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Bangladesh: Rupsha 800 MW Combined Cycle Power Plant Project

Component 2: Gas Supply to the Power Plant

Prepared by North West Power Generation Company Limited (NWPGCL), an enterprise of Bangladesh Power Development Board under the Ministry of Power, Energy and Mineral Resources of the People's Republic of Bangladesh for the Asian Development Bank.

CURRENCY EQUIVALENTS

(as of October 2017)

Currency unit	_	taka (Tk)
Tk1.00	=	\$0.0123
\$1.00	=	Tk81.04

WEIGHTS AND MEASURES

1 ha	_	2.47 acre
1 ha	_	10,000 sq.m
1 acre	_	100 decimal

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ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
AH	affected household
AP	affected person
BBS	Bangladesh Bureau of Statistics
CCL	Cash Compensation under Law
CEGIS	Center for Environmental and Geographic Information Services
CMP	Current Market Price
DC	Deputy Commissioner
EA	executing agency
GRC	Grievance Redress Committee
ha	hectare
HH	household
km	kilometer
LGI	Local Government Institution
PMU	Project Management Unit
PWD	Public Works Department
RP	Resettlement Plan
RoW	right-of-way
sft	square foot
SPS	Safeguard Policy Statement 2009

GLOSSARY

Affected Person (AP) includes any person, affected households (AHs), firms or private institutions who, on account of losses that result from the project. There are three types: (i) persons with formal legal rights to land lost in its entirety or in part; (ii) persons who lost the land they occupy in its entirety or in part who have no formal legal rights to such land, but who have claims to such lands that are recognized or recognizable under national laws; and (iii) persons who lost the land they occupy in its entirety or in part who have neither formal legal rights nor recognized or recognizable claims to such land. The involuntary resettlement requirements apply to all three types.

Affected Household (AH) includes all members residing under one roof and operating as a single economic unit, who are adversely affected by the project. For example, those sharing the same kitchen and cooking food together as a single-family unit.

Assistance means support, rehabilitation and restoration measures extended in cash and/or kind over and above the compensation for lost assets.

Compensation includes payments in cash or kind for assets acquired or affected by a project at replacement cost or current market value.

Cut-off date refers to the date after which eligibility for compensation or resettlement assistance will not be considered. Date of service of notice under Section 3 of Land Acquisition Ordinance is considered to be the cut-off date for recognition of legal compensation and the start date of carrying out the census/inventory of losses is considered as the cut-off date for eligibility of resettlement benefits.

Elderly Headed Household, follows the Department of Social Service of Ministry of Social Welfare that uses 65 years for males and 62 years for females to define elderly people.

Entitlements include the range of measures comprising cash or kind compensation, relocation cost, income restoration assistance, transfer assistance, income substitution, and business restoration which are due to AHs, depending on the type and degree /nature of their losses, to restore their social and economic base.

Inventory of losses includes assets listed during the survey/census as a preliminary record of affected or lost assets.

Khas land refers to state-owned fallow land, where nobody has property rights. The Government is entitled to both lease and give away the land to citizens of the country who do not own land. Khasland is considered an important livelihood source for the extreme poor. The khas land, however, is available for allocation according to government priorities.

Kutcha refers to type of temporary housing structure (commonly used in rural areas) made of mud brick, bamboo, sun-grass, wood and occasionally corrugated iron sheets as roofs.

Nontitled refers to persons who have no recognisable rights or claims to the land that they are occupying and includes people using private or public land without permission, permit or grant i.e., those people without legal title to land and/or structures occupied or used by them. ADB's policy explicitly states that such people cannot be denied resettlement assistance.

Project means component 2: Gas transmission line installation for gas supply to the Rupsha 800 MW Power Plant Project at Khulna, Bangladesh of North-West Power Generation Company Limited.

Pucca refers to a type of permanent housing structure (common in urban areas) with brick walls and roofs of concrete. Generally with a life span of over 25 years.

Relocation means displacement or physical moving of the APs from the affected area to a new area/site and rebuilding homes, infrastructure, provision of assets, including productive land/employment and re-establishing income, livelihoods, living and social systems.

Replacement cost refers to the value of assets to replace the loss at fair market price, or its nearest equivalent, and is the amount of cash or kind needed to replace an asset in its existing condition, without deduction of transaction costs or for any material salvaged. The calculation of full replacement cost will consider; (i) transaction costs; (ii) interest accrued, (iii) transitional and restoration costs; and (iv) other applicable payments, if any.

Replacement Land refers to land affected by the project that is compensated through provision of alternative land, rather than cash, of the same size and/or productive capacity as the land lost and is acceptable to the AP. In this project, there is no provision for replacement land. However, additional project assistance is allowed in the form of current market rate as grant to affected persons to buy land lost to the project.

Resettlement refers to mitigation of all the impacts associated with land acquisition including restriction of access to, or use of land, acquisition of assets, or impacts on income generation as a result of land acquisition.

Semi-pucca refers to semipermanent housing structure where walls are made partially of bricks, floors are cemented, and roofs are made from corrugated iron sheets.

Structures include all buildings including primary and secondary structures including houses and ancillary buildings, commercial enterprises, living quarters, community facilities and infrastructures, shops, businesses, fences, and walls.

Vulnerable Households include households that are (i) households headed by women; (ii) households headed by persons with disabilities; (iii) households falling under the generally accepted indicator for poverty¹; (iv) elderly headed households; and (v) households who are landless and (vi) those without legal title to land.²

NOTE

In this report, "\$" refers to US dollars.

¹ In lieu of a national poverty line, the Bangladesh Bureau of Statistics Survey 2010 taking into account inflation has been used to calculate per-capita monthly income for individuals under the poverty line as Tk1,731 and Tk9,176 for households in the Khulna Division. Source: https://www.bb.org.bd/econdata/inflation.php.

² Vulnerable status for the persons without legal title is determined based on the social impact assessment/survey.

Executive Summary

Component 2 Description

i. This draft resettlement plan (RP) is for component 2 of the Rupsha 800 MW Combined Cycle Power Plant Project. The executing agency (EA) for the project is the North-West Power Generation Company Limited (NWPGCL), an enterprise of Bangladesh Power Development Board (BPDB). NWPGCL plans to enhance the country's power generation by constructing the 800 MW Combined Cycle Power Plant (CCPP) at Khalishpur, Khulna. NWPGCL has received approval from the Ministry of Power Energy and Mineral Resources (MoPEMR) to develop the project.

ii. The project has four components: Component 1: the Rupsha 800 MW Combined Cycle Power Plant (CCPP); Component 2: Gas supply to the power plant, a new 10 km gas pipeline from City Gate Station (CGS), Aronghata, Khulna to the receiving and metering station to be located at the proposed Khulna CCPP site, and a new 2.0 km gas pipeline from Fair Clinic Morh, Khalishpur to 225 MW Power Plant, Goalpara, Khalishpur, Khulna; Component 3: Power transmission interconnection, via a 29 km new transmission line; and Component 4, Capacity Strengthening of NWPGCL.

iii. This resettlement plan relates to activities undertaken under Component 2: Gas supply to the power plant. The gas transmission line of 10 km long covers different administrative units wards of Khulna City Corporation under two (2) thanas (Daulatpur (Aronghata) & Khalishpur) of Khulna district. The gas transmission line of 2.0 km long covers only ward No. 10 of Khulna City Corporation under Khalishpur thana.

Scope of Land Acquisition and Resettlement

iv. The 10 km and 2.0 km long and 8-meter-wide gas line alignments under component 2 will be on 8 ha and 1.6 ha of government land, respectively. The land will be used based on mutual agreement between NWPGCL and the land owner organizations: the Roads and Highways Department (RHD), the Khulna Development Authority (KDA) and the Bangladesh Railway (BR).

v. Based on the inventory of losses survey (IOL) survey, 20 households (106 persons), running small businesses in the RoW of the proposed 10 km gas transmission line will be affected. These businesses and a cobbler will have to shift their shops (24 made from temporary kutcha materials) and a tool box (belonging to the cobbler) for installation of the gas line, to another location close by (there is sufficient space for shifting). Common property assets belonging to local mosques and a polytechnic institute within the existing ROW will also be affected (i.e. ablution structure, walls, gate, donation box, sitting place). The project will also affect 326 trees in the land of the RHD (256) and KDA (70). The income of the shops will be temporarily affected during shifting of their business (tin/kutcha) structures. Thirteen vulnerable households have been identified. No residential structures or agricultural land will be affected for this component.

vi. The 2.0 km gas transmission line will affect 6 households (32 persons) running small business which have to be shifted (9 shops made from temporary kutcha materials) for installation of the gas line, to another location close by (there is also sufficient space for shifting). A sitting place constructed by KDA for common use will also be affected. This alignment will also affect 44 trees in the land of the KDA.

vii. The total impacts of component two include 26 affected households (138 affected persons) whose businesses will be affected temporarily during construction of the pipelines.

Socioeconomic Profile of Affected Households

viii. Of the total households identified (26 AHs, 138 APs), the census results found 92 males, accounting for 67% and 46 females, accounting for 33%. Of the affected households, 24 households are headed by men and 2 by women. The affected household size is 5.3 persons. In the households of the study area, 55% of the household heads are literate. Almost all of the children in the households go to school. School attendance in primary and high school level has increased due to free-schooling. The average income and expenditure of households per month is Tk14,350 and Tk12,422, respectively. About 25% of the affected households are below the poverty line, as established in this RP.

Information Dissemination and Stakeholder Consultation

ix. Consultation respondents were mainly people who are going to be affected during the implementation of this component. Among total 31 respondents 28 were male and 3 were female. The people of the project area have already learned about the proposed project from the visiting consultants. Mainly they suggested to work on the road and rail crossing quickly and reconstruct it fast to lessen impacts on people and to engage local people in the construction activities (land development, removal of the disposals and other nontechnical activities) during project activities. In addition, a disclosure meeting was held in October 2017 with 64 attendees (52 men and 12 women). The draft RP and updated RP will be disclosed as per disclosure requirements laid out in ADB's SPS.

Legal and Policy Framework

x. The legal and policy framework of the resettlement plan is based on Acquisition and Requisition of Immovable Property Ordinance, 1982 (subsequent amendments of it up to 1994) in Bangladesh and ADB Safeguard Policy Statement 2009 (SPS, 2009). Based on the analysis of applicable national laws and policies and ADB's safeguard policy requirement, project related principles have been adopted. Generally, the 1982 Ordinance does not recognize unauthorized occupants on the Government land; there is no clear indication about avoiding or minimizing displacement and resettlement of the displaced population. ADB policies require not only resettlement and support but to uphold and at least restore pre-project standard of living of all affected people regardless of title. ADB policies cover physical displacement (relocation) and economic displacement (loss of income sources or means of livelihoods) as a result of involuntary restrictions are full or partial, permanent or temporary and regardless of legal status.

Grievances Redress Mechanisms

xi. The EA (NWPGCL in this case) will establish a project specific Grievance Redress Mechanism (GRM) having suitable grievance redress procedure to receive and facilitate resolution of affected peoples' concerns, complaints, and grievances. The GRM will work utilizing field officers (at first level), PMU Grievance Committee (at second level) and Grievance Redress Committee (at third level). It is anticipated that field officers will be able to respond and resolve minor grievances, especially by working with on-site contractors etc. If no resolution or understanding is reached, the field officer files the grievance/complaint to the PMU grievance committee for it to be resolved within 15 days after filing. If there was no such agreement or

resolution, the matter is presented to the GRC. Any decision made by the GRC must be within the purview of RP policy framework and entitlements. The GRC will function throughout the life of the project loan and will not restrict access of APs to use of a court of law at any time.

Resettlement Budget

xii. This RP presents estimated costs for temporarily land requisition and rehabilitation of APs. The estimated cost in this budget is indicative which needs further update after finalization of right of way (RoW) design and during finalization of the RP, if necessary. The rehabilitation costs and budget covers compensation for the affected structures in the alignment, loss of trees and assistance/benefits and for vulnerability of the APs. The total estimated cost is Tk4,319,101 (Tk4.3 million) and (approximately \$53,594) in which Tk1.5 million (about 40% of total cost) is for compensation of trees.

Institutional Arrangements

xiii. NWPGCL will establish a Project Management Unit (PMU) for the implementation of the project including land requisition and resettlement. NWPGCL will be responsible for finalization, updating, implementation and monitoring of this resettlement plan. During implementation of the RP, a temporary social safeguards staff (or consultant) of the PMU in NWPGCL will be responsible for ensuring that the draft RP is finalized and updated based on SPS 2009 of ADB, applicable national laws and regulations and that all entitlements are paid according to the entitlement matrix. NWPGCL environment and social safeguard staff at their headquarters will provide general oversight of field-based staff.

Implementation, Monitoring and Reporting

xiv. RP implementation will take place over approximately one and a half (1.5) year, starting from compensation process initiation to payment finalization, and semiannual monitoring reports will be prepared. The schedule will be adjusted during final design and implementation.

xv. Internal monitoring of this resettlement plan is the responsibility of NWPGCL through its PMU. NWPGCL will submit semiannual internal monitoring reports on safeguards instruments to ADB which will be disclosed to the ADB website.

1. Description of the Project

1.1 Introduction

1. This draft resettlement plan (RP) is for component 2 of the Rupsha 800 MW Combined Cycle Power Plant Project (hereafter 'the project'). The executing agency (EA) for the project is the North-West Power Generation Company Limited (NWPGCL), an enterprise of Bangladesh Power Development Board (BPDB). NWPGCL is planning to develop and operate 800 megawatt (MW) combined cycle power plant (CCPP). The power plant will be constructed in Khulna city, situated in Khalishpur Upazila, Khulna District in the administrative division of South-Western Bangladesh.

2. In the face of an impending power shortage impacting on the continued growth of Bangladesh's power requirements. The the Government of Bangladesh has requested ADB to finance the project to improve the infrastructure needed to implement its updated poverty reduction strategy.³ NWPGCL has received approval from the Ministry of Power Energy and Mineral Resources (MoPEMR) to develop the project. The project has four components as follows:

3. **Component 1, Ruphsa 800 MW Combined Cycle Power Plant (CCPP).** The Rupsha power plant will be built in the (now abandoned) Khulna newsprint factory premises. It will be of a nominal capacity of 800 MW. The power plant will use combined cycle gas turbine technology, comprising two identical generating units, each nominally rated at 400 MW. Each combined cycle unit will consist of one gas turbine and one heat recovery steam generator (HRSG), forming a one-on-one configuration. At full capacity of 800 MW, the Rupsha power plant is capable of meeting 5% of the forecast peak demand of Bangladesh in year 2022.

4. **Component 2, Gas Supply to the Power Plant.** Petrobangla, the national gas utility and the single-buyer for the gas industry, will procure liquefied natural gas (LNG) from international sources and deliver regasified LNG to Khulna city gas station (CGS). The regional gas distribution company, the Sundarban Gas Company Limited (SGCL) will deliver gas from the existing Khulna CGS to the Rupsha power plant. A new 24-inch (0.6 m) underground gas pipeline 10 km long will be installed from Khulna CGS to the Rupsha 800 MW power plant. The gas receiving and metering station (RMS) will be located at the Rupsha power plant. In addition, a new 20-inch (0.5 m) underground gas pipeline 2 km long will be branched off from the line from Khulna CGS to Rupsha power plant, to serve NWPGCL's existing Khulna 225 MW power plant. Owing to non-availability of gas, this 225 MW power plant is presently operating on diesel.

5. **Component 3, Power Transmission Interconnection** Electricity generated in the Rupsha power plant will be stepped-up to the transmission voltage of 230 kilovolt (kV). A new 29 km transmission line will be built from the proposed power plant to the existing Khulna South substation. The new transmission line will require 3 main river crossings and several minor river crossings, and would traverse mostly through rice fields.

6. **Component 4, Capacity Strengthening of NWPGCL** includes (i) improving project implementation, management, and construction supervision capabilities; (ii) establishing enterprise resource planning system in NWPGCL; and (iii) enhancing operation and

³ Government of Bangladesh. 2010. Steps Towards Change: National Strategy for Accelerated Poverty Reduction. Dhaka.

maintenance practices through procurement and installation of modern and high technology universal power plant operations training simulator. Project management and construction supervision support will be provided for the development of Rupsha power plant.

7. This resettlement plan is for component 2, gas supply to the power plant which includes gas line installation for supply to the Rupsha 800 MW CCPP (component 1) and to the existing 225 MW power plant at Goalpara. A brief description of component 2 is presented below.

1.2 Component 2 - Gas Transmission Line Description

8. The length of the pipe line between the city gas station and the project site would be about 10 km i.e. up to the gas regulatory and metering station of the proposed power project including an off-take gas line of about 2 km (20 inches diameter) from this 10 km (24 inches diameter) at the point of Fair Clinic/Modern Morh to the existing 225 MW power plant at Goalpara.

9. The diameter of the 10 km pipe line would be 24" (twenty-four inches) and the 2 km off take would be 20" (twenty inches). It would be laid in a trench. The width of the trench would be about two (02) meters. The over burden from the top of the pipe would be about 1.5 meter. A typical layout of gas transmission line is shown in Photograph 1.1 and Photograph 1.2.



Photograph 1.1: General View of Gas Pipeline Laying

10. In total three (3) places, the pipe line will cross major roads. It will be placed by horizontal drilling. To comply with the safety regulation before passing gas pipe through the hole a casing pipe will be placed and sealed from the outside. Then the pipe will be passed through the casing across the road.



Photograph 1.2: General View of Horizontal Drilling for Road/River Crossing

11. The pipe line will connect the entry point of the gas metering station (Figure 1.1). Before flowing gas through this pipe line it would be pressure tested as per national standard.



Figure 1.1: General View of Gas Regulating and Metering Station

12. The gas pipe line will be constructed following the health, safety and environment (HSE) guide line and Explosive Rules of Bangladesh. As the gas distribution line would be laid and operated following HSE and Explosive rules of Bangladesh, therefore, no major environmental impact is envisaged for this gas distribution line.

1.3 Measures to Minimize Impacts

13. The proposed component 2, gas transmission alignment has been designed to minimize resettlement impacts. Criteria for route selection considered (i) length of route, (ii) number of bend, (iii) number of structures to be affected, and (iv) number of major road crossing. The three route options considered are presented in Table 1.1 and Map 1.1. The selected route option (2)

has shortest length of route, least number of bends, affected structures and number of major road crossing. There is no difference between route option 2 and route option 3 in the cases of length of route and number of major road crossing, while the route option 3 has a higher number of bends and affected structures compared to those in route option 2. Route option 1 does not in favour of all cases of the selected criteria compared to those of route option 2. Besides, the selected route option (2) avoids urban and settlement areas also. There are no permanent structures in the route option-2 alignment but option 1 includes 1,500 out of 2,500 and option 3 includes 150 out of 180 permanent structures (Table 1.1), and markets including major ones which are the earning source/livelihood options of a lot of people.

14. Local people were consulted with regards to the route selection for component 2. Most people opined in favour of route option 2. There are a large number of settlements and high-rise buildings in the RoW area of route option 1. Considering all the aspects mentioned above local people favoured route option 2.

15. Analyzing the elements of alternative routes, the route option 2 is more suitable than other alternatives. It offers less permanent and temporary structures, includes less markets, and road networks. This route is designed through less population dense area. It, therefore, minimizes the effects and the project implementation costs as well. Route option 2 is the most suitable gas transmission route alignment.

Issues	Route 1	Route 2 (selected as final route)	Route 3
Length (km)	19.3	10	10.5
Nos. of bends	17	14	19
Nos. of structures to be affected	2,500	25	180
Nos. of major road crossing	5	3	3

Table 1.1: Alternate analysis of route



Proposed LNG Gas Transmission Pipe Line Route Map

Map 1.1: Proposed RoW of gas transmission alignments

2. Scope of Land Acquisition and Resettlement

2.1 General

16. Impacts due to project interventions were assessed through field surveys conducted from 12–15 June and 16–19 August of 2017 for 10 km and 2.0 km RoWs, respectively. The techniques used for data collection included: (i) inventory of losses survey (IoL); (ii) interviews with the affected person; and (ii) informal discussions with the affected and non-affected persons. Questionnaire and checklists were used for collecting data. A team of experienced field staff facilitated these activities. The impacts mentioned herein are based on the preliminary design, whilst not anticipated, any significant changes in the alignment will require a verification survey of IR impacts and an updated RP to be prepared.

17. The field survey findings have identified land of Roads and Highways Department (RHD), Khulna Development Authority (KDA) and Bangladesh Railway (BR), burrow pits of RHD and KDA, small business and other structures, trees on RHD and KDA land as being affected by the project interventions. A summary of affected households, structures and census information such as income is presented in Appendix 1 and photos in Appendix 5.

18. Based on the IOL survey, 20 households (106 persons), running small businesses in the RoW of the proposed 10 km gas transmission line will be affected. These businesses and a cobbler will have to shift their shops (24 made from temporary kutcha materials) and a tool box (belonging to the cobbler) for installation of the gas line, to another location close by (there is sufficient space for shifting). Common property assets belonging to local mosques and a polytechnic institute within the existing ROW will also be affected (i.e. ablution structure, walls, gate, donation box, sitting place).

19. The RoW of the proposed 2.0 km gas transmission line will affect 06 households (32 persons) also running small businesses (9 shops made from temporary kutcha materials), a sitting place belonging to a college, a staircase, and a decorative platform in KDA land. The RoW will also affect 44 trees in KDA land. Based on the preliminary assessment, a summary of component 2 impacts are given in Table 2.1 below.

20. The total impacts of component two include 26 affected households (138 affected persons) whose businesses will be affected temporarily during construction of the pipeline.

· · · · · · · · · · · · · · · · · · ·			
Particulars	Details of 10 km RoW	Details of 2.0 km RoW	
Length in km	10	2.0	
Area under RoW (ha)	8	1.60	
(i) RHD	2.8	0	
(ii) KDA	5.0	1.56	
(iii) BR	0.2	0.04	
Total AHs (Nos.)	20	6	
Male headed HH	18	6	
Female headed HH	2	0	
On RHD land	2	0	
On KDA land	18	6	

 Table 2.1: Summary of impacts

Particulars	Details of 10 km RoW	Details of 2.0 km RoW
On BR land	0	0
Population	106	32
Total vulnerable households (Nos.)	13	0
(i) households headed by women	2	0
(ii) households headed by persons with disabilities	0	0
 (iii) households falling under the generally accepted indicator for poverty⁴ 	4	0
(iv) elderly headed households	4 ⁵	0
(v) Households who are landless	36	0
Affected structures (Nos.)		
(i) On RHD land (squatting)	2	0
(ii) On KDA land (squatting)	34	12
(iii) On BR land (squatting)	0	0
Total trees in Govt. area (Nos.)	326	44
(i) On RHD land	256	0
(ii) On KDA land	70	44
(iii) On BR land	0	0

2.2 Impact on Land

21. **RoW of 10 km:** The installation of the gas transmission line (10 km) will be done on existing government land (RHD, KDA, and BR). This land including burrow pit will not be subject to permanent acquisition. However, the land will be used on mutual agreement between the government organizations (RHD, KDA & BR) and NWPGCL. Out of total 8 ha of land in 10 km RoW of gas transmission line, RHD, KDA and BR have 2.8, 5.3 and 0.15 ha of land, respectively.

22. **RoW of 2.0 km:** The installation of the gas transmission line (2.0 km) will be done on government land (KDA and BR). This land will not be subject to permanent acquisition. However, the land will be used on mutual agreement between the government organizations (KDA & BR) and NWPGCL. Out of total 1.6 ha of land in 2.0 km RoW of gas transmission line, KDA and BR have 1.56 and 0.04 ha of land, respectively.

2.3 Impact on Structures

23. **RoW of 10km:** Based on the survey there are 25 primary structures, made from primarily kutcha (temporary) materials. Out of 25 structures, 24 are small shops and 1 is *wudukhana* of a mosque (ablution room) (see Table 2.2). The shop stalls sell tea, chocolate, candy, cookies, paan (betel leaf), bidi, cigarette, etc. There are 11 more affected structures

⁴ In lieu of a national poverty line, the Bangladesh Bureau of Statistics Survey 2010 taking into account inflation has been used to calculate per-capita monthly income for individuals under the poverty line as Tk1,731 and Tk9,176 for households in the Khulna Division. Source: https://www.bb.org.bd/econdata/inflation.php.

⁵ All of heads (elderly) still earn from their shops; live above poverty line; have land and have means of support (other earning member in the households).

⁶ Out of 3 landless HHs, 1 HH is headed by female and below poverty line. The remaining two live above the poverty line; one is headed by female and the other by male. All other affected HHs own land elsewhere.

(secondary), those are a donation box (1), entrance gate (1) with a boundary wall (1) and seats (6) for ablution in an open space at two mosques, a bench (1) made of concrete material, and a tool box (1) of a cobbler (Table 2.3). Details of the structures are presented in Appendix 1 (Table A1.2).

24. **RoW of 2.0 km:** Based on survey data, there are 09 primary structures, made from primarily kutcha (temporary) materials. All primary structures are small shops (see Table 2.2). Out of 09 shops, 08 shops sell tea, chocolate, candy, cookies, paan (betel leaf), bidi, cigarette, etc. The remaining shop (01) makes and sells wooden furniture. There are 03 more affected structures (secondary), those are a staircase (1) made of iron, sitting place (1), and a decorative platform (6) made of concrete material (Table 2.3). Details of the structures are presented in Appendix 1 (Table A1.5).

Affected/ loss items	Type of structures					
	Semi-pucca	Kutcha	Total			
	RoW of 10 km					
Small shop	0	24	24			
Wudukhana (of Mosque)	1	0	1			
Total	1	24	25			
RoW of 2.0 km						
Small shop	0	9	9			
Total	0	9	9			

Table 2.2: Affected primary structures by type in the RoW

Table 2.3: Affected secondary structures by type in the RoW

		Type of structures				
Categories of loss	Pucca	Kutcha	Steel/Iron	Total		
		RoW of 10 km				
Donation Box	1	-	-	1		
Entrancegate	-	-	1	1		
Wudukhana (No.)	6	-	-	6		
Bench (sitting place)	1	-	-	1		
Boundary wall (5")	1	-	-	1		
Cobbler's tool box	-	1	-	1		
Total	9	1	1	11		
		RoW of 2.0 km				
Staircase	0	0	1	1		
Bench (sitting place)	1	0	0	1		
Extended platform	1	0	0	1		
Total	2	0	1	3		

2.4 Loss of Trees

25. **RoW of 10 km:** The initial survey indicates that there are 326 trees on existing government land in the alignment. Out of 326 trees, 256 are on the land of the RHD and 70 are on the land of KDA. The trees on the RoW will be removed for installation of the gas transmission line. Compensation for trees is considered in the budget of this RP for the

cultivator. Details of the affected trees are presented in the tables (Table 2.4 and Table 2.5) below.

26. The trees in the RoW in government (RHD) land are planted under the strip plantation program of social forestry of the Forest Department. In this context, the compensation of trees will be distributed among the parties of the strip plantation program. The parties are (i) Forest Department (10%), (ii) RHD (20%), (iii) beneficiaries/local people (55%), (iv) local union parishad (5%), and plantation fund (10%), according to Sub-section 2 (*Ga*/C), Section 20 of Social Forestry Rules of 2004, amended in 2011. In the case of trees in KDA land under the RoW, all trees are planted by the KDA itself. As such the trees compensation will be paid to KDA alone.

Name of trees			Size of tree		
Name of trees	Big	Medium	Small	Sapling	Total
		Fruit trees			
Date (Khejur)	5	2	12	0	19
Palm	0	0	12	0	12
Subtotal	5	2	24	0	31
		Timber			
Mehgoni	0	8	43	0	51
Akashmoni	0	0	17	120	137
Babla	0	0	37	0	37
Subtotal	0	8	97	120	225
Grand total	5	10	125	120	256

Table 2.4: Affected trees on the RHD land by species and number in RoW of 10 km

Table 2.5: Affected trees on KDA land by species and number in RoW of 10 km

Name of trees	Size of tree							
Name of trees	Big	Medium	Small	Sapling	Total			
	Timber							
Banyan	0	1	0	0	1			
Raintree	1	6	1	0	8			
Mehgoni	20	9	32	0	61			
Total	21	16	33	0	70			

27. **RoW of 2.0 km:** There are 44 trees on the government land in the alignment. All trees are on the land of KDA. The trees on the RoW will be removed for installation of the gas transmission line. Compensation for trees is considered in the budget of this RP for the cultivator. Details of the affected trees are presented in the tables (Table 2.6) below.

Table 2.6: Affected trees on KDA land by species and numberin RoW of 2.0 km

Nome of trees	Size of tree						
Name of trees	Big	Medium	Small	Sapling	Total		
	Timber trees						
Bakul	0	1	2	0	3		
Raintree	2	2	1	0	5		
Mahagoni	10	7	12	0	29		
Shishu	0	4	2	1	7		
Total	12	14	17	1	44		

2.5 Impacts on Fish Gher

28. **RoW of 10 km:** There is one fishing pond encroaching within the existing ROW, however no loss of fish stocks is anticipated. The gas transmission line installation will not affect the fish of gher ponds, as fish will be kept in the main body of the ghers by constructing a demarcation fence on the border line of the land/burrow pits in the RoW and fish ghers. The budget of this RP, therefore, does not consider fish loss. Photograph 2.1 shows an example of the encroached area of fish gher. During laying of the line, measures will be included to allow the farmer access to maintain his farming activities.



Photograph 2.1: Encroached area of fish gher in the RoW (KDA) land

29. **RoW of 2.0 km:** There is no impact of this alignment on fish gher.

2.6 Loss of Income and Livelihoods

30. **RoW of 10 km:** The field findings identified 19 small businessmen and a (1) cobbler who are all squatters (not encroachers) in the RoW of the gas transmission line. These persons will have to shift their shops and tool box for installation of the gas transmission line, respectively from the affected area in the RoW to a proximal location (there is enough space for shifting). This activity will temporarily affect income and livelihoods of the individual shop owners. All shops are run by the owner, there are no employees. The shifting of shops will take up to a day, however consideration has been given for one week to set up in the new location. Shops will *not* be able to return to the original location for safety reasons. The budget of this RP, therefore, considers assistance (cash compensation) for income loss of the businessmen and the cobbler for one week.

31. **RoW of 2.0 km:** There are 06 small businessmen who are all squatters (not encroachers) in the RoW of the gas transmission line. These persons will have to shift their shops for installation of the gas transmission line from the affected area in the RoW to a proximal location (there is enough space for shifting). This activity will temporarily affect income and livelihoods of the individual shop owners. All shops are run by the owner, there are 06 employees in 03 shops (02 employees in each shop). The shifting of shops will take up to a day, however consideration has been given for one week to set up in the new location. The budget of this RP, therefore, considers assistance (cash compensation) for income loss of the businessmen and their employees for one week.

2.7 Vulnerable Households

32. **RoW of 10 km:** There are 13 affected households identified as vulnerable in this RP. The entitlement matrix and the budget of this RP also recognize their vulnerability and consider special support from the project. The field investigation found no indigenous people/ethnic minorities within the definition from ADB's SPS 2009.

33. Whilst all the affected business are squatting informally in the ROW, the majority of these have titled land elsewhere. Only those households who are completely landless or without any title whatsoever are accounted for in the Table 2.7 below. None of the effected business are encroachers, they are all squatters.

Total vulnerable households (Nos.)	13
(i) households headed by women	2
(ii) households headed by persons with disabilities	0
(iii) households falling under the generally accepted indicator for poverty ⁷	4
iv) elderly headed households	4 ⁸
v) Households who are landless	3 ⁹

 Table 2.7: Vulnerable Households 10km ROW

34. **RoW of 2.0 km:** Survey data revealed that there are no vulnerable households in this alignment, as per the definition provided for in this RP.

⁷ In lieu of a national poverty line, the Bangladesh Bureau of Statistics Survey 2010 taking into account inflation has been used to calculate per-capita monthly income for individuals under the poverty line as Tk1,731 and Tk9,176 for households in the Khulna Division. Source: https://www.bb.org.bd/econdata/inflation.php.

⁸ All of heads (elderly) still earn from their shops; live above poverty line; have land and have means of support (other earning member in the households).

⁹ Out of three landless HHs, one HH is headed by female and earning poor income (below poverty line). The remaining two live above poverty line; one is headed by female and the other by male. All other affected HHs have titled land elsewhere.

3. Socioeconomic Profile

3.1 Preamble

35. This chapter provides a socioeconomic profile in terms of demography, literacy, employment, income and expenditure of the study area¹⁰ in Khulna district through which the line will traverse for the project. The study area for this socioeconomic profile includes both 10 km and 2.0 km RoWs in Daulatpur (Aronghata) and Khalishpur thanas of Khulna District. Thana wise socioeconomic profile data is collected from the Population and Housing Census 2011, Bangladesh Bureau of Statistics, 2012 (BBS, 2012) and Household Income and Expenditure Survey 2010 (HIES 2010), BBS, 2011. Primary data is also presented as complimentary to the secondary information.

3.2 Demography

36. Of the study area population, there are 51% male and 49% female in the project area. The male-female ratio is 103 which means there are 103 males per 100 females. The average household size in the study area is 4.2 whereas the national average is 4.4 (BBS, 2012). Among the affected households, the average household size is 5.3 persons.

37. In the study area, the highest number of population (about 27%) belongs to the age group of 30 to 49 years while the lowest number (about 3%) belongs to 60 to 64 years age group. Age groups of 0–14 years is defined as children (28%), 15–24 years as early working age group (21%), 25–59 years as prime working age group (43%), 60 and over as elderly people (8%).

38. The census survey conducted for resettlement plan preparation identified 26 affected households with 138 persons, in which there are 92 males, accounting for 67% and 46 females, accounting for 33%. In the affected households, 24 households are headed by men and 2 by female.

3.3 Education and Occupation

39. The literacy rate is 59% (nationally 52%, divisionally 53%), where males account for 61% (nationally 54%, divisionally 56%) and female accounts for 56% (nationally 49%, divisionally 51%).

40. Of the affected households, 55% of the household heads are literate, of which 35% (the highest percentage of household heads) have primary level of education, whereas only 5% household head has education up to bachelor degree level.

41. However, it is found in the study area during field visits that almost every child in a household goes to school meaning that admitting in primary or pre-primary school is nearly one hundred percent. The rate of drop out in high school is low. School attendance in primary and high school has increased due to free-schooling and free educational book programs.

42. In the study area about 39% are employed in different sectors. About 35% of people are engaged in household work. It has also been found that 25% of total population are not working.

¹⁰ Study area refers to the area that may be affected directly or indirectly by the project intervention, which is considered for environmental impact assessment (a different study).

43. The main field of economic activity/occupation of the employed population is service (60%), where male accounts for 45% and female accounts for 15%. About 26% of people are engaged in the agriculture sector and 14% of total population is engaged in the industrial sector. Figure 3.1 shows the main economic activity in the study area. The primary census data supplements this secondary data. The census data shows that all affected households (100%) are involved with small business. Almost all (96.16%) have business selling tea, chocolate, candy, cookies, paan (betel leaf), bidi, cigarette; and 3.84% have business of wooden furniture.



Source: Population and Housing Census 2011, BBS, 2012.

Figure 3.1: Field of economic activity in the study area

3.4 Income and Expenditure of Affected Households

44. Result of the census executed by local consultants shows that, household's lowest income per month is Tk7,000 and the highest income per month is Tk29,000. The lowest expenditure of households is Tk5,740 per month and highest expenditure of household is Tk23,780 per month. The average income of household is Tk14,350 per month and average expenditure of households is Tk12,422 per month. Details with regards to all affected households income is contained in Appendix 1.

45. Household with income under Tk9,176.00 per month are considered as below the poverty line which includes approximately 25% of the affected households. The poverty line has been calculated based on the Bangladesh Bureau of Statistics Survey 2010 and inclusive of inflation through to 2017 (https://www.bb.org.bd/econdata/inflation.php). Based on this, per-capita *annual* income for individuals under the poverty line is Tk20,776 (Tk1,731 monthly) and *annual* household income below the poverty line is Tk110,110 (Tk9,176 monthly) for the Khulna Division.

Income group (Tk)	Inco	ome	Expend	liture
	No of HH % of HH		No of HH	% of HH
<=9,200	5	19.2	9	34.6

Table 3.1: Income and Expenditure of the affected households

Income group (Tk)	Inc	ome	Expend	liture
	No of HH	% of HH	No of HH	% of HH
9,201–14,200	7	26.9	6	23.1
14,201–19,200	8	30.8	7	26.9
19,201–24,200	3	11.5	3	11.5
>=24,201	3	11.5	1	3.8
Total	26	100	26	100

Source: Census survey, CEGIS, 2017.

3.5 Gender Issues

46. Women's rights and opportunities have improved in recent years in Bangladesh in a range of key areas. For example, in closing the gender gap in school enrolments at primary and secondary levels. Growth in the garment industry has also led to jobs for women in the formal sector where women sometimes comprise 90% of the labour force. Despite these improvements, Bangladesh remains a strong patriarchal society with women often seen as dependent on men. Women, continue to bear the burden of household work in the gendered division of labour. Gendered norms about women's engagement in wage work also persist. A study of rural and urban women in Bangladesh found that of those who want paid work, 64% were unable to take advantage of it due to household obligations; other reasons cited included the need for childcare and lack of available jobs.¹¹

47. Infrastructure projects may impact men and women differently. But women are usually more affected in cases where they face difficulties due to the impacts of the project, especially a female headed household with dependents such as poor female workers with a large number of dependents such as children/the elderly/disabled, or families facing serious disadvantage.

48. The project has found 2 female headed households having a total of nine (9) dependents among the 26 affected households. These 2 female headed households are also considered as vulnerable households and eligible for livelihood training activities under the Trust Fund initiative.

49. Furthermore, a Gender Action Plan (GAP) will be prepared under the project. This Gender Action Plan includes specific actions and strategies and cost estimates that are gender responsive and culturally appropriate. It is anticipated that the GAP will include skill development programs for women in households affected by the project.

50. In addition, the PMU will pay special attention in conducting any additional surveys required, during consultations such that both women and men participate; and attempt to ensure that both husband and wife are present when compensation entitlements are discussed and ensure both husband and wife are invited to receive the compensation and other allowances due to the household for affected assets.

¹¹ Khatun, Khan and Pervin (2014) *Estimating Women's Contribution to the Economy: The Case of Bangladesh*, Centre for Policy Dialogue Bangladesh.

4. Information, Consultation and Public Disclosure

4.1 Introduction

51. Stakeholder consultation is a part of the RP process aimed at involving the project stakeholders into the project development and implementation process. During the consultation process of the proposed project, the project interventions and their likely impacts on the environment as well as on households were shared with the project stakeholders in meetings and discussions.

52. In this RP, key information interview (KII) with project affected people and different officials and informal discussion with local people were undertaken. In the consultation process, the stakeholders got involved with the RP consultants and project proponent, to share their problems, needs and aspirations in a participatory way. In this process NWPGCL as the project proponent could obtain stakeholders' views and feedbacks on the proposed interventions and perceptions on the probable changes likely to be happened in future within the project area. In addition, a disclosure meeting was held in October 2017 with 64 attendees (52 men and 12 women).

4.2 Objectives of Stakeholder Consultation and Information Dissemination

53. The main objective of the stakeholder consultations is to involve the stakeholders in the project cycle and explore stakeholders' perception and attitude regarding the proposed project. The specific objectives were to:

- Ensure peoples' participation in the proposed project;
- Make the affected people aware about "cut-off date";
- Share experiences of the participants regarding such project over the years;
- Explore problems related to the project in the project area;
- Understand probable solution of the problems;
- Unfold stakeholder's attitudes towards the project;
- > Discuss concerns of vulnerable affected households/groups.

4.3 Locations of Stakeholder Consultations

54. The locations were selected at different places in or around the proposed gas pipe line alignment/ RoW. The respondents were primarily those going to be affected during the implementation of this project component. A total of 31 respondents (28 were male and 3 were female) participated. This included (i) KII with the stakeholders of the project (SGCL officials) and (ii) informal discussion with the local people who reside adjacent to the project site. Details of the meetings/discussions including locations, date, meeting type are presented in the table below:

Municipality/ Masting							
Division	District	Thana	Municipality/ Union	Meeting type	Meeting Place	Date	
		Daulatpur	Aronghata	Informal discussion	Aronghata Bypass	12/6/2017	
		Sonadanga	-	KII	SGCL Office, Khulna	12/6/2017	
		Khalishpur	9 no. ward	Informal discussion	Beside Abu Naser Hospital	12/6/2017	
	Khalishpur		9 no. waru	Informal discussion	Refugee colony road	13/6/2017	
Khulna	a Khulna Khalishpur Khalishpur Khalishpur	Khalishpur	12 no. ward	Informal discussion	BL college road	13/6/2017	
		Khalishpur	12 no. ward	Informal discussion	Lebutola point	14/6/2017	
		10 no. ward	Informal discussion	In front of Mohsin College	17/8/2017		
		Khalishpur	Khalishpur	Khalishpur 8 no. ward	Informal discussion	Peoples' Morh	18/8/2017
	Khalishpur	Kr	13 no. Ward Khulna City Corporation	Public disclosure session for project	Institution of engineers, Bangladesh (IEB) conference room	19/10/2017	

Table 4.1: Different location of consultation	ons
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4.4 People's Perceptions on the Project

55. Project affected people were consulted and informed about the proposed project interventions and the process of peoples' participation in preparing the RP. The people of the Project area had already learned about the proposed project from visiting consultants. Generally those consulted had a positive outlook towards this project component as the land required is owned by the government.

56. Local people identified some potential issues in the consultation meetings and suggested some measures to mitigate impacts. **Table 4.2** summarises findings of the consultation meetings/discussions for Component 2 and the measures NWPGCL will use to address these potential issues.

Problems& Suggestions	Measures to Address Issues
The people will be in trouble if the construction activities would begin without any notice.	All affected households will be given one-month advanced notice as per the entitlement matrix.
The process for getting compensation is very complex. The process of compensation payment should be easy and maintaining all guidelines.	Compensation process will be announced. Non- titled persons are entitled to get compensation and assistance for their losses incurred. NWPGCL will facilitate the process whereby APs will receive a cheque/ debit voucher for their entire compensation payment. The Account Payee Cheque will be disbursed in a public place/local government

 Table 4.2: Summary findings from the consultation meeting/discussion

Problems& Suggestions	Measures to Address Issues
	institution (LGI) office (Upazilas Ward).
Religious structures should be avoided, or if unavoidable, then reconstruction should be done in shortest possible timeframe.	The project will only impact secondary structures of religious buildings that are within the ROW (such as donation box, bench, boundary wall). The entitlements matrix and budget ensures structures will be paid at current market rates or reconstructed based on preference.
There are some major roads and rail crossing points in the RoW, problems may arise in transportation and communication sector during construction period and should be done quickly and within the dry season.	It will take six months to complete the entire construction activities, it will be preferably in dry season. The gas pipe installation and earth refilling will be done simultaneously. Water will be sprayed to protect spoil dust. Construction activities in
Construction activities during wet season may cause a great obstacle for the project affected people and the road users.	different important places would be completed very quickly.
Weak spoil (to be originated from excavating soil for the placement of gas pipeline) management may cause problems for the local people during construction period and a robust management system is needed.	



Discussion with structure owner



Discussion with GM, SGCL

Photograph4.1: Discussions with the stakeholders

5. Legal and Policy Framework

5.1 National Laws and Regulations

57. The Acquisition and Requisition of Immovable Property Ordinance, 1982 (subsequent amendments of it up to 1994) is used as the legal support for land acquisition and requisition in Bangladesh. The 1982 Ordinance requires that compensation be paid for (i) land and assets permanently acquired (including standing crops, trees, houses); and (ii) any other damages caused by such acquisition. The Ordinance provides certain safeguards for the owners and has provision for payment of "fair value" for the property acquired. The Ordinance, however, does not cover project-affected persons without titles or ownership record, such as informal settler/squatters, occupiers, and informal tenants and lease-holders (without document) and does not ensure replacement value of the property acquired. The Act has no provision of resettlement assistance and transitional allowances for restoration of livelihoods of the nontitled affected persons.

58. The Deputy Commissioners (DC) in all cases, determine "market value" of acquired assets on the date of notice of acquisition (notice under Section 3 of the Ordinance). The DCs then add 50% premium of the assessed value for cash compensation under law (CCL) of all acquired assets due to compulsory acquisition. The CCL paid for land is generally not considering resettlement assistance for restoration of livelihoods of affected persons except for the legal compensation. If land acquired has standing crops cultivated by tenant (bargadar) under a legally constituted written agreement, the law requires that part of the compensation money be paid in cash to the tenants as per the agreement. Places of worship, graveyard and cremation grounds are not to be acquired for any purpose. The law requires that the salvaged materials upon payment of compensation will be auctioned out by the Government.

5.2 ADB's Safeguards Policies and Guidelines

59. The project financier ADB has specific resettlement safeguards that recognises and addresses the resettlement and rehabilitation (R&R) impacts of the affected persons irrespective of their titles and requires preparation of an RP in every instance where involuntary resettlement occurs. In brief, the policy requirements are:

- avoid or at least minimise impacts where possible i.e. explore viable alternative project designs to avoid and/or minimise involuntary resettlement;
- carry out meaningful consultations with affected persons, avoid and/or prevent forced eviction and provide effective remedy to minimise negative impacts;
- provide resettlement support and/or sites to communities impacted by the project, including host communities;
- pay compensation for acquired assets at the replacement value;
- enhance, or at least restore, the livelihoods of all affected persons in real terms relative to pre-project levels; and to improve the standards of living of the displaced poor and other vulnerable groups;
- planning through a survey and/or census of displaced persons, including gender analysis, specifically related to resettlement impacts and risks;
- inform all displaced persons of their entitlements and resettlement options. Ensure their participation in planning, implementation and monitoring and evaluation of resettlement programs;

- pay particular attention to the needs of the vulnerable groups, especially those below poverty line, the landless, the elderly, women and children and indigenous people, and those without title to land, and ensure their participation in consultations;
- establish a grievance redress mechanism for dispute resolution;
- support the social and cultural institutions of displaced persons and their host population;
- provide resettlement assistance to displaced persons, including nontitled persons;
- socioeconomic surveys and a census are to be conducted, with appropriate socioeconomic baseline data to identify all persons who will be displaced by the project and to assess the project's socioeconomic impacts on them;
- the social impact assessment will identify individuals and groups who may be differentially or disproportionately affected by the project because of their disadvantaged or vulnerable status;
- resettlement plans will elaborate displaced persons entitlements, the income and livelihood restoration strategy, institutional arrangements, monitoring and reporting framework, budget and a time-bound implementation schedule.

5.3 Gap between Government Laws and ADB Policies

60. There are evident gaps in the government's 1982 Ordinance for land acquisition and ADB policies and guidelines related to land acquisition, compensation and involuntary resettlement. A Gap analysis describes gaps between the government and ADB policies and project-specific measures to bridge the gaps (see Table 5.1). A brief summary of the gaps between the government and ADB is in order:

61. Generally, the 1982 Ordinance does not recognise unauthorised occupants on government land and there is no clear indication about avoiding or minimising displacement. ADB policies strongly require avoidance or at least minimization of adverse impacts through alternative design options.

62. The adverse social impacts are not entirely recognised by the 1982 Ordinance – for instance, there are no provisions for resettlement of the displaced population, whereas ADB policies require not only resettlement and support but uphold and at least restore pre-project standard of living of the affected people.

63. The 1982 ordinance pays very little attention to public consultation and stakeholders engagements in project planning and execution. ADB policies require meaningful consultation with the affected people and other stakeholders to disseminate project goals and objectives to obtain stakeholder's views and inputs in project planning and implementation.

64. Finally, ADB policies pay special attention to gender issues and vulnerable groups in the resettlement processes, particularly the nontitled and the affected poor households. The policy gaps have been bridged by additional project-specific measures adopted in the RP. The project has minimised displacement of people as much as possible by exploring all viable design alternatives. Extensive community consultations were held during project preparation and will continue during implementation of the project. Adequate compensation; replacement cost (for lost assets and income); and rehabilitation and livelihood assistance will be provided so that APs can improve or at least restore their standard of living at pre-project level. Special attention

will be given to vulnerable APs including elderly and women headed households. In sum, the added measures in this project fully comply with ADB social and resettlement safeguard policies. Table 5.1 provides a summary of the key measures taken to comply with ADB Policy requirements.

SI. No.	Gaps between ADB Policies and the government's 1982 Ordinance II Gap-filling measures/actions taken in this pro			
1	Gaps with regard to avoidance and minimized project impacts	The project design adopted aimed to minimize impacts.		
2	Existing Government laws recognize title owners only; informal settlers are not covered.	Displaced persons without titles to land or any recognizable legal rights are eligible for assistance and compensation for loss of nonland assets in this RP. Under the project all affected persons irrespective of titles have been identified for compensation and assistance.		
3	Existing laws prescribe the manner in which market value is to be calculated. However, there is no requirement for compensation at replacement value for land when loss of land does not undermine livelihoods.	As all affected in this RP are nontitled, there is no titled landholders affected. All nontitled will be compensated for nonland assets, based on current market value (see section 5.5 and Appendix 3 for valuation).		
4	 While there is opportunity for any person interested in any property which has been notified as being needed or likely to be needed for a public purpose or in the public interest, to object to the acquisition and for a hearing thereon there are no provisions to consult host communities and concernedunder 1982 Ordinance II. Consultations were carried out during the prophase of this RP; similar consultations will during project implementation as outlined in 4. 			
5	No relocation assistance or support under 1982 Ordinance II	Affected households and businesses will receive shifting assistance and support from the project.		
6	No support or program for income and livelihood restoration to ensure livelihoods are restored to pre-project levels.	The project benefits include allowances for temporary income loss, vulnerability allowances and compensation for structures at market rates to ensure pre-project livelihoods are maintained.		
7	No provision for reconstruction of common property resources	The project will reconstruct or provide cash compensation at replacement cost for all common property resources affected by the project.		

5.4 Eligibility and Cut-Off Date

65. Eligibility to receive compensation and resettlement assistance will be limited by "cut-off" date. The census has identified and established the households living in the project area, including the squatters/informal settlers on the proposed land of NWPGCL will be affected by the project.

66. The cut-off date to be used in the project for eligibility of nontitled persons such as squatters or other informal settlers and additional benefits under the project entitlement matrix is

12–15 June and 16–19 August 2017. These dates were clearly mentioned during the local consultation meetings in right-of-way of Khulna City Gas Station (CGS), Aronghata to Khalishpur Khulna Newsprint Mills (KNM). Any persons moving into the project area after the cut-off dates will not be entitled for compensation or any assistance from NWPGCL. In this project there is no titled owners of land in the project right-of-way land and as such there is no cut-off date for titled owners. The cut-off date for the titled owners is notified by the Deputy Commissioner (DC) under Section 3 of the 1982 Ordinance informing the land owners of the project right-of-way land.

5.5 Valuation Methods for Affected Assets

67. The project has provision for payments of replacement value for assets affected in compliance of current market price (CMP). To do that for this project property valuation surveys for structures and trees have been conducted and secondary data (government rates) collected from Public Works Department and Forest Department. The CMP for various structures by types and trees have been determined (see **Appendix 3** for rates and activities undertaken to determine valuation). There is no scope of DC's payments to the affected persons, as affected persons are all nontitled. NWPGCL will pay compensation to all affected persons. In the case of government land use mutual understanding between NWPGCL and the government organization concerned (RHD & KDA) to be held.

5.6 Core Project Principles

68. NWPGCL in compliance with the ADB policy requirements and as well as past experience from project implementation, confirms the following principles for this project:

- The land acquisition and resettlement impacts would be avoided or minimised as much as possible through alternate design options;
- A summary of the RP with the entitlement matrix will be disclosed to the affected persons in the local language (Banglali);
- Compensation for assets affected will be paid prior to the start of civil work in accordance with the provisions described in this document;
- People moving into the project area after the cut-off date will not be entitled to assistance;
- An appropriate grievance redress mechanism will be established to ensure speedy resolution of disputes;
- All activities related to Resettlement Planning, implementation, and monitoring would ensure the involvement of women and other vulnerable groups;
- Affected households residing, working, doing business and/or cultivating land within the impact area prior to the cut-off date, are entitled to be compensated for their lost assets, incomes and businesses at replacement cost, and will be provided with assistance to improve or at least maintain their pre-project living standards, incomeearning capacity and production levels.
- Affected households will be eligible for compensation and rehabilitation assistance, irrespective of tenure status, social or economic standing and any such factors that any discriminate against achievement of the resettlement objectives. Lack of legal rights to lost assets or tenure status and social or economic status will not bar the affected households from entitlements to compensation and assistance.
- In case of any price differential between the prices determined under existing laws and full replacement cost as determined in this RP, the requirement of full

replacement costs of ADB's SPS 2009 shall prevail meaning that price differential will have to be topped up and paid to affected persons.

- There will be no deductions in compensation payments for structures or other affected assets for salvage value, depreciation, taxes, stamp duties, fees or other payments.
- Temporarily affected land under requisition will be compensated or may be taken on lease for the construction period. Temporarily affected land and structures will be restored to pre-project conditions.
- Existing social, cultural and religious practices will be respected.
- Contract agreements will include a clause that the construction contractor will compensate any loss or damage in connection with collection and transportation of borrow-materials.

69. In accordance with the resettlement principles adopted in this project, all displaced households and persons will be entitled to a combination of compensation packages in cash and resettlement assistance depending on the nature losses, scope of the impacts including socioeconomic vulnerability of the displaced persons and measures to support livelihood restoration if livelihood impacts are envisaged. The displaced persons will be entitled to

- Compensation for loss of structures (including community property i.e. mosque) at their replacement value;
- Compensation for trees to socially recognized owners at current market price;
- Assistance for loss of business/ wage income;
- Assistance for shifting of structures;
- Rebuilding and/ or restoration of community resources/facilities; and
- Special assistance to vulnerable households with support to livelihood and income restoration.

70. In sum, NWPGCL will provide cash compensation and support the affected households to the extent possible to ensure that all affected households are compensated. The affected households will be informed well ahead of relocation schedule.

5.7 Compensation Payment Procedure

71. The nontitled APs i.e. those have no legal ownership of the affected property but socially recognised and enlisted during census and or joint verification survey on the RoW will be compensated by NWPGCL. The PMU will prepare each APs file and entitlement record.

72. Wage labourers will collect certificate from the employer which will be attested by the concerned upazilas Chairman/Ward Councilor/Mayor.

73. The entitlement record will be jointly signed by the NWPGCL and the AP with a photograph attached. The PMU will prepare payment debit voucher or cheque and those will be disbursed in public place or office of the upazilas Chairman issuing prior notice to the AP.

5.8 Grievances Redress Mechanism

74. The EA (NWPGCL in this case) will establish a project specific Grievance Redress Mechanism (GRM) having suitable grievance redress procedure to receive and facilitate resolution of affected peoples' concerns, complaints, and grievances. The GRM will allow for

grievance redress all arising from compensation, loss of livelihoods, loss of access to public infrastructure, damages to property causing from acquisition and construction related impacts (noise, disturbance etc).

75. The GRM will work utilising the following three levels:

76. **First Level – Field officers:** In case of grievances that are immediate and urgent onsite field officers (of the PMU) will provide the most easily accessible first level of contact. The officer will put the complaint in writing and record the date, nature and type of grievance. It is anticipated that field officers will be able to respond and resolve minor grievances, especially by working with on-site contractors etc. The field officer will respond (or resolve where possible) queries within two weeks. Contact phone numbers and names of the concerned PMU field officer will be posted at all construction sites at visible locations.

77. **Second Level - PMU Grievance Committee:** If no resolution or understanding is reached, the field officer files the grievance/complaint to the PMU grievance committee for it to be resolved within 15 days after filing. The PMU Grievance Committee will include: (i) a Representative of NWPGCL (i.e. Project Director) - Convener; (ii) Social Safeguard Specialist – Member; and (iii) a representative of the affected people – Member.

78. A meeting can be called, if needed, to give the AP the chance to present the concern in person. During the meeting, the PMU committee will receive, clarify and simplify the issues involved and would try its best efforts to resolve the issues to be acceptable to both the AP and the PMU. If an agreement or resolution is reached, the resolution will be signed summarizing the points of agreements. If there was no such agreement, the matter is presented to the GRC.

79. Third Level –Grievance Redress Committee. The GRC will meet at short intervals subject to the number of grievances to resolve. The complainant may present their issue to the GRC in person and will be encouraged to bring along a friend, family member of third party for support. In case of complicated cases, the GRC members can request additional information or carry out field level verifications. Resolutions should be based on consensus among members, failing which the decision may be taken on majority vote. Any decision made by the GRC must be within the purview of RP policy framework and entitlements. The GRC will function throughout the life of the project loan and will not deal with any matters pending in the court of law.

80. The GRC will be formed with following representatives:

- Representative of NWPGCL, Convener;
- Representative of the Local Government Institution (union parishad), Member;
- Local women member from union parishad, Member;
- Representative of the affected people, Member;
- Representative of the DC.

81. The APs, not satisfied from the decision of the GRC, will have their right to take the grievance to a court of law. The GRM will be continuously disseminated to people during project implementation. The project grievance procedure does not impede access to the court at any time. This includes ADB Accountability Mechanism whereby people adversely affected by ADB-financed projects can express their grievances; seek solutions; and report alleged violations of ADB's operational policies and procedures, including safeguard policies.

6. Entitlements, Assistance and Benefits

6.1 Entitlement

82. The affected persons are entitled to receive compensation for their losses. Entitlement provisions will include provisions for loss of trees and temporary income losses. The entitlement matrix is given in **Table 6.1** which summarizes the types of losses in connection with this project and the corresponding nature and scope of entitlements in accordance with the government and ADB policies.

6.2 Relocation and Income Restoration

83. The gas transmission line will pass under the land and borrow pit of RHD, roads and footpaths of KDA, land and rail line of Bangladesh Railway and a river. Rural settlements, however, will neither be affected nor relocated for construction of the gas transmission line. Some small portable shops/stall of tea, chocolate/candy, cookies, paan (betel leaf), bidi, cigarette, etc have to move due to the project, however there is enough space within the RoW and a close proximity to move as the shops need marginal space. Once the pipeline is placed, safety signage will be installed to discourage rebuilding on top of the pipeline, and the affected people will be able to continue their economic activities

84. One-time cash compensation for shifting shops and income loss for one week will be given to the shops owners. One week is estimated based on technical information and unexpected impacts will be covered by contingency. Without any official statistics on the income status of these shops, necessary data was collected through survey. The basic objective behind the income measures is to restore the economic status of the affected persons to at least the level they were enjoying prior to the project.

85. Each vulnerable household will be eligible to participate in the trust fund skill training activities to further assist in restoring incomes. Where possible, opportunities to participate in project related employment, namely unskilled work opportunities during construction of the gas transmission line will be prioritised for the participation of vulnerable households.

No	Type of Loss	Application	Entitled Person	Entitlement	Implementation Issues	Responsible Agency	
A. Structure							
A-1	Loss of structure	Business, Kiosks	APs without legal title (26 APs owning 33 shops)	 Cash compensation equivalent to replacement cost of structure (or part of structure) constructed by the AP in the RoW. Compensation will not take in to account depreciation value. APs have rights to salvage materials from structure. Provision of all taxes, registration costs and other fees incurred for replacement structure. One-time cash compensation for shifting shops per shop. One-time cash compensation (equivalent 	 Affected APs to be identified before implementation of the project. 30 days advance notice to be served. 	• NWPGCL	
A-2	Temporary loss of	Business,	Employees of Affected businesses	to one-week minimum salary) for income loss due to shifting.Compensation for lost income for one		• NWPGCL	
A-2	employment	Kiosks	(6 APs)	week during shifting transition.			
A-3	Loss of common property resources	Encroached Structures related to religious buildings	Community	 Reconstruction/ Cash Compensation at replacement cost. Ensure continued religious activities. 	 Consultation to be undertaken on management of affected structure. 	• NWPGCL	
B. Trees							
B-1	Loss of tree	Road side land of RHD and KDA	Cultivator	 For timber trees: Cash compensation equivalent at current market price of timber trees on the affected land of the RoW. For fruit trees: Cash compensation equivalent at current market price of fruit (date and palm) trees on the affected land of the RoW. 	 Mutual understanding between RHD/ KDA and NWPGCL 30 days advance notice to be served. 	• NWPGCL	

Table 6.1: Entitlement Matrix
No	Type of Loss	Application	Entitled Person	Entitlement	Implementation Issues	Responsible Agency
				 Owner of the trees will be allowed to fell and take the trees free of cost. 		
C-1	Vulnerable Households	All affected vulnerable households (13 AHs)	 (i) women headed households; (ii) household headed by persons with disabilities; (iii) households falling under the generally accepted indicator for poverty,¹² (iv) elderly headed households, (v) households who are landless, and (vi) households who are without legal title to land.¹³ 	 One-time allowance equivalent to Tk10,000/ in addition to other entitlements. Eligibility for each household to participate in trust fund skill training activities. Preference in project related employment. 	 Affected APs to be identified before implementation of the project. 	• NWPGCL
D-2	Unanticipated impacts	Affected households and individuals	Affected households and individuals	 Any unanticipated impacts identified during project implementation will be compensated in full at replacement cost and the entitlement matrix shall be revised if required in case of major unanticipated impacts found during detailed/final design. 	Unforeseen impacts will be documented and mitigated based on the legal and policy framework outlined in this RP.	• NWPGCL

 ¹² See Glossary for definition of vulnerability.
 ¹³ Not all household without legal title are vulnerable. Vulnerable status for the persons without legal title is determined based on the social impact assessment/survey which is presented in the section 2.7 of this RP.

6.3 Resettlement Budget

86. The compensation cost estimate for the project includes eligible compensation for RP implementation as per the entitlement matrix. This RP presents estimated costs for temporarily land requisition and rehabilitation of APs. The estimated cost in this budget is indicative which may require further updating after the detailed design is finalised, if there are any changes with the identified impacts. If more than 12 months passes, between this RP and the payment of compensation, costs will be revised based on the latest rate schedule and allowances will be updated in line with inflation.

87. The budget for the resettlement will be provided by NWPGCL. The appointed contractor of NWPGCL in the presence of LGI representatives, local elite and NWPGCL representatives as per their project policy will disburse cash compensation.

88. If the contractor needs temporary land for laydown purposes, these will be negotiated directly with households and mutually acceptable lease agreements established. Temporary leased land will be returned to owner rehabilitated to original or preferably better condition.

6.4 Calculation of Estimated Costs

89. The unit cost estimate and the valuation of the affected structures and trees is done based on the market price, collected at the time of census (June and August 2017). The detailed structure and asset budget in **Appendix 3**, outlines the process undertaken for identifying current market prices.

90. Compensation for primary structures situated in the RoW is estimated as Tk2,185 per sft for semi-pucca wudukhana. For secondary structure compensation is estimated as Tk768 per cft for sitting place, shop's extended platform and donation box, Tk2,000 per sft for concrete frame of entrance gate made of iron, and Tk1,190 per rft for boundary wall.

91. Compensation for trees is estimated as per types, sizes and species of trees. Irrespective of sizes, timber value of date trees and small size of palm trees are considered equivalent to fuel wood of those species. The RP budget does not consider fruit value of dates, as the native species of dates have no or very minimal market value. Fruit value of palm trees is also not considered as the palm trees are not fruit bearing.

92. Resettlement benefits i.e. shifting assistance, cash compensation for income loss and vulnerability are also included in the budget of this RP (see **Table A3.2.4 in Appendix 3**). RP implementation, and monitoring costs are added in separate lines (budget item D, E in Table 6.2) whereas cost for grievance redress is added to contingency of the budget for smoothing the RP implementation process (budget item F in Table 6.2).

93. Total estimated cost is about Tk4,319,101 (Tk4.3 million, approximately \$53,594) in which Tk1.5 million (about 40% of total cost) is for compensation of trees (Table 6.2).

SI No.	Head of budget	Total (Tk)	Total (Tk in million)	Total (\$)
A Compensation for primary and secondary structures		1,502,872	1.5	18,547
В	Compensation for trees	1,733,581	1.7	21,394
С	Other resettlement allowances	365,800	0.4	4,514
D	RP implementation costs for PMU	180,113	0.2	2,223
E	RP monitoring costs	144,090	0.1	1,778
F	Contingency @ 10% of the total	392,646	0.4	4,846
	Total Estimated Budget	4,319,101	4.3	53,303

 Table 6.2: Budget for requisition of land

Source: Census and Property Valuation Survey, CEGIS, 2017.

Currency conversion is considered as \$1 = Tk81.03 as per the rate of Bangladesh Bank on October 2017.

Cost of contingency will be used to mitigate any unavoidable circumstances (i.e. adjustment for cost increment, if necessary) which might be raised during RP implementation.

94. Segment-wise detail cost is attached in Appendix 3.

7. Institutional Arrangements

7.1 Introduction

95. This chapter describes institutional arrangements for implementing component 2: gas transmission line installation for gas supply to the Rupsha 800 MW Power Plant and 225 MW power plant of NWPGCL.

96. A steering committee, chaired by the Secretary of the Power Division, under the Ministry of Power, Energy and Mineral Resources (MPEMR), comprised representatives from Economic Relation Division (ERD), Planning Commission, and others (detailed list is presented in **Appendix 4**). Bangladesh Power Development Board (BPDB) will guide NWPGCL in this regard and monitor as well as review progress and results time to time. In order to undertake day-to-day activities a dedicated Project Management unit (PMU) will be set up in NWPGCL for this project. Full-time Project Director (PD) will supervise the project component. The PMU staffed with experienced personnel will conduct and oversee procurement, accounting, reporting, quality assurance, and social and environmental issues.

7.2 Institutional Framework for RP Implementation

97. NWPGCL will establish the necessary institutional setup for land requisition and implementation of resettlement/rehabilitation activities of the project. NWPGCL will be responsible for finalization, updating, implementation and monitoring of the resettlement plan. Core institutions responsible for land requisition and resettlement activities are described in the following sections.

7.2.1 Project Management Unit in NWPGCL

98. The NWPGCL will establish a Project Management Unit (PMU) for the implementation of the project including land requisition and resettlement. The PMU will consist of technical, financial, procurement and safeguard staff. NWPGCL will hire an Environment, Health and Safety specialist to work in the field as well as 1 temporary social safeguards officer (or consultant) to be engaged during the implementation of the RP. The PMU will be headed by a Project Director (PD) whose office will be set up within the NWPGCL head quarter (HQ) for execution of the project, HQ also includes one environment and social safeguards specialist who will provide oversight and support to field-based staff. The PMU will be responsible for implementation of the RP in terms of compensation disbursement. The PMU will carry out the following broad tasks relating to RP implementation:

- Discharge overall responsibility of planning, management, monitoring and implementation of resettlement and rehabilitation program;
- Ensure availability of budget for all activities;
- Synchronise resettlement activity and engage contractor with construction schedule;
- Supervise, manage and record all AP entitlement payments.
- Coordinate the grievance redress mechanism;
- Monitor the effectiveness of entitlement packages and payment modality.
- Coordinate monitoring of RP implementation including reporting.
- Make necessary budgetary arrangements available in advance for the preparation, updating and implementation of RP.

99. During implementation of the RP, the social staff (or consultant) of the PMU in NWPGCL will be responsible for ensuring that the draft RP is finalized and updated based on SPS 2009 of ADB, and applicable national laws and regulations. The social staff will also ensure that the RP and monitoring plan are followed and will provide technical support to PD, PMU in dealing with social issues related to the project components. The social staff will coordinate with relevant government agencies on social matters, will prepare the internal monitoring reports (refer Section 8.2) to be submitted to ADB.

100. Additional capacity building or training is not anticipated for the EA, given their experience with other ADB funded projects, implementing category-A resettlement plans.

7.2.2 Other Agencies in Land Requisition and Resettlement Process

101. In addition to the NWPGCL's PMU, there would be several other line agencies that will be responsible for land requisition, resettlement activities in the project.

102. Details on roles and responsibilities for RP activities for Component 2 of NWPGCL are given below in **Table 7.1**.

Activities				
Activity	Responsible Agency			
Project Initiation Stage and Institutional Setup	•			
Establishing PMU	NWPGCL			
Designating Safeguard Specialist in PMU	NWPGCL			
Setting up of GRC	Power Division through NWPGCL			
RP Finalization and Updating Stage				
Finalization of sites for project	NWPGCL(PMU)			
Conducting consultation/FGDs/meetings as and where necessary	NWPGCL(PMU)			
Updating of RP in case of change in design	NWPGCL(PMU)			
Finalizing compensation and entitlements per household	NWPGCL(PMU)			
Disclosure of final entitlements and rehabilitation packages	NWPGCL(PMU)			
Approval and disclosure of RP	NWPGCL and ADB			
RP Implementation Stage				
Disbursement of compensation	NWPGCL (PMU)			
Implementation of rehabilitation measures	NWPGCL (PMU)			
Consultations with APs during rehabilitation activities	NWPGCL (PMU)			
Grievances redress	NWPGCL (PMU)			
Internal monitoring (semiannual)	NWPGCL (PMU)			

Table 7.1: Institutional Roles and Responsibilities for Land Requisition and Resettlement
Activities

Note: ADB = Asian Development Bank, AP = Affected Persons, DC = Deputy Commissioner, FGD = Focus Group Discussion, GRC = Grievance Redress Committee, PMU = Project Management Unit, and NWPGCL = North-West Power Generation Company Limited.

8. Implementation Schedule

8.1 Introduction

103. RP implementation will take place over approximately one and a half (1.5) year, starting from compensation process initiation to compensation payments finalization, and semiannual monitoring reports will be prepared. The schedule will be adjusted during final design and implementation.

104. All activities related to the land requisition and resettlement for the project will ensure that all compensation payments for assets are completed prior to commencement of civil works for component 2.

105. After finalization of the design and/or change of design, if there are any significant changes the RP will be updated, and associated census verification undertaken, see **Table 8.1** below. Public consultation and grievance redress (if any from the APs) will be undertaken throughout the project but before commencement of utilization of land for the project. Monitoring will also be undertaken throughout the project.

106. The following is a tentative schedule for RP implementation of the project **(Table 8.1)**. The schedule may be adjusted during final design and implementation.

Activities	Timeline		
Draft Resettlement Plan preparation	Dec 2017		
ADB review and concurrence on draft RP	Jan 20818		
Resettlement Plan updating (if necessary: consultation, disclosure, census verification, etc.) Mar 2018			
ADB review and concurrence on the updated Resettlement Plan	Mar 2018		
Uploading of updated Resettlement Plan	Mar 2018		
Determination of entitlements & preparation of AP comp record	Jan–Feb 2018		
Payment of compensation to APs Jan–Je			
Consultation and grievance redress	Jul 2018–Mar 2020		
Site clearance for construction/installation work commencement	Jul 2018–Mar 2020		
Internal monitoring report preparation and submission (Semiannual) semiannual			
Outcome monitoring survey and reporting through semiannual reports	periodically		

Table 8.1: Schedule of Resettlement Activities of Component 2

8.2 Monitoring and Reporting

107. NWPGCL through its PMU will undertake internal monitoring and measure the progress of implementation of the RP. No external monitoring will be conducted for this project's RPs.

108. NWPGCL through its PMU will (i) monitor the progress of implementation of safeguard plans, (ii) verify compliance with safeguard measures and their progress toward intended outcomes, (iii) document and disclose monitoring results and identify necessary corrective and preventive actions in the periodic monitoring reports, (iv) follow up on these actions to ensure progress toward the desired outcomes, and (v) submit semiannual monitoring reports on safeguard measures as agreed with ADB (see indicators in **Table 8.2**) during implementation of

the RP. NWPGCL through its PMU will be responsible for managing and maintaining affected unit databases.

109. Monitoring reports documenting progress on resettlement implementation and resettlement plan completion reports will be provided by NWPGCL through its PMU to ADB for review. Semiannual monitoring reports will be posted to the ADB website.

110. Long term outcome monitoring: Affected households should be able to maintain/improve their livelihoods after being impacted. Primarily this is assessed through income, but other proxy indicators are included (see **Table 8.2** below) which can tell us about changes in livelihoods for the affected households. The PMU will refer to baseline date in the census for verification of livelihood changes and undertake a post resettlement survey based on the provided indicators. Data should be collected periodically and reported through monitoring reports on or after the end of project construction. Monitoring Indicators

111. The indicators to be monitored will include the contents of the activities and entitlement matrix. The RP contains indicators for achievement of the objectives under the resettlement program. These indicators shall be assessed for the implementation process, outcomes and impacts. Monitoring indicators are presented in **Table 8.2**.

Туре	Indicators	Indicator Explanation		
First / Second Monitoring Report	 PMU established, EHS officer and temporary social specialist engaged; Staff Training activities undertaken; Completion of IoL verification survey for all affected households (component 2) completed if needed; Final entitlements for each household recorded (table); GRM established and functioning; 	Reporting on these indicators should be included in the first and second monitoring reports together with reporting on the semiannual indicators.		
Semiannual Monitoring Indicators for Reporting	 # households (of total affected HHs) met with to discuss final entitlements # of entitlement discussions with both male and female household head met with during meeting. Number of consultation/disclosure activities undertaken this period (6 months) Number of male participants in consultation activities Number of female participants in consultation activities 	During discussion of final entitlements, both male and female household heads should be present to ensure both understand the compensation package. This should be reported on during the period of entitlement disbursement.		
	 Total number of grievances this period (6 months) Total number of grievances closed (this period) Total number of grievances remaining open (this period) 	Grievances can be large or small, if grievances are outstanding include a short explanation in the monitoring report.		
	 Total number of affected households (final number). % of total AHs received compensation payments. Amount of compensation dispersed (total). Number of affected households (by component) participating in Trust Fund training programs (men, women, vulnerable participants). 	All payments are made prior to any civil works starting. Please include an update on the % of HHs paid each period until finalized.		

Table 8.2: Monitoring and Evaluation Indicators

Туре	Indicators	Indicator Explanation
Long-term outcome indicators (periodically)	 % of affected households whose income has increased. % average income increase for affected households. % of AHs who changed their primary occupation. % of total vulnerable HHs above the poverty line. % affected female headed households who are above poverty line. % affected female headed households who changed their occupation (record type of change). % of affected households (HH head & spouse) out of total affected households agree their livelihoods are restored or improved after project impacts. # of informal vendors who established legitimate business (i.e. renting on titled land, received business license). # of affected informal vendors who have access to electricity and water. 	Affected households should be able to maintain/improve their livelihoods after being impacted. Primarily this is assessed through income, but other proxy indicators are included which can tell us about changes in livelihoods for the affected households. Refer to baseline date in the census for verification of livelihood changes. Data should be included in semiannual monitoring at end of construction period.

8.3 Reporting Arrangements

112. Monitoring report¹⁴ will be prepared and submitted by NWPGCL to ADB on a semiannual basis. The monitoring report will be disclosed at NWPGCL and ADB websites.

¹⁴ A combined monitoring report for all three components - CCPP, gas pipeline and power transmission line - can be prepared.

Appendix 1: List of Affected Assets

Table A1.1: Affected Asset in the 10 km RoW

SI No.	Affected asset	Quantity (No.)	Address	HH income (Tk/year)	HH expenditure (Tk/year)
1	Kiosk/stall	1	Aronghata, Bypass Road, Word-4, KCC, Khulna	300,000	230,000
2	Kiosk/stall	1	Aronghata, Bypass Road, Word-4, KCC, Khulna	84,000	84,000
3	Kiosk/stall	1	Lebutola More, Navy Colony Road, Word-9, KCC, Khulna	120,000	12,000
4	Kiosk/stall	1	Lebutola More, Navy Colony Road, Word-9, KCC, Khulna	96,000	96,000
5	Kiosk/stall	1	Lebutola More, Navy Colony Road, Word-9, KCC, Khulna	120,000	200,000
6	Kiosk/stall	1	Lebutola More, Navy Colony Road, Word-9, KCC, Khulna	108,000	180,000
7	Kiosk/stall	2	Goalkhali, Graveyard Road, Word-9, KCC, Khulna	144,000	96,000
8	Kiosk/stall	2	Goalkhali, Graveyard Road, Word-9, KCC, Khulna	204,000	200,000
9	Kiosk/stall	2	Goalkhali, Graveyard Road, Word-9, KCC, Khulna	180,000	180,000
10	Kiosk/stall	1	Khalishpur, Road-11, Word-9, KCC, Khulna	180,000	180,000
11	Kiosk/stall	2	Khalishpur, Road-11, Word-9, KCC, Khulna	264,000	200,000
12	Kiosk/stall	1	Khalishpur, Road-11, Word-9, KCC, Khulna	120,000	120,000
13	Kiosk/stall	1	Khalishpur, Road-11, Word-9, KCC, Khulna	348,000	280,000
14	Kiosk/stall	2	Khalishpur (Kodomtola), BIDC road, Word-12, KCC, Khulna	120,000	120,000
15	Sitting Place	1	Khalishpur (Kodomtola), BIDC Road, Word-12, KCC, Khulna	0	0
16	Kiosk/stall	1	Khalishpur (Kodomtola), BIDC Road, Word-12, KCC, Khulna	276,000	250,000
17	Kiosk/stall	1	Khalishpur (Kodomtola), BIDC Road, Word-12, KCC, Khulna	96,000	96,000
18	Kiosk/stall	1	Khalishpur (Kodomtola), BIDC Road, Word-12, KCC, Khulna	180,000	180,000
19	Cobbler's toolbox	1	Khalishpur (Kodomtola), BIDC Road, Word-12, KCC, Khulna	84,000	84,000
20	Wudukhana and donation box	2	Alomnagor, BIDC Road, Word-12, KCC, Khulna	0	0
21	Kiosk/stall	1	Alomnagor, BIDC Road, Word-12, KCC, Khulna	228,000	220,000
22	Boundary wall, sitting	8	Khalishpur (Kodomtola), BIDC Road, Word-12, KCC, Khulna	0	0

SI No.	Affected asset	Quantity (No.)	Address	HH income (Tk/year)	HH expenditure (Tk/year)
	place for wudu and entrance gate				
23	Kiosk/stall	1	Lebutola More, Navy Colony Road, Word-9, KCC, Khulna	192,000	180,000

Note: HH = household, KCC = Khulna City Corporation.

Table A1.2: Details of Affected Structures in the RoW of 10 km

Turne of etrustures		Roof/main material of	Meas	urement
Type of structures	Affected structure	structure	Unit	Size/No
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	144
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	56
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	28
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	80
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	96
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	48
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	40
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	108
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	35
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	160
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	48
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	80
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	48
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	48
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	120
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	96
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	200
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	70
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	105
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	48
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	48
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	120
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	200
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	48
Commercial	Cobbler's tool box	Wooden	sft	8
Commonproperty resource (Khulna City Polytechnic, encroached into KDA area)	Sitting place (encroached)	Pucca	cft	1125
Commonproperty resource (BaitulMamurJame	Wudukhana (encroached)	Semi pucca	sft	120
Mosque), encroached into KDA area	Donation box (encroached)	Pucca	cft	14

	Affected structure	Roof/main material of	Measurement	
Type of structures	Affected structure	structure	Unit	Size/No
Commonproperty resource (Newsprint	Sitting place for wudu (encroached)	Pucca	No.	6
SromikBhabonJameMosqu e), encroached into KDA	Boundary wall (encroached)	Pucca (5")	rft	40
area	Gate (encroached)	Steel	sft	150

Table A1.3: Affected Trees in the 10 km RoW

SI No.	Affected asset	Address
1	Tree	Aronghata, Bypass Road, Word-4, KCC, Khulna
2	Tree	Goalkhali, Graveyard Road, Word-9, KCC, Khulna

SI. No	Affected asset	Quantity (No.)	Address	Income of HH in Taka (Per year)	Expenditure of HH in Taka (Per year)
1	Kiosk/stall	1	Mohsin College Gate, Mohsin College Road, Word No. 10, Khalishpur, Khulna	180,000	144,000
2	Kiosk/stall	3	KhalishpurMeghaMorh, Mohsin College Road, Word No 10, Khalishpur, Khulna	216,000	150,000
3	Kiosk/stall	3	KhalishpurMeghaMorh, Mohsin College Road, Word No 10, Khalishpur, Khulna	350,000	342,000
4	Kiosk/stall	1	Wonderland Park ,18 Park Road,Word No 10, Khalishpur, Khulna	144,000	120,000
5	Furniture shop	1	KhalishpurMeghaMorh, Mohsin College Road, Word No 10, Khalishpur, Khulna	144,000	144,000
6	Staircase & decorative platform	2	KhalishpurMeghaMorh, Mohsin College Road, Word No 10, Khalishpur, Khulna	264,000	240,000
7	Sitting place	1	Mohsin College Gate, Mohsin College Road, Word No. 10, Khalishpur, Khulna	0	0

Table A1.4: Affected Asset in the 2.0 km RoW

		Roof/main material of	Measurement	
Type of structures	Affected structure	structure	Unit	Size/No
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	96
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	135
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	270
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	96
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	120
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	64
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	225
Commercial	Kiosk/stall/shop	Tin (kutcha)	sft	80
Commercial	Furniture shop	Tin (kutcha)	sft	240
Commercial	Staircase	Iron	sft	49
Commercial	Decorative platform	Pucca	cft	120
Common property resource in KDA area	Sitting place	Pucca	cft	120

Table A1.5: Details of Affected Structures in the RoW of 2.0 km

Table A1.6: Affected Trees in the 2.0 km RoW

SI No.	Affected asset	Address
1	Tree	KhalishpurMeghaMorh, Mohsin College Road, Word No 10, Khalishpur, Khulna

Appendix 2: List of Participants of Consultation Meetings

Name	Male	Female	Occupation	Address
Engr. AhsanulHaquePatoary	1		GM, SGCL	Sonadanga, Khulna
Engr. Moshiur Rahman	1		NWPGCL official	Khalishpur, Khulna
Md. RoniMorol	1		Agriculture	Aronghata
Md. Matiur Rahman	1		Business	Aronghata
Md. Azad Hossain	1		Business	LebutolaMorh
Ojifa Begum		1	Business	LebutolaMorh
Md. Jaber Ali	1		Business	LebutolaMorh
Monirul Islam	1		Business	LebutolaMorh
Rubel Hossain	1		Business	Goalkhali
Md. Kamal Sheikh	1		Business	Goalkhali
Hasina Begum	1	1	Business	Goalkhali
Md. Abdul Mannan	1		Business	Khalishpur
Md. Mujibur Rahman	1		Business	Khalishpur
Md. ShamsulAlom	1		Business	Khalishpur
Md. Abdur Rashid	1		Business	Khalishpur
Md. AnowarMunshi	1		Business	Khalishpur, (Kodomtola)
Md. Sattar Islam	1		Business	Khalishpur, (Kodomtola)
Md. Rajon	1		Business	Khalishpur, (Kodomtola)
Md. AbdurRahim	1		Business	Khalishpur, (Kodomtola)
Nironjon	1		Business	Khalishpur, (Kodomtola)

Table A2.1: List of the Participants

Appendix 3: Detailed Cost Estimate

A3.1 Gas Transmission Line of 10 km

SI No.	Head of budget	Total (Tk)	Total (\$)	Total (Tk in million)	Total (\$ in million)
А	Compensation for primary and secondary structures	1,318,552	16,361	1.3	0.016
В	Compensation for trees	1,283,243	15,923	1.3	0.016
С	Other resettlement benefits	290,400	3,603	0.3	0.004
D	Operation cost for RP	144,610	1,794	0.1	0.002
E	RP monitoring costs	115,688	1,436	0.1	0.001
F	Contingency @ 10% of the total	315,249	3,912	0.3	0.004
	Total Estimate cost in Tk	3,467,741	43,029	3.5	0.04

Table A3.1.1: Summary Budget for 10 km Gas Transmission Line

Table A3.1.2: Replacement Cost of Primary and Secondary Structures

Α	Types	Quantity in sft/cft/rft	Rate in Tk per sft/cft/rft	Estimated amount of compensation in Tk		
	Primary struct	ture				
1	Semi-pucca wudukhana (sft)	120	2,185	262,200		
	Secondary structure					
2	Sitting place and donation box (pucca in cft)	1,139	768	874,752		
3	Wudukhana (6 nos) (cft)	20	700	14,000		
4	Gate (concrete frame) (sft)	60	2,000	120,000		
5	Boundary wall 5" pucca (rft)	40	1,190	47,600		
	Subtotal of A			1,318,552		

Note on Structure Cost Determination: A Property Valuation Survey was conducted for collecting current market prices (CMP) of structures from the local shopkeepers of CI sheet, rod, cement, wood, etc. and knowledgeable persons (such as teacher, businessmen, etc.). Labor costs and other associated cost for construction of structures were also included in determining the replacement cost of structures. Government/Public Works Department (PWD) rate and the rate determined in a recent development project (Bangladesh: Natural Gas Infrastructure and Efficiency Improvement Project, RP, BAN 45203-006, 2016) were also considered. The higher rate between the two rates of PWD and CMP was considered for calculating the replacement cost of structures.

В	Types	Quantity in nos.	Rate in Tk	Estimated amount in Tk				
B.1	Timber trees							
1	Big	21	18,090	379,887				
2	Medium	24	11,073	265,750				
3	Small	130	4,600	598,051				
4	Plant	120	32	3,854				
	Subtotal	295		1,247,543				
B.2	Fuel wood (fruit trees	are considered a	as fuel wood) [•]	*				
1	Big	5	2,500	12,500				
2	Medium	2	2,000	4,000				

В	Types	Quantity in nos.	Rate in Tk	Estimated amount in Tk
3	Small	24	800	19,200
4	Plant	0	30	-
	Subtotal	31		35,700
	Subtotal of C	326		1,283,243

* Date and Palm trees are considered as fuel wood trees as fruit value of those trees are not considered in RP budget. CMP of trees was collected from field. In some cases rates from Bangladesh: Natural Gas Infrastructure and Efficiency Improvement Project, RP, BAN 45203-006, 2016 were also considered.

с	Types	Quantity in nos.	Rate in Tk per nos.	Estimated amount in Tk
1	Shifting cost @Tk1,000 for portable shops and a gate	26	1,000	26,000
2	Cash compensation for shop income loss (one week at Tk5,600)	24	5,600	134,400
3	Compensation for vulnerability (women headed, elderly headed, poor & landless HHs) @ Tk10,000	13	10,000	130,000
	Subtotal of C			290,400
	Total of A to C			2,892,195
D	Operation cost for RP			144,610
Е	RP monitoring cost			115,688

A3.2 Gas Transmission Line of 2.0 km

Table A3.2.1: Summary Budget for 2.0 km Gas Transmission Line

SI No.	Head of budget	Total (Tk)	Total (\$)	Total (Tk in million)	Total (\$ in million)
А	Compensation for secondary structures	184,320	2,287	0.2	0.002
В	Compensation for trees	450,338	5,588	0.5	0.006
С	Other resettlement benefits	75,400	936	0.1	0.001
D	Operation cost for RP	35,503	441	0.0	0.000
E	RP monitoring cost	28,402	352	0.0	0.000
F	Contingency @ 10% of the total	77,396	960	0.1	0.001
	Total Estimate cast in Tk	851,360	10,564	0.9	0.01

Table A3.2.2: Replacement Cost of Secondary Structures

Α	Types	Quantity in cft	Rate in Tk Per cft.	Estimated amount of Compensation in Tk
1	Sitting place and decorative platform (pucca in cft)	240	768	184,320
	Subtotal of secondary structure	240		184,320

В	Types	Quantity in nos.	Rate in Tk	Estimated amount in Tk	
Timber trees					
1	Big	12	18,090	217,078	
2	Medium	14	11,073	155,021	
3	Small	17	4,600	78,207	
4	Plant	1	32	32	
	Subtotal of trees	44		450,338	

Table A3.2.3: Compensation for Trees on Government Land

Table A3.2.4: Other Costs including Resettlement Benefits

с	Туреѕ	Quantity in nos.	Rate in Tk Per nos.	Estimated amount in Tk
1	Shifting cost @Tk1,000 for portable shops and one (1) iron staircase	10	1,000	10,000
2	Cash compensation for shop income loss (one week at Tk5,600)	9	5,600	50,400
3	Compensation for loss of income (salary) of employees	6	2,500	15,000
	Subtotal of C			75,400
	Total of A to C			710,058
D	Operation cost for RP			35,503
Е	RP monitoring cost			28,402

Appendix 4: Steering Committee

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Composition of Project Steering Committee (PSC)

01	Secretary, Concerned Ministry/Division	Chairperson
02	Joint Chief (Planning Wing) of the Concerned Ministry/ Division	Member
03	Joint Secretary (Development) of the Concerned Ministry/Division	Member
04	Head of the Concerned Implementing Agency/Agencies	Member
05	Deputy Chief, Concerned Ministry/Division	Member
06	Representative of NEC-ECNEC & Coordination Wing of the Planning Division	Member
07	Representative of the Concerned Wing/Sector-Division of the Planning Commission	Member
08	Representative of Concerned Sector of IMED	Member
09	Representative of the Programming Division, Planning Commission	Member
10	Representative of Finance Division	Member
11	Representative of Economic Relation Division (For Foreign Aided Project)	Member
12	Representative from the Planning Branch of Concerned Implementing Agency	Member
13	Project Director	Member
14	Concerned Senior Assistant Chief/Assistant Chief of the Ministry/Division	Member Secretary

Terms of Reference:

- To review the recommendation of the project implementation committee for addressing problems that arise during project implementation and to take decision accordingly.
- To give guideline or to formulate policies which required for implementing project activities
- Any other matter related to project implementation.
- The committee will meet at least once in every three months.
- The committee may co opt members, if necessary.

Appendix 5: Photographs of Identified Affected Entities in the Project RoW Photograph 5.1: Entities in the RoW of 10 km



RHD borrow pit partially earth filled



Tea stall at Khulna city bypass (RHD)





Affected trees in city bypass highway (RHD)



kiosk/shop at Khulna city bypass (RHD)



Tea stalls beside Navy Colony



Small kiosks/shops in front of the Goalkhali Graveyard





Small kiosks/shopsat the beginning of BADC road



A kiosk/shop and a Cobbler's tool box (red circled)



Sitting place of Khulna City polytechnic



Affected trees in KDA road



KDA road side land (left side of red line is affected area)



Donation box and wudukhana (partially) in BaitulMamurJame Mosque



Boundary wall and entrance gate of Newsprint SromikBhabanJameMonque





Road crossing at different places

Photograph 5.2: Entities in the RoW of 2.0 km





Alternative route selection and finalization by SGCL, NWPGCL and CEGIS representatives



Affected trees



Affected kiosks/shops

Road crossing



Affected kiosks/shops





Affected kiosks/shops

Affected furniture shop





Affected staircase along with the extended entrance platform of a shop





Consultation with the stakeholders at Khalishpur