an HSE department to implement the SEMP requirements; ○ Management, implementation, monitoring and compliance of the SEMP, sub-contractors; ○ Review of SEMP performance and implementation of correction actions, or stop work procedures, in the event of breaches of SEMP conditions, that may lead to serious impacts on local communities, or affect the reputation of the Project; ○ Ensure effective communication and dissemination of the content and requirements of the SEMP to contractors and sub-contractors; ○ Assisting the contractor with implementation of SEMP; ○ Ensuring compliance to all Project social commitments, ○ Report on environmental performance to DOE, the ADB, and other regulators as required; ○ Prepare environmental reports summarizing project activities, as required; ○ Representing the Project at community meetings ○ Ensuring effective community liaison and fulfilling commitments to	○ Ensure implementation of HSE and social audits and recommendations for addressing non-compliances/corrective actions. <u>APSCL HSE Department:</u> ○ Manage, review and develop the HSE program to ensure that it fulfills Project requirements, including measures observed in this SEMP, and monitoring the implementation of the SEMP; ○ Coordinate and evaluate the effectiveness of all program elements; ○ Liaison with related government bodies as necessary; ○ Manage the Project HSE and social team and supervise them to ensure that all areas of the project are given the required level of safety support and attention; ○ Ensure proper housekeeping and waste disposal in accordance with company requirements and regulations; ○ Ensure that the respective control areas are given the required level of safety support and attention; ○ Ensure that all HSE and social reports/findings of any unsafe conditions/practices are brought to attention and those are immediately corrected, and coordinate accident/incident investigations and report to the Project Director; and ○ Manage HSE and social audits and report the results to the Project Director.

Role and Responsibilities	Key Staff Responsibilities
facilitate public consultation throughout construction.	
CNTIC ○ Implementation of the SEMP; ○ Prepare and maintain records and all required reporting data as stipulated by the SEMP, for submission to APSCL. ○ Ensure that all construction personnel and sub-contractors are informed of the intent of the SEMP and are made aware of the required measures for environmental and social compliance and performance.	CNTIC HSE Department: ○ Actively promote and implement all Project HSE and social plans related with the work they are preforming; ○ Make sure that all activities under his/her responsibility shall follow all safety regulation/requirements, coordinating with APSCL's HSE Manager; ○ Ensure that committed resources (personnel, material, and equipment) used are consistent with achieving the objectives and requirements of Project HSE and social plans. Construction Workers ○ Familiarize themselves with the concept of the Project HSE and social rules and regulations; ○ Work in accordance with Project HSE procedures, safe work practices, and method statements, risk assessments, permits to work and any other instructions that apply to their works; ○ Use only tools/equipment and materials, which have been approved for use, and employ them only for the purpose for which they were designed; ○ Take an active part in the protection of themselves, fellow workers, property and the environment from accidental losses; ○ Immediately report to his respective supervisor or HSE officer/inspector if any potential hazards (relates to unsafe conditions and/or unsafe acts), which could lead to an accident, are found; ○ Report promptly to immediate supervisor and HSE officer/inspector if any incidents/near misses as well as injuries, regardless how minor; and ○ Shall attend Project safety training and drills programs as required.
Supervising / Owners Engineer (OE): ○ Assistance in preparation and implementation of the SEMP;	OE Environmental and Social Safeguard Consultants: ○ An OE local consultant and international consultant will report to APSCL and the ADB on compliance with the HSE and social commitments in the SEMP.

Role and Responsibilities	Key Staff Responsibilities
○ Reporting any incidents or non-compliance with the SEMP to APSCL.	○ Preparation and implementation of the Environmental Supervision Plan during construction. ○ Preparation and implementation of the Environmental Monitoring Plan during construction ○ Supervision of contractor performance on implementation of the Construction and Work Camp Management Plan. ○ Reporting any incidents or non-compliance with the SEMP to the PMU. ○ Ensuring adequate training and education of all staff involved in environmental supervision. ○ Making recommendations to the APSCL (PMU) regarding SEMP performance as part of an overall commitment to continuous improvement.

2.2 Grievance Redressed Status

A grievance redress mechanism (GRM) provides an opportunity for project affected persons to settle their complaints and grievances amicably. The established grievances redress procedures and mechanism ensures that project affected persons are provided with the appropriate compensations and that all administrative measures are in line with the law. It also allows project affected persons not to lose time and resources from going through lengthy administrative and legal procedures. During the operational phase of the project, the complaints that may be anticipated are mostly related to noise & vibration of the engines. However, unforeseen issues may occur. To settle such issues effectively, an effective and transparent channel for lodging complaints and grievances is established. For ensuring proper implementation of GRM, APSCL has set-up a grievance redress committee (GRC) that will address any complaints during operational period of this project. But no grievance is recorded.

The representation in the committee makes project affected persons to have trust and build confidence in the system. The grievance redress committee reports its plan and activities to the Implementation committee. The following list presents members of the committee a figure-4 represents the step wise procedure of GRM.

Table-3: Members of the Committee of Grievance Redress (GRC)

Sl No	Designation
1.	Project Director (Chief Engineer), Ashuganj 400 MW East Project
2.	Chief Engineer (O&M), APSCL.
3.	Manager (HRM), APSCL.
4.	Manager (HS&E), APSCL.
5.	Deputy Manager (Security & Discipline), APSCL.
6.	Assistant Manager (Security & Discipline), APSCL.
7.	Chairman, Ashuganj Union Parishad, Member.

GRC will maintain a Complaints Database, which will contain all the information on complaints or grievances received from the communities or other stakeholders. This would include: the type of complaint, location, time, actions to address these complaints, and outcome.

The procedures to be followed and adopted by the grievance redress should be transparent and simple to understand or uniform process for registering complaints provide project affected persons with free access to the procedures. The response time between activating the procedure and reaching a resolution should be as short as possible. An effective monitoring system will inform project management about the frequency and nature of grievances. GRC will arrange half yearly meetings where the activities and the outcomes/measures taken according to the Complaints Database are to be monitored and reviewed to ensure the required transparency. In addition to the above, if there are any grievances related to environmental management issues in the project area, the GRC will record these grievances and suggestions and pass it on to the relevant personnel for necessary action and follow-up.

GRC will be responsible to response for the grievances within a time limit. The initial movement to identify the causes should be taken within 48 hours. The GRC will not take more than two weeks to take the final initiative.

In case a dispute is not resolved by arbitrational tribunal, then if any of the Party disagrees, the aggrieved party has the right to appeal to the ordinary courts of law. However, the preferred option of dispute settlement ought to be the option of settling the dispute amicably because recourse to courts may take a very long-time even years before a final decision is made and therefore, should not be the preferred option for both parties.

Beside this as per Labor Law 2018 and Clause no 81 of Labor Rules 2015, APSCL has an active ‘Safety Committee’ to address and solve the internal grievance regarding Health, Safety and Environmental issues. APSCL has established and published ‘Citizen’s Charter’ System to address any grievance related to it and to rectify the problem rapidly by proper system. The web link of this is**:** https://apscl.portal.gov.bd/site/view/citizen_charter/-.

APSCL has also online Grievance Redress System. The useful links of these are: http://apscl.gov.bd/site/page/929f626c-752c-4724-9680-845d0414883f/Process-Map **&** http://www.grs.gov.bd/ .

If anybody is affected by this 400 MW CCPP (East) project activities or any other power generating unit of APSCL can give complain here.

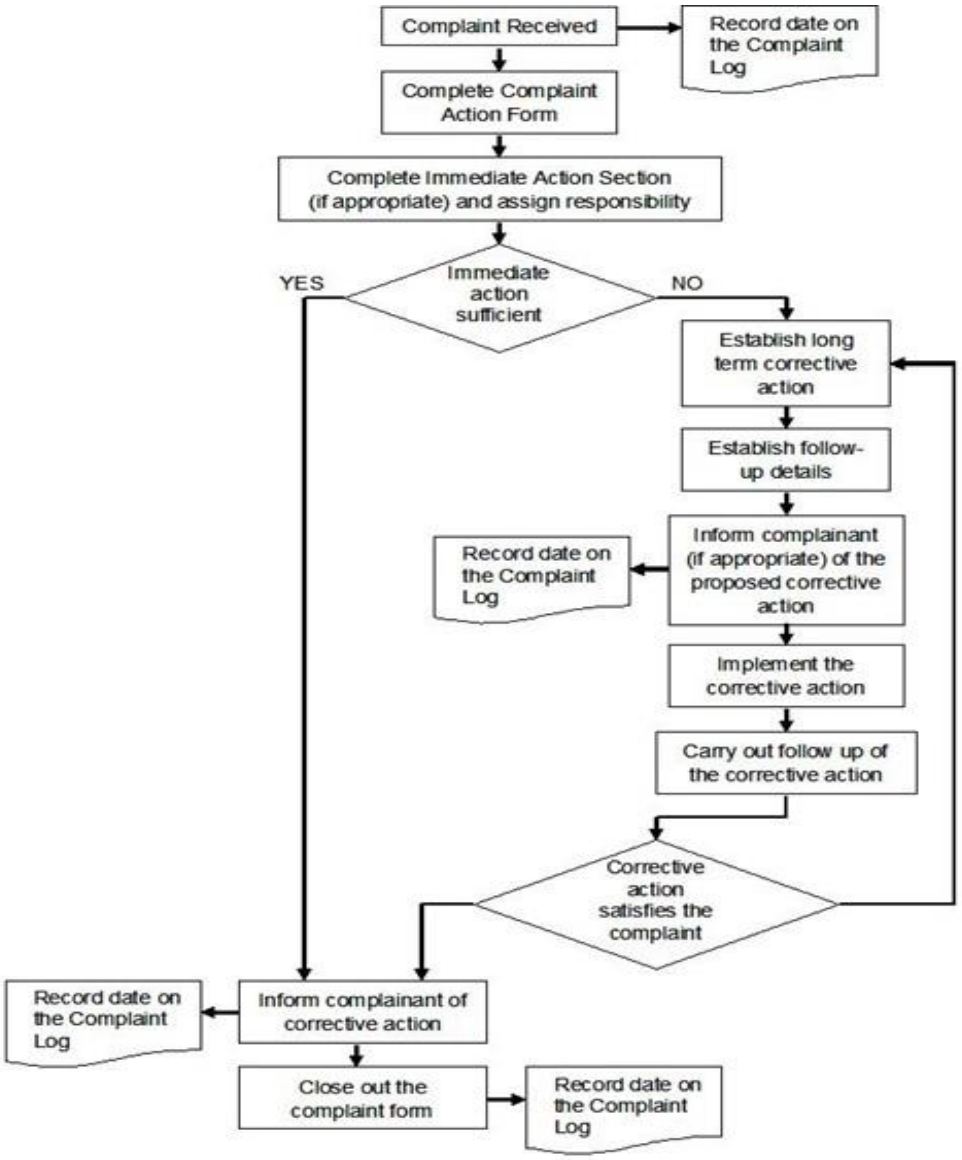


Figure- 4 : Flowchart of Complain/Grievance Procedure

CHAPTER 3

COMPLIANCE OF ADB LOAN COVENANTS

3.0 COMPLIANCE OF SOCIAL SAFEGUARD COVENANTS FROM THE ADB LOAN AGREEMENT

3.0.1 Covenants from the ADB Loan Agreement

Covenants	Reference	Compliance status
Environment		
The borrower shall ensure, or cause APSCL to ensure, that the preparation, design, construction implementation, operation and decommissioning of the project and all project facilities comply with (a) All applicable laws and regulations of the Borrower relating to the environment, health, and safety; (b) The environmental safeguards; (c)The EARF; and (d) All measures and requirement set forth in the respective EIA, IEE and EMP, and any corrective or preventive actions set forth in a safeguards monitoring report	LA, Schedule 5, Para 2	The environmental monitoring has been carried out in all three phase i,e. pre-construction, during construction and post-construction phase or operation phase
Land Acquisition and Involuntary Resettlement The borrower shall ensure, or cause APSCL to ensure, that all land and all rights-of-way required for the project, and all project facilities are made available to the works contractor in accordance with the schedule agrees 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 borrower relating to land acquisition and involuntary resettlement; (b)the involuntary resettlement safeguards; (c)the RF; and (d) All measures and requirement set forth in the respective RP, and any corrective or preventive actions set forth in a safeguards monitoring report.	LA, Schedule 5, Para 3	In the case of APSCL, this type of issues does not arise due to the project location. The project location is inside the premises of APSCL own land. So, There is no requirements of Land Acquisition and Involuntary Resettlement
Safeguards – Related provisions in bidding		

documents and works contracts		
The borrower shall ensure, or cause each projects executing agency to ensure, that all bidding documents and contracts for works contain provisions that require the contractor to: (a) Comply with the measures and requirements relevant to the contractor set forth in the EIA, IEE, the EMP, the RP and any small ethnic community peoples plan(to the extent they concern impacts on affected people during construction), and any corrective or preventive actions set out 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 small ethnic community people risks or impacts that arise during construction, implementation or operation of the project that were not considered in the EIA, the IEE, the EMP, the RP or any small ethnic community peoples plan; (d) Adequately record the condition of roads, agricultural and other infrastructure prior to starting to transport materials and construction; (e) Fully reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition upon the completion of construction.	LA, Schedule 5, Para 7	The safeguards- related provisions in bidding documents and work contracts have been followed strictly and update time to time for further requirements.
Safeguards- Monitoring and Reporting		
The borrower shall do the following or shall cause APSCL to do the following: (a) Submit semiannual safeguards monitoring reports to ADB and disclose relevant information from such reports to affected persons promptly upon submission; (b) If any unanticipated environmental and or social risks and impacts arise during construction, implementation or operation of the project that were not considered in	LA, Schedule 5, Para 7	The Safeguards monitoring has been carried out in all three phase i,e. pre-construction, during construction and post-construction phase or operation phase

the EIA, the IEE, the EMP or the RP, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan; (c) No later than the mobilization of the turnkey contractor for APSCL,s power plant, engage qualified and experienced external experts or qualified no-governmental organizations under a selection process and terms of reference acceptable to ADB, to verify information produced through the project monitoring process, and facilitated the carrying out of any verification by such external experts; and (d) Report any actual or potential breach of compliance with the measures and requirements set forth in the EMP or the RP promptly after becoming aware of the breach.		
Labor standards		
The borrower shall ensure that all works contract documents to be prepared under the project incorporate provisions and budget to the effect that contractors (a) Comply with all applicable labor laws and related international treaty obligations of the borrower and do not employ child labor as defined under Bangladesh law; (b) Provide safe working conditions for male and female workers; (c) Carry out HIV/ AIDS and human trafficking prevention and awareness campaigns in the campsites and corridors of influence; (d) Engage women worker as wage laborers depending on their skill; and (e) Provide equal wages for equal work between men and women	LA, Schedule 5, Para 10	The labor standards have been followed strictly.

As per Asian Development Bank, Aide Memoire of Midterm Review Mission Loan 3350-BAN: Power System Expansion and Efficiency Improvement investment Program, Tranche-3

(19-30 April 2020), for successful implementation of the Project in time, the Mission advised to take immediate steps on the agreed time-bound actions as listed below(Annex-II):

Table- 4: Agreed time-bound action plans

Sl. No.	Action	Responsible Agency	Deadline	Status
1	Medical Facilities with immediate appointment of qualified doctor.	APSCL	30 June 2020	Engagement of medical doctor under process.
2	Translate all safety signage in Bangla	APSCL	15 June 2020	Bangla sign is in process but at present no Bangladeshi labour is working at this premises until the effect of corona virus declined.
3	Cumulative environmental impact analysis by APSCL for all of its power plant	APSCL	30 July 2020	We have done environmental effect of Ashuganj East Project which is our extreme target but cumulative one under our consideration, delayed due to COVID-19 pandemic situation.
4	Submit improved EMR with quality acceptable to ADB	APSCL	30 June 2020	Already done it.

CHAPTER 4

SAFEGUARD MONITORING RESULTS AND UNANTICIPATED IMPACTS

4.0 SAFEGUARD MONITORING RESULTS AND UNANTICIPATED IMPACTS

4.1 Visual Monitoring and Observations

Table-5: Implementation of Environmental Monitoring Plan during Construction Phase of the Project (Visual)

SI No.	Issue	Key aspects	Monitoring Frequency	[1]Compliance status			Remarks
				C	PC	NC	
1.	Traffic volume	Incoming & outgoing traffic, traffic movement records	**Monthly**	√			
2.	Site Security	Proper fencing, isolation of site from general access, marked passage for workers and visitors	**Monthly**	√			
3.	Personal Protective Equipment	Ensure every single person involved in the construction activity wear proper PPE	**Monthly**	√			
4.	Incident record & reporting	Documented record of all incident, accident, near misses etc. and its remedial process.	**Monthly**	√			
5.	Solid waste	Quantity of solid waste, segregation, and disposal process	**Monthly**		√		Need to improvement
6.	Oily waste generation & disposal system	Quantity of oily waste, storage and disposal process	**Monthly**		√		Need to improvement
7.	Worker's health	Monitoring process of worker's health	**Monthly**	√			
8.	Complain from neighbours	Any significant complain from neighbours and its remedial procedure	**Monthly**	√			
9.	Safety orientation & training of workers	Frequency of training & orientation of workers for safety	**Monthly**	√			
10.	Sanitation & drinking water facility to workers	Availability of safe drinking water and sanitation to the workers	**Monthly**	√			
11.	Site Drainage	Maintaining proper drainage	**Monthly**	√			

[1] C- Compliance, PC- Partially Compliance, NC- Non-Compliance

4.2 Traffic Volume

The Project is under construction phase now. Construction activity has already started. The daily traffic details on day to day basis are being monitored and recorded in the registered book

properly. Total 445 Numbers of vehicles enter the site in up to the month of June-2020. It is suggested that the detail traffic management measures shall include:

- ✓ Recording details of regular inspections/audits for traffic management measures of cargoes/packages weighing more than 20Tons and long-body trailers from port to project site.
- ✓ Recording the delays and other disruptions resulting from slow-moving heavy-lift and/or oversized cargoes.
- ✓ Reporting of any incident/accident occurs during transportation of goods.

Table-6: Total Number of Vehicles Based on their Categories

Name of vehicle	January, 20	February,20	March,20	June,20
	Number of Vehicle	Number of Vehicle	Number of Vehicle	Number of Vehicle
Truck	49	48	18	48
Tailor (load>20T)	12	12	10	12
Microbus	54	33	14	38
Motorcycles, Cars	23	27	0	47
Total	138	120	42	145

4.3 Site Security

During site visit on June 2019, CNTIC-CCOEC Consortium have already constructed of site boundary fencing to isolate the project site. Marked passages for workers and visitors have not yet been done, necessary action to be taken to accomplish the same. Elevated platforms, walkways and ramps will be installed and equipped with handrails, toe-plates, and non-slip surfaces. Safe walkway will be marked by colour in respective area such as Turbine hall, store etc. Proper sign boards and pictorial safety are given mentioning with caution for the area of petroleum, sprit & highly flammable materials & general awareness prohibiting smoking inside the power plant.

With the incorporation of the security system at the main entry gate, overall site security system will come into a good shape and eventually will be under proper control.

Figure-5: Present fencing conditions of the Project Site

Figure-6: Sign boards and pictorial safety at the Project Site

4.4 Personal Protective Equipment

The working personnel involved in the construction activities has to be under the safeguard of PPE properly. Figure-20 shows that, the workers were found to involve in construction works of pile.

The workers involved in with these works were found with PPE, such as Safety Jacket, Safety Shoes, Helmet and Hand Gloves etc.

Table- 7: List of Personal Protective Equipment Used in Project Site

SI No.	Type of work	Personal Protective Equipment used in site
1	Excavation	Safety Jacket, Safety Shoes, Helmet, Respiratory protection and Hand Gloves.
2	Construction	Safety Jacket, Safety Shoes, Helmet, Respiratory protection and Hand Gloves.
3	Welding	Helmet, Safety shoes, Eye face protection, protective clothing, Hand Gloves, Ear defence, Respiratory protection etc.
4	Scaffolding	Safety vests, Headwear, Safety footwear, Eye face protection, Slush Boots, Safety belt, Rain Suits, Hand protection.

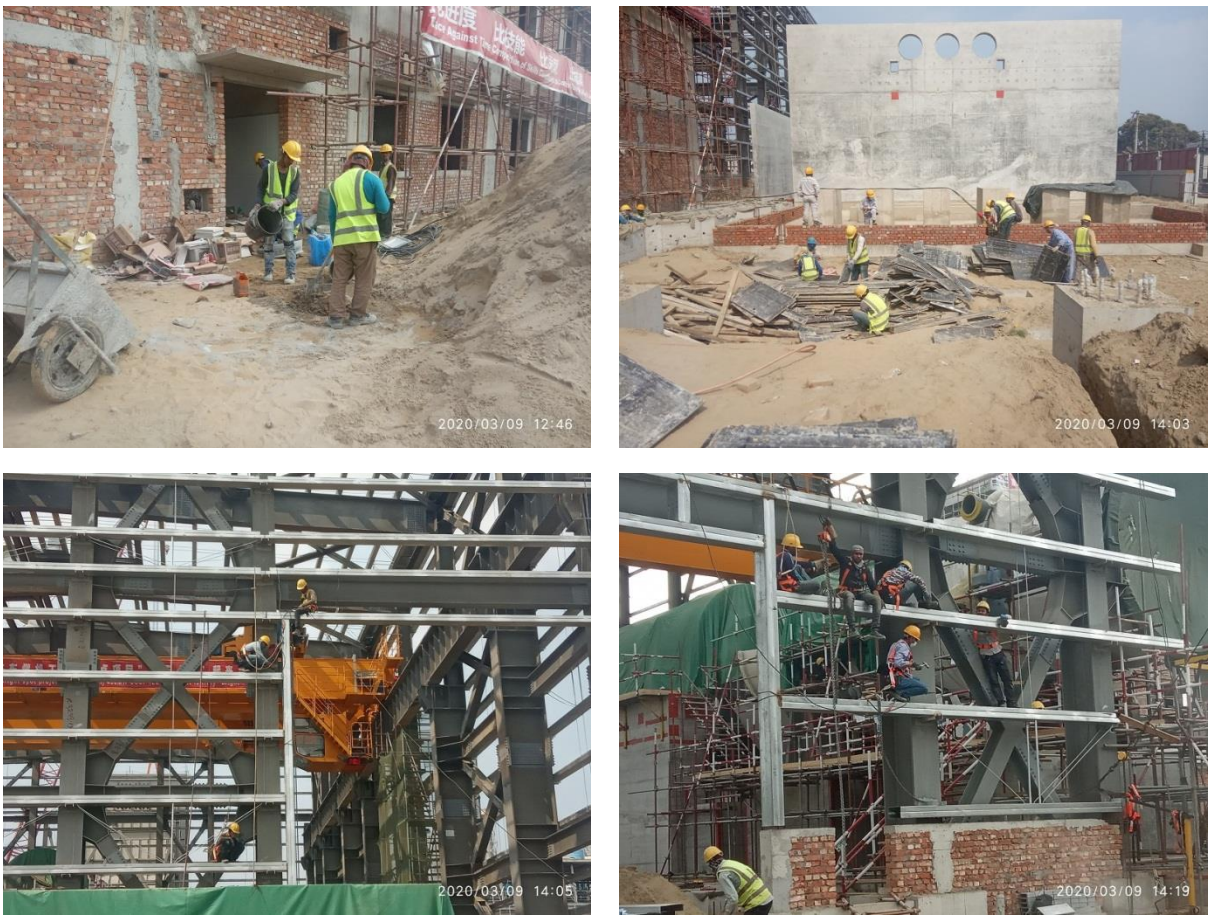


Figure -7: At the Construction Works, Workers were Found with Proper Apron, Helmet, and Hand Gloves Etc.

4.5 Incident Record & Reporting

Coordination of CNTIC-CCOEC Consortium along with APSCL, HSE division has been developed to monitor any incident, accident, near misses recording and reporting system with proper format. It was observed that the Incident Record & Reporting are being properly monitored and recorded in the register book. No accident record was found in the register book up to the month of June. CNTIC-CCOEC Consortium assured that no Incident occurred during this time. If any incidental issue arises, immediately it must be reported & recorded properly in the prescribed format. Remedial measures are to be taken for such incident and accident.

4.6 Solid Waste

Solid wastes are generated from construction works (construction waste) and workers activities (kitchen waste, paper waste) at the project site. Solid waste logbook for keeping record of this wastes in this plant are being properly maintained. It is necessary to erect all kinds of relevant signs regarding waste minimization in respective places of the project and main gate of APSCL. Transfer notes for all solid waste to be transported outside the project site is recorded.

Table- 8: Waste Inventory Log of CNTIC-CCOEC Consortium

SI	Wastage Name	Wastage Classification	Wastage Type	Source of wastage	Wastage storage area	Storage quantity (kg)	Delivery quantity (kg)	Agreement	Remarks
1	Plastic Pipe	Hazardous	Solid	Construction Site	On site	3.1	3.1	Ok	Ok
2	Brick	Non-Hazardous	Solid	Construction Site	On site	15.7	15.7	Ok	Ok
3	Rubbish	Non-Hazardous	Solid	Construction Site	On site	3.0	3.0	Ok	Ok
4	Scrap	Hazardous	Solid	Construction Site	On site	2.6	2.6	Ok	Ok
5	Cable	Non-Hazardous	Solid	Construction Site	On site	1.2	1.2	Ok	Ok
6	Aggregate	Non-Hazardous	Solid	Construction Site	On site	13.3	13.3	Ok	Ok

Solid Waste Management Plan

Step-01: Collection System

All solid wastes including construction wastes, waste generated by workers activities (kitchen waste, paper waste) and other waste will be accumulated on site after collecting from the source of generation.

Step-02: Segregation

There are various types of solid wastes; these will be segregated in the project site according to their natures as described below.

Construction waste: Electrical wiring, rebar, wood, plaster, scrap metal, cement, and bricks.

Organic waste: kitchen waste, vegetables, flowers, leaves, fruits.

Toxic waste: old medicines, paints, chemicals, bulbs, spray cans, fertilizer and pesticide containers, batteries, shoe polish.

Recyclable waste: paper, glass, metals, plastics.

Step-03: Transportation

After segregation of solid waste from the project site, proper solid waste log is maintained and transported to disposal point by trucks.

Step- 04: Disposal System

From the transported solid waste, the recyclable inorganic solid waste will be recycled and biodegradable organic solid waste will be deposited in open space and disposed with municipal solid waste and remaining non-biodegradable waste will be sold to secondary vendors. The disposal location has been shown in **figure-8**.

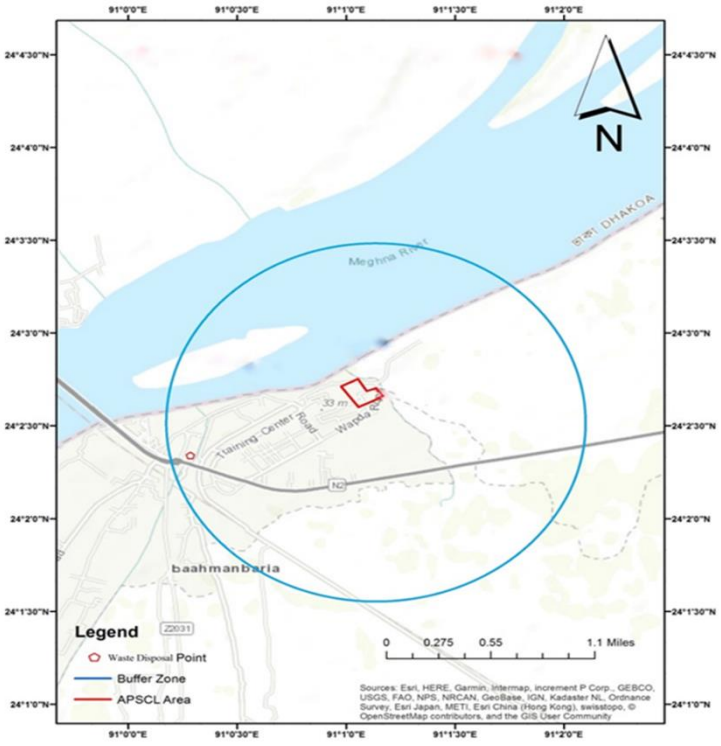


Figure-8: Solid Waste Disposal Location

4.7 Worker's Health

The CNTIC-CCOEC consortium will provide all kinds of treatment facilities and pay compensation according to Bangladesh Labor Law 2018. Worker's health is checked properly

once in a year. Besides, an understanding with a local hospital for the emergency incident related to the worker's health of the plant and CNTIC-CCOEC Consortium has been established such health monitoring system of the workers shortly. In addition, necessary steps are taken for arrangement of ambulance service in the plant area to support any emergency medical aid and shifting to the hospital/medical centre. Necessary first aid facilities are also available at site.

Figure-9: Photograph of Ambulance and first aid box

4.8 Grievance Redress Mechanism

CNTIC-CCOEC consortium assured that they already established mechanism for grievance redress. Its suggested that complain from neighbours must be duly recorded & adequate measures should be taken accordingly. Though the project site is within the APSCL boundary, the North West side of the project site is near to some houses of neighbors. CNTIC-CCOEC Consortium has set up a suggestion box in front of the gates to facilitate the neighbours to raise complains and take immediate measure to resolve the complaints.

Figure-10: Photograph of Suggestion Box

4.9 Safety Orientation & Training of Workers

Training is essential to maintain the employees' health and safety. Both theoretical and practical training will be conducted for the employees on the hazards, precautions, and procedures for the safe storage, handling, and use of all potentially harmful materials. Safety orientation & training for the workers must be provided to all working personnel during the fresh enrolment / employment. Routine safety training on regular basis must be maintained. It is suggested that CNTIC-CCOEC Consortium will arrange routine safety training at definite time interval for the workers throughout the construction phase of the project. In addition, Training procedure will incorporate information from the Material Safety Data Sheets (MSDS) for potentially harmful materials.

Figure -11: **Photograph of training for fresh enrolment employee and safety meeting**

Figure-12: Toolbox meeting for workers

4.10 Sanitation & Drinking Water Facility to Workers

Ground water is being supplied through the arrangement of piping network in the construction site and this water is available for the workers for the washing and toilet facilities. Besides, CNTIC-CCOEC Consortium Management supplies drinking water Jar for drinking purpose of the workers. Robust drinking water purification system with reverse osmosis or UV and hot and cool water system will be installed at various locations in adequate number at the plant site for operational phase. Adequate toilets for male and female workers have already been constructed.

Figure -13: Pure Drinking Water & Sanitation facility to workers

4.11 Site Drainage

In the Construction site, proper drainage system has to be developed for outer/inter drainage in the project site. At present, inside drainage has not yet constructed. As pilling work is going on, rainy water is stored in a pilling spoils water reservoir. After completion of pilling works, necessary drainage will be constructed.

Figure-14: Existing outer drainage and rainy water reservoir

4.12 Surface water drainage

The surface water drainage system manages all run off of the project site through a system of underground pipes, manholes and finally discharge into the surface water body subject to ensuring the quality standard of Bangladesh and ADB guidelines. To some extent, collected rainwater is reused to spray for dust suppression in sunny day.

4.13 Dust Control

There is dust around the project site due to on-going construction work. To control the dust nuisance during dry weather, CNTIC-CCOEC Consortium sprays water at prescribed interval regularly.

Figure -15: Water is spraying for dust control

4.14 Monthly HS&E Management

4.14.1 Safety Management

- ✓ Performing regular toolbox meeting for all of the workers.
- ✓ Performing site visit in the premises regularly.
- ✓ Checking and monitoring the Proper Personal Protective Equipment (PPE) of the workers in the premises.
- ✓ Performing safety report weekly and monthly.
- ✓ Checking the performance equipment that is being used in the premises.
- ✓ Checking adequate intensity of light, ventilation in the workplace.
- ✓ Checking the workplace pathways okay or not.

4.14.2 Health Management

- ✓ Checking the hygiene of the workplace as well as worker's health.
- ✓ Ensure PPE for all of the workers in the workplace.
- ✓ Inspection area tidy, clean and well organized.
- ✓ Checking the proper drinking water supply to the workers.
- ✓ First Aid Box, Ambulance are to be available at the project site and Doctor are available on project site to meet up emergency occurrences.

4.14.3 Environmental Management

- ✓ Checking the workplace for dust free.
- ✓ Checking the workplace air quality.
- ✓ Checking the workplace free from environmental pollution.
- ✓ Checking the workplace that is not creating pollution that is harmful for the environment.
- ✓ Installing fencing at construction site for dust control.
- ✓ Installing water pipeline for proper housekeeping and dust control.

4.15 WORKSHOP AND TRAINING MEETING AND DISCUSSION

At present an environmental team headed by Md. Atiqur Rahman, Manager (Health, Safety & Environment of APSCL) looking after an overall supervising the monitoring of 400 MW CCPP East Project environmental issues. The consultant conducted a training programmed on environmental issues for APSCL personnel and EPC contractors.
A training program for capacity building program of APSCL personnel and EPC contractors will be arranged upon the availability of requiring manpower. There will be environmental meeting performed in every month and will be discussed the overall performance of the environmental issues of under construction power plant. Beside this Mock drill on Fire and Earthquake, Electric shock, Acid and chemical spillages are continuing regularly as per set schedule in the power plant.
Various training related to HSE usually conducted in this time period. The main topic of these training is headed by waste management, good housekeeping, induction, environmental issues, PPE and so on.

Some meetings have conducted in this time frame among EPC contractor, APSCL, Subcontractors regarding emergency cases, PPE, good housekeeping and so on. Also, some meetings regarding HSE monitoring have done between the consultants of APSCL and HSE representative of EPC contractor.

4.15.1 Audit and Visit

Engr. Khaled Mahmud, Chairman of Ashuganj Power Station Company Ltd. (APSCL) has visited the project site in the date of 14th February 2020 to inaugurate the Circulating Water Pump house sinking works. In this visit he mentioned some issues regarding environmental safety and as well as health safety.

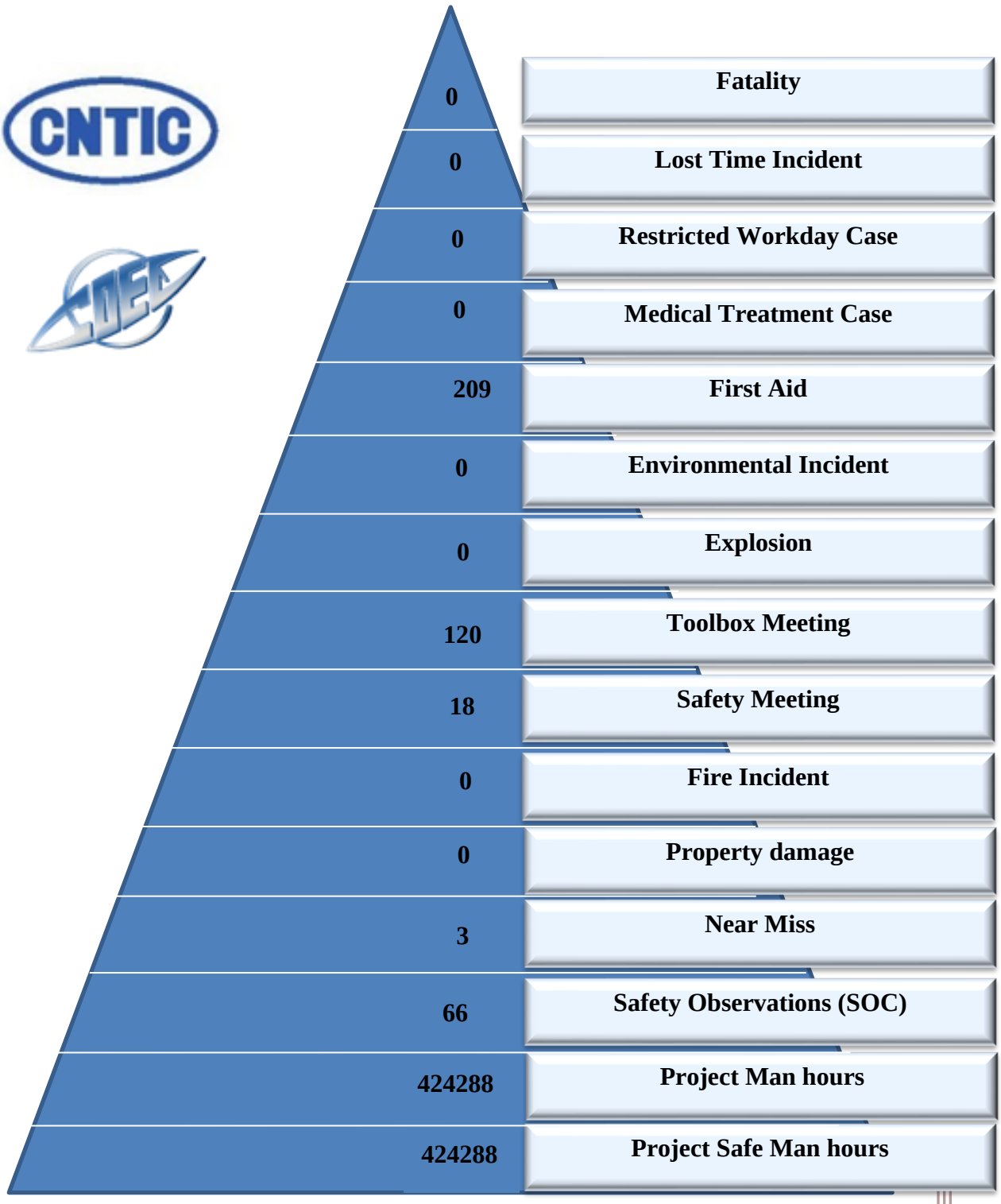
On 15th February 2020, Secretary of Power Division Dr. Sultan Ahmed visited the project site. He discussed regarding the improvement of Fire protection. He also mentioned about safety sign, environmental parameter monitoring, waste management. Few pictures have attached in the Annex-I.

4.16 Safety Assurance of the Project Site

4.16.1 Personal Safety Equipment (PSE):

Use of proper safety materials is mandatory for all at the project site. Workers use appropriate personal protective equipment, such as safety boots, helmet, safety jacket, safety belt, safety harness, gloves, protective clothing, goggles, grinding shield, welding shield, anti-dust mask, anti-gas mask and ear protection etc. Daily toolbox meeting before starting of work is a mandatory practice at the project site. So long as safety does not suffer due to this action. There is no fatality and another casualty (Zero accident) and detail of safety issue are described in the following HSE Statistics chart.

HSE STATISTICS



4.16.2 OTHERS

4.16.2.1 Weather condition

The weather condition during the ambient air quality and noise monitoring was cold and partly sunny during the sampling. Wind direction was found calm. Hence there is no impact on monitoring due to weather condition.

4.16.2.2 Other factors which affect the monitoring results

Air monitoring: Factors which affect the air monitoring results including:

- Topography
- Congested Space
- Physical and chemical properties of pollutants
- Air Pressure
- Air Turbulence

Water monitoring: Factors which affect the water monitoring results including:

- Soil erosion
- Waste discharge
- Surface runoff
- Large numbers of bottom feeders (such as carp), which stir up bottom sediments
- Excessive algal growth.

Noise Monitoring: Factors which affect the noise monitoring results including:

- Type of source (point or line)
- Distance from source
- Atmospheric absorption
- Obstacles such as barriers and buildings
- Ground absorption
- Reflections
- Humidity

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.0 CONCLUSION AND RECOMMENDATION

The social safeguard monitoring report consists of 9th Semiannually social monitoring reporting based on identified parameters in ESIA during construction phase. But till now no grievance is recorded for the project construction activities. There is no land acquisition and resettlement issue for this project because it is establishing inside the APSCL's existing plant premises replacing old one combined cycle power plant. Development of the site for this project has no impact on livelihoods or income of any households or people. No issues are triggered under ADB safeguard policy and no population will be impacted by the project at this site. So, no negative impact was found on the socio-environment due to this project. During construction activities all the mitigation measures will be taken following ADB Environmental Safeguard Policy 2009, IFC/World Bank Thermal Power Plant Guideline 2008 and 2017 and DoE, Bangladesh guideline and suggestive and recommended measures in the EIA.

During the Visual monitoring on Traffic Volume, Personal Protective Equipment, Incident Record & Reporting, Solid Waste, Oily Waste Generation & Disposal System, Worker's Health, Safety Orientation & Training of Workers, Sanitation & Drinking Water facility to workers, Site Drainage all are found in progress for January- June, 2020. Most of the records are being maintained in the Project site. However, it was assured by CNTIC-CCOEC Consortium that they will develop remaining required system as appropriate prior to start operation activity

Supply of pure mineral drinking water is ensured for all in the plant area by enough high-quality Drinking water purifier & Dispenser at suitable locations that are visible to all.

Housekeeping is also in good condition at the plant site. All solid, liquid, and hazardous waste are disposed of the designated container at the plant site. Most of the solid wastes are disposed of by landfill. The usable solid wastes are handed over to proper party for recycling.

This plant is constructed by replacing old inefficient Unit-3 plant (150 MW) that is now generating in total of 129 MW and emits 17,78,010 ton of CO_2 per year. But when 400 MW CCPP (East) plant will come in operation the Unit-3 will be closed and this 400 MW CCPP (East) will emit only 10,23,860 ton of CO_2 per year at full load. So, compared to that old inefficient power plant unit, this new 400 MW CCPP (East) plant will reduce 7,54,150 ton of CO_2 per year. That will be a significant reduction of GHG emission.

Finally, it can be concluded that the project has no detrimental impact for short period on the social environment during the period from January to June 2020.

CHAPTER:10

ANNEXURE

ANNEX-I: PHOTO APPENDIX

Fig: Photograph of Superstructure Construction of HRSG and Exhaust Stack

Fig: Photograph of Super structure construction of Main Building

Fig: Construction of Central Control Building (CCB)

Fig: Construction of Main Building

Fig: Generator Setup transformer location

Fig: Superstructure Construction of HRSG and Exhaust Stack

Fig: Water Discharge Pipe

Fig.: Power Control Centre

Fig: Construction of chemical plant

Fig: Construction of water intake plant

Fig: HRSG blown cooling water pool

Fig: Construction of oily waste water treatment station and service fire water tamk

Fig: Batching plant

Fig: Construction of RMS Building

Fig.: Air Quality Monitoring Location in front of Admin Building, APSCL.

Fig.: Air Quality Monitoring Location at PDB School

Fig.: Air Quality Monitoring Location at TSK site

Fig.: Air Quality Monitoring Location at Laydown Area

Fig. : Air Quality Monitoring Location at Govt. Haji Abdul Jalil High School

Fig.: Noise Quality Monitoring Location in front of Admin Building, APSCL

Fig.: Noise Quality Monitoring Location at PDB School

Fig.: Noise Quality Monitoring Location at TSK site

Fig.: Noise Quality Monitoring Location at Laydown area

Fig. : Noise Quality Monitoring Location at Govt. Haji Abdul Jalil High School

Fig.: River water sampling from upstream side

Fig. : River water sampling from downstream side

Fig.: River water sampling from outfall area

Fig.: **Drinking Water Sampling**
(North-West side of the project area at canteen)

Fig.: **Drinking Water Sampling**
(In front of APSCL Main Gate)

Fig.: **Drinking Water Sampling**
(Adjacent to Admin building)

Fig.: **Drinking Water Sampling**
(North-West side of the project area near Civil Dept.)

Fig: Present fencing conditions of the Project Site

Fig: Photograph of Ground Water Level Measuring

Inauguration of CW pump house by Chairman of APSCL

Inauguration of CW pump house by Chairman of APSCL

Site visit by the Secretary of Power Division

Site visit by the Secretary of Power Division

ANNEX-II: Aide Memoire

Aide Memoire of Midterm Review Mission

Loan 3350-BAN: Power System Expansion and Efficiency Improvement investment Program, Tranche-3 (19-30 April 2020)

I. INTRODUCTION

1. A Midterm Loan Review Mission[1] from the Asian Development Bank (ADB) was fielded from 19-30 April 2020 to review the implementation progress of Loan 3350-BAN: Power System Expansion and Efficiency Improvement Investment Program, Tranche-3 (the Project). Due to the COVID-19 Pandemic in Bangladesh and all over the world the Mission proposed to conduct all meeting with Executing agencies (EA) online, as explained in the mission clearance request letter. Economic Relation Division, Power Division and three EAs of this project agreed with the modality of meeting and issued no objection to the mission clearance letter. The Mission had online meeting with officials of Power Division, Ashuganj Power Station Company Ltd. (APSCL), Power Grid Company of Bangladesh Ltd. (PGCB) and Bangladesh Rural Electrification Board (BREB). The Mission reviewed the overall progress of the Project, particularly (i) component-wise implementation status and achievements considering the remaining project period (ii) status of disbursement against annual targets, (iii) compliance with loan covenants, (iv) environmental and social safeguard compliance status, and (v) implementation issues. This Aide Memoire summarizes the key discussions, findings and agreements reached during the Mission and reflects the understanding of the wrap up meeting held at the Power Division on 1 May 2020, chaired by the Secretary of Power Division. A list of persons met by the Mission is attached in Appendix 1. The contents of this Aide Memoir are subject to review and approval of Government and Management of ADB.

II. BACKGROUND

2. **Project Approval, Signing and Effectiveness.** The framework financing agreement for Power System Expansion and Efficiency Improvement Investment Program was signed between the Asian Development Bank (ADB) and the Government of Bangladesh (GoB) on 7 October 2012. Subsequently on 28 November 2012, ADB's Board of Directors approved the provision of a multi-tranche financing facility (MFF) to Bangladesh, with an aggregate facility amount of up to $700 million. Three loans have been approved under MFF as Tranche-1 (Loan 2966, 2012-2018) for $185 million; Tranche-2 (Loan 3087, 2013-2019) for $310 million; and Tranche-3 (Loan 3350,2015-2021) for $205 million (The Project). Tranche-3, ADB Loan 3350 was approved on 8 December 2015, effective on 5 January 2016 and will be closed on 30 June 2021. Ashuganj Power Station Company Ltd (APSCL), Power Grid Company Ltd (PGCB) and Bangladesh Rural Electrification Board (BREB) are the Executing Agencies for this Loan.

2. Impact and Outcome. The expected impact of Tranche-3 is better access to reliable electricity supply in Bangladesh and the outcome is increased efficiency and capacity of power system in Bangladesh.

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[1] The mission comprised of Ms. Nazmun Nahar, Senior Project Officer (Energy)/ Mission leader; Mr. Tika Limbu, Senior Portfolio Management Specialist; Ms. Farhat Jahan Chowdhury, Senior Project Officer (Environment); Ms. Kazi Akhmila, Associate Project Officer (Resettlement); Md. Shohidul Alam, Financial Control Analyst; Ms. Nadia Tasnim, Associate Project Analyst; Md. Minhajur Rahman Khan, Associate Safeguard Analyst, and Ms. Lino Prue, Operations Assistant

recommends improving the EMR by incorporating data on (i) occupation health and safety (ii) environmental quality data, (iii) corrective action plan in case of exceedance, (iv) compensatory tree plantation, (v) compliance status of EMP, etc. The mission also recommends that (i) an assessment of underground cable trenching to identify the possible environmental impact must be completed by adopting appropriate mitigation measures, if necessary, and (ii) prepare a list of trees were cut due to the project and implement compensatory tree plantation including landscaping at the substation premise.

28. **Social safeguards.** The project has been categorized B for involuntary resettlement and C for impact on Indigenous People (IP). One combined Resettlement Plan (RP) has been prepared and disclosed in 2015 based on draft initial engineering proposal. The RP anticipated land acquisition impacts for Hajiganj substation and temporary economic impacts for 65 km line work and 7 km new transmission line. During implementation, 2.02 hectares land has been acquired for PGCB substation in Hajiganj, Chadpur. Land acquisition and compensation to 38 persons have been handed over in May 2018. A major part of involuntary resettlement has been avoided by utilizing the existing RoW for the 65 km transmission line. The 7 km underground transmission line also plans to minimize resettlement impacts.

29. The project has been submitting social safeguards monitoring reports on a regular basis. For further improvement in contents, a sample report has been shared with the project team to be used as a templet from upcoming reporting period. The project has been keeping grievance records through grievance boxes with contact numbers placed in substation construction sites at visible location and comment register book is being maintained. The project has also engaged 303 unskilled and 20 skilled persons from the locals to enhance economic opportunities. The RP has been updated and shared with ADB in January 2020. As discussed with PMU during mission, the updated final RP will be disclosed once all the impacts are identified according to the detailed design.

V. FOLLOWUP ACTION

30. For successful implementation of the Project in time, the Mission advised to take immediate steps on the agreed time-bound actions as listed below:

Table-7: Agreed time-bound action plans

Sl. No.	Action	Responsible Agency	Deadline
1	Medical Facilities with immediate appointment of qualified doctor.	APSCL	30 June 2020
2	Translate all safety signage in Bangla	APSCL	15 June 2020
	Cumulative environmental impact analysis by APSCL for all of it's power plants	APSL	30 July 2020
3	Submit improved EMR with quality acceptable to ADB	APSCL, PGCB	30 June 2020
4	Engagement of PGCB EHS team in period monitoring of two sub-stations at Kachua, Chandpur and Cumilla	PGCB	Continuous
5	Initiate compensatory tree plantation	PGCB	30 June 2020
6	Complete an assessment on affected people from the revised route of underground cable trenching.	PGCB	30 June 2020