

# Project Administration Manual

Project Number: 50161-003  
Loan Number: {LXXXX}  
May 2018

People's Republic of Bangladesh: Rupsha  
800-Megawatt Combined Cycle Power Plant

## ABBREVIATIONS

ADB	–	Asian Development Bank
CCGT	–	combined cycle gas turbine
CCPP	–	combined cycle power plant
CO <sub>2</sub>	–	carbon dioxide
EIA	–	environmental impact assessment
EMP	–	environmental management plan
EPC	–	engineering, procurement and construction
ERP	–	enterprise resource planning
FMA	–	financial management assessment
FY	–	fiscal year
ICS	–	individual consultant selection
IDB	–	Islamic Development Bank
IUCN	–	International Union for Conservation of Nature
JFPR	–	Japan Fund for Poverty Reduction
km	–	kilometer
kV	–	kilovolt
kWh	–	kilowatt-hour
LNG	–	liquefied natural gas
MW	–	megawatt
NWPGCL	–	North-West Power Generation Company Limited
PAM	–	project administration manual
PMC	–	project management consultancy
QCBS	–	quality- and cost-based selection
SCS	–	stakeholder communication strategy
SOE	–	statement of expenditures

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### **Project Administration Manual Purpose and Process**

The project administration manual (PAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with the policies and procedures of the government and Asian Development Bank (ADB). The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.

North-West Power Generation Company Limited (NWPGCL) is wholly responsible for the implementation of ADB-financed projects, as agreed jointly between the borrower and ADB, and in accordance with the policies and procedures of the government and ADB. ADB staff is responsible for supporting implementation including compliance by NWPGCL of its obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At loan negotiations, the borrower and ADB shall agree to the PAM and ensure consistency with the loan agreement. Such agreement shall be reflected in the minutes of the loan negotiations. In the event of any discrepancy or contradiction between the PAM and the loan agreement, the provisions of the loan agreement shall prevail.

After ADB Board approval of the project's report and recommendations of the President (RRP), changes in implementation arrangements are subject to agreement and approval pursuant to relevant government and ADB administrative procedures (including the Project Administration Instructions) and upon such approval, they will be subsequently incorporated in the PAM.

## I. PROJECT DESCRIPTION

### A. Rationale

1. Bangladesh has the eighth largest population and is the 10th most densely populated country in the world.<sup>1</sup> The country has achieved consistent and steady economic growth, with real gross domestic product estimated at 6.1% in fiscal year (FY) 2014, 6.6% in FY2015, and 7.1% in FY2016.<sup>2</sup> The structure of the Bangladesh economy is gradually shifting from agriculture to manufacturing and services. The government's strategy for development in the medium to long term focuses on four priorities: (i) accelerating growth to 7.5% per year; (ii) making this growth more inclusive, pro-poor, and environmentally sustainable; (iii) reducing the poverty rate from 24.8% to 18.6% and the extreme poverty from 12.9% to about 8.9%; and (iv) providing productive jobs for all new entrants to the labor force by 2021.<sup>3</sup>

2. Despite the economic success, the country faces major challenges in its effort to maintain the growth trend and move closer to upper middle-income status because of infrastructure deficiencies. Bangladesh ranks low in infrastructure quality (behind India, Pakistan, and Sri Lanka), and as such, addressing infrastructure deficiencies is a top priority for the government.<sup>4</sup> A major challenge is to provide modern and affordable energy services to those who lack access. Inadequate energy could result in a loss of productivity and competitiveness and become a constraint to faster growth and greater investment in the short to medium term. To mitigate this constraint and sustain Bangladesh's economic momentum, the government has prepared an investment plan to increase power generation capacity, as well as improve and extend the power transmission and distribution network, with the aim of achieving universal access to grid-connected electricity by 2021.

3. **Sector overview.** The power sector in Bangladesh is characterized by recurring shortages of electricity generating capacity in the face of ever-rising demand in a growing economy. In FY2015, per capita electricity consumption was 310 kilowatt-hours (kWh); this was lower than most of the other countries in South Asia, indicating that power sector infrastructure facilities in Bangladesh require significant capacity additions.<sup>5</sup> In FY2017, peak demand was estimated at 10,400 MW while available generation capacity was 9,479 MW. Net peak demand is expected to exceed 13,300 MW by 2020 and 19,900 MW by 2025 while existing generation capacity will gradually retire and need replacement. Bangladesh's power generation expansion plan intends to provide (i) the required generation capacity to meet this increasing demand at least cost; and (ii) sufficient generation capacity to meet the government's electrification goals, including delivering services to segments of the population currently not connected to grid electricity, and required reserve margins.<sup>6</sup> In tandem with increased power generation capacity, investments in the transmission network are required to address transmission bottlenecks for the evacuation of bulk power from power stations to major load centers. Therefore, at the

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<sup>1</sup> World Bank. <https://data.worldbank.org/country/bangladesh> (accessed 1 March 2018). As of 2016, Bangladesh had an estimated population of 162 million people and a population density of 1,252 people per square kilometer.

<sup>2</sup> Bangladesh Bureau of Statistics. <http://www.bbs.gov.bd/> (accessed 1 March 2018).

<sup>3</sup> Government of Bangladesh, Planning Commission. 2015. *7<sup>th</sup> Five Year Plan FY2016–FY2020: Accelerating Growth and Empowering Citizens*. Dhaka.

<sup>4</sup> World Economic Forum. 2017. *The Global Competitiveness Report, 2017–2018*. Geneva. Bangladesh was ranked 111th of 137 countries.

<sup>5</sup> Annual per capita consumption levels reported in 2015 by other countries in the region were as follows: Bhutan 3,039 kWh, India 800 kWh, Maldives 558 kWh, Sri Lanka 530 kWh, and Nepal 140 kWh.

<sup>6</sup> Government of Bangladesh; Ministry of Power, Energy and Mineral Resources; Power Division. 2016. *Power System Master Plan 2016*. Dhaka.

government's request, the proposed Southwest Transmission Grid Expansion Project<sup>7</sup> will be submitted for consideration by ADB in July 2018.

4. **Energy security.** Domestic natural gas is the dominant fuel in power generation in Bangladesh. In 2016, 62% of the country's electricity was generated by gas-fired power stations while the remainder was based on furnace oil (21.3%), diesel (8.2%), power imports (4.9%), hydropower (1.9%), and coal (1.6%). However, domestic gas reserves are rapidly declining and the growth in gas production has not kept up with increasing demand for power generation and other industrial, commercial, and household consumption. Current reserves are likely to be fully depleted by 2030, and domestic gas exploration efforts are yet to yield any promising results.

5. To address the problem of declining domestic gas reserves and ensure energy security, importing liquefied natural gas (LNG) will play a pivotal role. LNG is a cleaner fuel that burns at a higher efficiency in modern combined cycle power plants, leading to lower environmental emissions, including carbon dioxide. Additionally, production costs of electricity using LNG are now more competitive compared with many conventional fuels. The Power System Master Plan 2016 (footnote 6) indicates that equal proportions of coal-fired and gas-fired generation result in least economic cost on a per kWh basis in the long term. Accordingly, the project is designed to use dual fuel gas-fired combined cycle power plant technology.<sup>8</sup>

6. The government has executed two separate terminal use and implementation agreements with Excelerate Energy L.P. and Summit Power International Ltd. for the construction and operation of Bangladesh's first and second LNG import terminals near Maheshkhali Island in the Bay of Bengal. These terminals will enable the government to procure LNG from international gas markets, which will supplement the country's declining domestic natural gas reserves. The government has already signed a long-term contract with RasGas Company (Qatar) to supply 2.5 million tons of LNG per annum over 15 years, commencing in 2018. The LNG terminals will be constructed in time to receive the first LNG delivery within 2018. Given that the government has provided written assurance to supply gas to the Rupsha power plant from the Maheshkhali LNG terminals, the project will significantly contribute to reducing the gap between electricity demand and supply in Bangladesh.

7. **Weak institutional capacity.** Technical and financial management of electricity utilities is largely based on traditional practices, with limited use of modern management techniques supported by information management systems. This leads to poor resource allocation and inefficient reporting. Power generation, which accounts for the highest share of the cost of electricity, needs to be managed by specialists with hands-on training in controlling the process flow in each power plant, including the use of modern power plant operations simulators. Otherwise, power plant operator training is limited to classroom sessions and to trainings provided by power plant contractors during commissioning of new power plants.

8. **ADB sector experience and assistance program.** The Asian Development Bank (ADB) is a key development partner in the energy sector of Bangladesh and has been actively supporting investments in seven broad thematic areas: (i) promoting a commercial orientation for power sector entities, (ii) promoting investments in power generation, (iii) removing transmission constraints, (iv) expanding access to electricity, (v) increasing gas production capacity and mobilizing investments to gas production, (vi) improving the gas transmission and distribution network, and (vii) improving the governance and regulatory framework. ADB has strongly

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<sup>7</sup> The project is included in ADB. 2017. *Country Operations Business Plan: Bangladesh, 2018–2020*. Manila.

<sup>8</sup> The Rupsha power plant is designed as dual fuel plant. It will operate on natural gas as the primary fuel, and high-speed diesel as an emergency backup fuel.

contributed to promoting far-reaching energy sector reforms, especially in the power sector and private sector participation. Through a series of reform-linked projects, ADB helped the government vertically unbundle the power sector entities and set of new companies with firm commercial bases for power distribution, transmission, and generation. Financing was also provided for the newly set up companies to increase generation capacity, augment transmission systems, and rehabilitate distribution networks. Also, ADB interventions have resulted in issuance of gas and electricity tariff regulations.

9. Per covenants stipulated in the draft loan agreement for this project, ADB will continue its policy dialogue with the government to pursue further reform actions to strengthen the gas pricing policy and regular electricity tariff revisions with the active involvement of the Bangladesh Energy Regulatory Commission. The project is in line with ADB's country partnership strategy for Bangladesh, 2016–2020,<sup>9</sup> supporting the government's vision of higher, more inclusive, and sustainable economic growth and investments to address infrastructure constraints. The country partnership strategy recognizes that achieving energy security through policy reforms is the key to achieving accelerated growth. The project also complements activities of other major development partners in Bangladesh.<sup>10</sup>

10. **Value added by ADB assistance.** The project builds upon ADB's strong and sustained presence in the power sector of Bangladesh and embraces ADB's sector knowledge and synergistic approach in developing all energy subsectors. Complementing ongoing massive investments in transmission and distribution infrastructure, this project is an integral part of the government's plan to ensure energy security for its population.

11. ADB is a pioneer in harnessing clean and efficient power generation technology; the ADB-financed project design will ensure that the Rupsha power plant will use the latest proven combined cycle technology, which offers the highest efficiency to convert gas to electricity. Further, the power plant is designed to use the latest zero liquid discharge technology making it the first of its kind in Bangladesh.<sup>11</sup> ADB will also add value through capacity building. This project will facilitate operator training and will finance a high-level technology power plant operations training simulator to be installed at NWPGL. The project will also finance the implementation of a modern enterprise resource planning (ERP) system to facilitate improved information flow, financial control, and decision-making. In addition, the proposed Japan Fund for Poverty Reduction (JFPR) grant under the project will pilot test innovative socially inclusive and gender-sensitive development programs for communities in the project area (para. 16). Activities to be financed by the grant will focus on vulnerable households and women, with a view to improving living standards.

## **B. Impact and Outcome**

12. The project is aligned with the following impact: energy security improved, and electricity supply increased.<sup>12</sup> The project will have the following outcome: availability of efficient and cleaner energy increased.

<sup>9</sup> ADB. 2016. *Country Partnership Strategy: Bangladesh, 2016–2020*. Manila.

<sup>10</sup> ADB coordinates and cofinances projects in the energy sector with major development partners, including Agence Française de Développement, the European Investment Bank, the Islamic Development Bank (IDB), the Japan International Cooperation Agency, German development cooperation through KfW, and the World Bank. Development Coordination (accessible from the list of linked documents in Appendix 2).

<sup>11</sup> Zero liquid discharge wastewater technology utilizes the most advanced technological water treatment processes to purify and recycle liquid waste at the end of the industrial process, leaving zero discharge.

<sup>12</sup> Government of Bangladesh, Ministry of Planning, Planning Commission. 2012. *Perspective Plan of Bangladesh, 2010–2021: Making Vision 2021 a Reality*. Dhaka.

### C. Outputs

13. **Output 1: Efficient gas-fired power generation increased.** This will be achieved through the design, supply, installation, and commissioning of the new Rupsha 800 MW combined cycle power plant. Combined cycle technology provides the best efficiency among all power-generating technologies. It enables the power plant to be built in stages, with the ability to commission the gas turbines in 2 years, which is useful to meet the ongoing capacity deficit in Bangladesh's power system. Khulna city, where the Rupsha power plant will be based, is served by the national gas transmission network, enabling domestic or imported gas to be readily supplied.<sup>13</sup>

14. **Output 2: Energy transfer systems upgraded.** For gas supply to the Rupsha power plant, the project will construct (i) a 10-kilometer (km), 24-inch gas distribution pipeline to connect the Khulna city gas station to the Rupsha power plant; and (ii) an additional 2 km, 20-inch gas pipeline (offtake) from the Rupsha power plant to NWPGL's existing 225 MW power plant at Khulna, which is currently operating on high-speed diesel (HSD). The project will replace the HSD at the Khulna power plant and provide a stable gas supply for its operation, resulting in significant environmental, economic, and financial benefits. To transfer generated electricity from the Rupsha power plant to the existing Khulna south grid substation, the project will finance construction of a 230-kilovolt switchyard at the Rupsha power plant site and 29 km of 230-kilovolt high-capacity double-circuit transmission lines.

15. **Output 3: Institutional capacity of North-West Power Generation Company Limited strengthened.** This will be achieved through (i) implementation and operation of an ERP system; (ii) supply and installation of a universal power plant operations training simulator; and (iii) on-the-job training for NWPGL staff in (a) project management, implementation, and supervision; (b) monitoring and evaluation; (c) operation and maintenance; (d) environment and social safeguards; (e) gender equity; and (f) effective project communications.

16. **Output 4: Socially inclusive development of communities neighboring the project site pilot tested.** The project will provide grant financing to improve living standards of communities in the project area by (i) increasing awareness on safe and efficient use of electricity; (ii) delivering capacity building trainings on livelihood activities and employment opportunities; and (iii) installing a 10-kilowatt solar system, two information technology laboratories, and two science laboratories in schools near the Rupsha power plant.

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<sup>13</sup> Selected location (on the bank of the Bhairab river) for the Rupsha power plant, makes available make-up water for cooling. It also allows for delivery of major power plant equipment by river barge.



## II. IMPLEMENTATION PLANS

### A. Project Readiness Activities

**Table 1: Project Readiness Activities**

Indicative Activities	Month 2017										Month 2018									Responsible Unit
	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9		
Advance contracting actions	X																			NWPGCL
Retroactive financing actions															X					NWPGCL
Establish project implementation arrangements	X																			NWPGCL
ADB Board approval															X					ADB
Loan signing																	X			ERD and ADB
Government legal opinion provided																		X		ERD / NWPGCL
Government budget inclusion																X				ERD
Loan effectiveness																		X		ERD / ADB

ADB = Asian Development Bank, ERD = Economic Relations Division, NWPGCL = North-West Power Generation Company Limited.

Source: Asian Development Bank.



Activities	Year 2017				Year 2018				Year 2019				Year 2020				Year 2021				Year 2022				
	Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Project management and construction supervision consultant																									
Pre-qualification		■																							
Selection, evaluation, and award			■	■	■																				
Project management activities						■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Consultants' project completion report																								■	
ERP and IT consultant																									
Selection, evaluation, and award						■	■																		
Preparation of implementation plan for ERP phase 2							■	■	■																
Implementation consultant for socially inclusive development																									
Selection, evaluation, and award											■														
Deliver training to teachers and students											■	■													
Deliver technical skills training to communities												■	■												
Solar PV, and equipment for IT and science laboratories																									
Bidding, evaluation, and award									■	■															
Installation and commissioning												■													
External monitoring and validation of implementation and monitoring of EMP and RP																									
Selection, evaluation and award							■	■																	
Monitoring and validation activities								■		■		■		■		■		■		■		■		■	
Land transfer and implementation of RP				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
EMP key activities							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Gender action plan key activities							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Communication strategy key activities							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
ADB's project review missions										■		■		■		■		■		■		■		■	
ADB's mid-term review															■										
Project completion report																								■	

ADB = Asian Development Bank, EMP = environmental management plan, ERP = enterprise resource planning, GT = gas turbine, IT = information technology, NWPGL = North-West Power Generation Company Limited, PV = photovoltaic, RP = resettlement plan, ST = steam turbine.

Source: ADB.

### III. PROJECT MANAGEMENT ARRANGEMENTS

#### A. Project Implementation Organizations: Roles and Responsibilities

**Table 3: Project Implementation Organizations: Roles and Responsibilities**

Project Implementation Organizations	Management Roles and Responsibilities
Ministry of Finance	<ul style="list-style-type: none"> <li>• Will enter into the loan agreement with ADB and on-lend the ADB loan to NWPGL</li> <li>• Oversight of fund flow</li> </ul>
Power Division, Ministry of Power, Energy and Mineral Resources	<ul style="list-style-type: none"> <li>• Establish the project steering committee and provide guidance and supervision of project activities</li> <li>• Conduct quarterly meetings to review project progress</li> <li>• Review progress reports from NWPGL</li> <li>• General oversight of project activities</li> </ul>
Executing Agency: North-West Power Generation Company Limited	<ul style="list-style-type: none"> <li>• Establish project management unit (PMU) headed by a project director; provision of counterpart staff for efficient operation of the PMU</li> <li>• Provide operational support and budget for project activities and for PMU's activities</li> <li>• Higher-level coordination with government and regulatory agencies, and with partner agencies (PGCB and SGCL) for successful implementation of the project</li> <li>• Safeguards implementation</li> <li>• Monitoring and evaluation of project activities and outputs including periodic review</li> <li>• Dissemination of project activities and outputs</li> <li>• Quality assurance of project outputs</li> <li>• Provide progress reports to the Steering Committee</li> <li>• Provide various reports to ADB</li> </ul>
Project Management Unit of NWPGL	<ul style="list-style-type: none"> <li>• Undertake day-to-day implementation activities</li> <li>• Direct project management and construction supervision consultants, and capacity building consultants, to focus on tasks assigned to them, review performance and progress reports</li> <li>• Prepare bid documents, manage the bidding process, submit to ADB for required clearances</li> <li>• Implement the project design, procurement and safeguards implementation activities. Responsible for preparation and submission of withdrawal applications and meeting reporting requirements including audit reports and financial statements</li> <li>• Finalizing surveys and detailed designs, update safeguards documents, preparation of semi-annual safeguard monitoring reports, and submission to ADB on time</li> <li>• Update the environment and resettlement documents in case of unanticipated impacts, prepare corrective action plans, and update documents</li> <li>• Responsible for overall project management including procurement, accounting, quality assurance, social and environmental safeguards, and coordination with government agencies</li> </ul>
Sundarban Gas Company Limited	<p>Under the Memorandum of Understanding signed between SGCL and NWPGL for the project, SGCL will:</p> <ul style="list-style-type: none"> <li>• Provide staff and resources to the joint PMU established with NWPGL</li> </ul>

Project Implementation Organizations	Management Roles and Responsibilities
	<ul style="list-style-type: none"> <li>• Support NWPGL in procurement of material for the gas pipelines and associated facilities</li> <li>• Construct the pipeline and associated facilities, commission and test, in readiness for the scheduled commissioning dates of the first generating unit</li> </ul>
Power Grid Company of Bangladesh	Under the Memorandum of Understanding signed between PGCB and NWPGL for the project, PGCB will: <ul style="list-style-type: none"> <li>• Assist PMU of NWPGL in procurement, construction and commissioning of the transmission interconnection</li> <li>• Review bid documents to procure transmission line, contractors and consultants</li> <li>• Review line route, line design, tower and tower foundation design, and relevant material, and approve prior to construction</li> </ul>
ADB	<ul style="list-style-type: none"> <li>• Undertake regular project reviews and facilitate in implementation of the project including compliance by the executing agency of obligations and responsibilities for project implementation</li> </ul>
Contractors	<ul style="list-style-type: none"> <li>• Implement the project in accordance with the design guidelines, and the required safeguards stated in project documents</li> <li>• Safeguards implementation</li> </ul>
Consultants	<ul style="list-style-type: none"> <li>• Provide services in a timely manner</li> </ul>

ADB = Asian Development Bank, NWPGL = North-West Power Generation Company Limited, PGCB = Power Grid Company of Bangladesh, SGCL = Sundarban Gas Company Limited.

Source: Asian Development Bank.

## B. Key Persons Involved in Implementation

### Executing Agency

North-West Power Generation  
Company Limited

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### Asian Development Bank

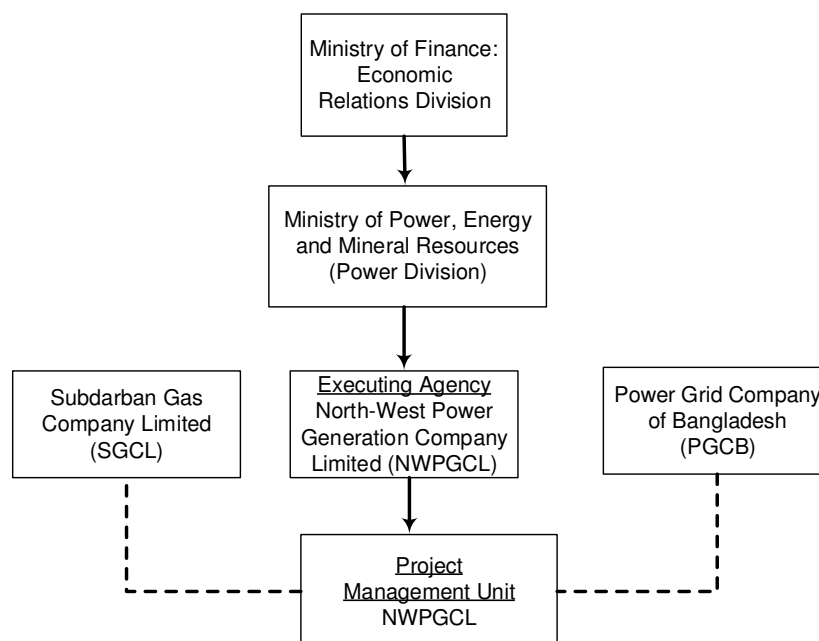
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### C. Project Organization Structure



## IV. COSTS AND FINANCING

17. The project is estimated to cost \$1,140 million. The investment plan is summarized in the Table 4 below.

**Table 4: Summary Cost Estimates**  
(\$ million)

Item	Amount <sup>a</sup>
<b>A. Base Cost<sup>b</sup></b>	
1. Efficient gas-fired power generation increased	880.6
2. Energy transfer systems upgraded	35.7
3. Institutional capacity of North-West Power Generation Company Limited strengthened	31.5
4. Socially inclusive development of communities neighboring the project site pilot tested.	1.4
<b>Subtotal (A)</b>	<b>949.2</b>
<b>B. Contingencies<sup>c</sup></b>	<b>95.2</b>
<b>C. Financial Charges During Implementation<sup>d</sup></b>	<b>95.6</b>
<b>Total (A+B+C)</b>	<b>1,140.0</b>

<sup>a</sup> Includes taxes and duties of \$152.9 million to be financed by the government from the project's counterpart funding by cash contribution. Taxes and duties under the JFPR grant will be financed by the JFPR.

<sup>b</sup> In October 2017 prices based on the development project proposal prepared by the executing agency.

<sup>c</sup> Physical contingencies were computed at 4% of base costs. Price contingencies with respect to costs in foreign currency were computed at 1.4% for 2017 and 1.5% for 2018 onwards. Price contingencies with respect to costs in local currency are computed at 6.1% for 2017 and 6.3% for 2018 onwards. This also includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

<sup>d</sup> Includes interest and commitment charges. Interest during construction has been computed at the government's onlending rate. Commitment charges for the OCR loan are 0.15% per year to be charged on the undisbursed loan amount.

Source: Development project proposal and Asian Development Bank estimate.

18. The government has requested a regular loan of \$500 million from ADB's ordinary capital resources to help finance the project. The loan will have a 25-year term, including a grace period of 5 years; an annual interest rate determined in accordance with ADB's London interbank offered rate-based lending facility; a commitment charge of 0.15% per year; and such other terms and conditions set forth in the draft loan and project agreements. Based on the straight-line repayment method, the average loan maturity is 15.25 years, and the maturity premium payable to ADB is 0.10% per year.

19. The government has provided ADB with (i) reasons for its decision to borrow under ADB's LIBOR-based lending facility based on these terms and conditions, and (ii) an undertaking that these choices were its own independent decisions and not made in reliance on any communications or advice from ADB.

20. The government has also requested a loan of \$300 million from Islamic Development Bank (IDB) to cofinance output 1. Cofinancing will be on collaborative basis following joint financing structure. IDB will administer its funds. ADB and IDB agreed on the cofinancing amount and structure, as well as the procurement and safeguard arrangements.<sup>14</sup> The cofinancing will be provided on terms and conditions agreed between the government and IDB, and acceptable to ADB. ADB loan and IDB loan will be onlent to NWPGL at 4% per annum in foreign currency.<sup>15</sup> JFPR will provide grant cofinancing of \$1.5 million to be fully administered by ADB.

21. ADB will finance eligible expenditures in relation to the turnkey contracts, supply of equipment, consulting services, and contingencies. The JFPR grant will finance equipment and consulting services in relation to socially inclusive development of communities. The government will finance taxes and duties, small civil works, recurrent costs, interest during implementation, land transfer, environmental and social mitigation, project management, and remuneration of counterpart staff. The government has assured ADB that it will cover any shortfall in financing required to meet the agreed outputs. The summary financing plan is in Table 5.

**Table 5: Summary Financing Plan**

<b>Source</b>	<b>Amount (\$ million)</b>	<b>Share of Total (%)</b>
Asian Development Bank		
Ordinary capital resources (regular loan)	500.0	43.9
Islamic Development Bank	300.0	26.3
Japan Fund for Poverty Reduction	1.5	0.1
Government of Bangladesh	338.5	29.7
<b>Total</b>	<b>1,140.0</b>	<b>100.0</b>

Source: Asian Development Bank estimates.

## **A. Cost Estimates Preparation and Revisions**

22. Detailed cost estimates were obtained from the draft development project proposal, the government's document prepared for approval of the project by the Executive Committee of the National Economic Council. The cost estimates are based on costs of similar projects executed in the recent past.

<sup>14</sup> Details of the cofinancing arrangements are reflected in the Minutes of the Meeting for Cooperation, Coordination, and Exchange of Information for Rupsha 800 MW Combined Cycle Power Plant Project signed by both partners on 12 September 2017. Memorandum of understanding will be signed after the approval of the project by ADB and IDB.

<sup>15</sup> Government of Bangladesh, Ministry of Finance. 2011. *Lending and Re-lending Terms of Local/Foreign Currency Loans*. Dhaka.

**B. Key Assumptions**

23. The following key assumptions underpin the cost estimates and financing plan:

- (i) Exchange rate Tk81.0 = \$1.00 (as of 18 October 2017)
- (ii) Price contingencies based on expected cumulative inflation over the implementation period are as follows:

**Table 6: Escalation Rates for Price Contingency Calculation**

<b>Item</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Average</b>
Foreign rate of price inflation	1.5 %	2.3 %	3.8 %	5.4 %	6.9 %	4.0 %
Domestic rate of price inflation	6.3 %	9.6 %	16.6 %	23.9 %	31.7 %	17.6 %

Source: Asian Development Bank.

- (iii) In-kind contributions were calculated based on the requirements and details as outlined in the draft of development project proposal.



## A. Detailed Cost Estimates by Expenditure Category

**Table 7: Detailed Cost Estimates by Expenditure**

Item	Tk million			\$ million			% of Total Base Cost
	Foreign Exchange	Local Currency	Total Cost	Foreign Exchange	Local Currency	Total Cost	
<b>A. Investment Costs<sup>a</sup></b>							
1 Turnkey contract for power plant	39,201.55	26,063.77	65,265.32	483.97	321.77	805.74	84.9%
2 Turnkey contract for gas pipeline	248.71	248.71	497.42	3.07	3.07	6.14	0.6%
3 Turnkey contract for transmission line	1,127.52	1,099.33	2,226.85	13.92	13.57	27.49	2.9%
4 Civil works	-	666.27	666.27	-	8.23	8.23	0.9%
5 Materia and equipment	72.90	2,465.76	2,538.66	0.90	30.44	31.34	3.3%
6 Environmental and social mitigation	-	207.73	207.73	-	2.56	2.56	0.3%
7 Land acquisition and resettlement plan	-	2,863.32	2,863.32	-	35.35	35.35	3.7%
8 Consulting service	821.26	745.76	1,567.02	10.14	9.21	19.35	2.0%
9 Capacity development	567.00	76.55	643.55	7.00	0.95	7.95	0.8%
<b>Subtotal (A)</b>	<b>42,038.94</b>	<b>34,437.20</b>	<b>76,476.14</b>	<b>519.00</b>	<b>425.15</b>	<b>944.15</b>	<b>99.5%</b>
<b>B. Recurrent Costs<sup>a</sup></b>							
1 Incremental administration cost	-	413.66	413.66	-	5.11	5.11	0.5%
<b>Subtotal (B)</b>	<b>-</b>	<b>413.66</b>	<b>413.66</b>	<b>-</b>	<b>5.11</b>	<b>5.11</b>	<b>0.5%</b>
<b>Total Base Cost</b>	<b>42,038.94</b>	<b>34,850.86</b>	<b>76,889.80</b>	<b>519.00</b>	<b>430.26</b>	<b>949.26</b>	<b>100.0%</b>
<b>C. Contingencies<sup>b</sup></b>							
1 Physical	1,681.56	1,394.03	3,075.59	20.76	17.21	37.97	4.0%
2 Price	1,906.74	2,728.08	4,634.82	23.54	33.68	57.22	6.0%
<b>Subtotal (C)</b>	<b>3,588.30</b>	<b>4,122.11</b>	<b>7,710.41</b>	<b>44.30</b>	<b>50.89</b>	<b>95.19</b>	<b>10.0%</b>
<b>D. Financing Charges During Implementation<sup>c</sup></b>							
1 Interest during construction	6,718.48	878.61	7,597.09	82.94	10.85	93.79	9.9%
2 Commitment charges	142.93	-	142.93	1.76	-	1.76	0.2%
<b>Subtotal (D)</b>	<b>6,861.41</b>	<b>878.61</b>	<b>7,740.02</b>	<b>84.71</b>	<b>10.85</b>	<b>95.56</b>	<b>10.1%</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>52,488.65</b>	<b>39,851.59</b>	<b>92,340.24</b>	<b>648.01</b>	<b>491.99</b>	<b>1,140.00</b>	<b>120.1%</b>

Tk = Bangladesh taka.

Notes: Numbers may not sum precisely because of rounding.

<sup>a</sup> In October 2017 prices. Includes taxes and duties of \$152.9 million to be financed by the government by cash contribution. Taxes on equipment and consulting service financed under the grant will also be charged to the grant. Includes audit fees for the audit of the annual project financial statements for the period 2019-2022 to be financed from the government resources.

<sup>b</sup> Physical contingencies are computed at 4% of base costs. Price contingencies with respect to costs in foreign currency are computed at 1.4% for 2017 and 1.5% for 2018 onwards. Price contingencies with respect to costs in local currency are computed at 6.1% for 2017 and 6.3% for 2018 onwards. This also includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

<sup>c</sup> Includes interest and commitment fee. Interest during construction for the Asian Development Bank (ADB) loan and the Islamic Development Bank (IDB) has been computed at the on-lending rate of 4% per year. Commitment charges for an ADB loan are 0.15% per year to be charged on the undisbursed loan amount. Interest during construction for government loan has been computed at a rate of 3% per year.

Sources: Development project proposal and Asian Development Bank estimate.

**B. Allocation and Withdrawal of Loan Proceeds****Table 8: Allocation and Withdrawal of Loan Proceeds**

CATEGORY		ADB FINANCING BASIS	
Number	Item	Amount Allocated for ADB Financing (\$ million)	Percentage and Basis for Withdrawal from the Loan Account
1	Turnkey contract for power plant	396.06	100% of total expenditure claimed
2	Turnkey contract for gas pipeline	5.00	100% of total expenditure claimed
3	Turnkey contract for transmission line	23.20	100% of total expenditure claimed
4	Consulting services	13.77	100% of total expenditure claimed
5	Capacity development	7.00	100% of total expenditure claimed
6	Unallocated	54.97	100% of total expenditure claimed
	Total	500.00	

ADB = Asian Development Bank.

Source: Asian Development Bank estimates.

**Table 9: Allocation and Withdrawal of Grant Proceeds**

CATEGORY		ADB FINANCING BASIS	
Number	Item	Amount Allocated for ADB Financing (\$ million)	Percentage and Basis for Withdrawal from the Loan Account
1	Equipment	0.90	100% of total expenditure claimed
2	Consulting service	0.50	100% of total expenditure claimed
3	Unallocated	0.10	100% of total expenditure claimed
	Total	1.50	

ADB = Asian Development Bank.

Source: Asian Development Bank estimates.

### C. Detailed Cost Estimates by Financier

**Table 10: Detailed Cost Estimates by Financier**

Item	ADB OCR (regular loan)		IDB		JFPR <sup>a</sup>		Government of Bangladesh <sup>b</sup>		Total Cost Taxes and duties	
	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	Amount	
<b>A. Investment Costs</b>										
1 Turnkey contract for power plant	396.06	49.2%	267.02	33.1%	-	0.0%	142.67	17.7%	805.74	142.67
2 Turnkey contract for gas pipeline	5.00	81.4%	-	0.0%	-	0.0%	1.14	18.6%	6.14	1.14
3 Turnkey contract for transmission line	23.20	84.4%	-	0.0%	-	0.0%	4.29	15.6%	27.49	4.29
4 Civil works	-	0.0%	-	0.0%	-	0.0%	8.23	100.0%	8.23	-
5 Material and equipment	-	0.0%	-	0.0%	0.90	2.9%	30.44	97.1%	31.34	-
6 Environmental and social mitigation	-	0.0%	-	0.0%	-	0.0%	2.56	100.0%	2.56	-
7 Land acquisition and resettlement plan	-	0.0%	-	0.0%	-	0.0%	35.35	100.0%	35.35	-
8 Consulting service	13.77	71.2%	-	0.0%	0.50	2.6%	5.08	26.2%	19.35	3.82
9 Capacity development	7.00	88.1%	-	0.0%	-	0.0%	0.95	11.9%	7.95	0.95
<b>Subtotal (A)</b>	<b>445.03</b>	<b>47.1%</b>	<b>267.02</b>	<b>28.3%</b>	<b>1.40</b>	<b>0.1%</b>	<b>230.71</b>	<b>24.0%</b>	<b>944.15</b>	<b>152.87</b>
<b>B. Recurrent Costs</b>										
1 Incremental administration cost	-	0.0%	-	0.0%	-	-	5.11	100.0%	5.11	-
<b>Subtotal (B)</b>	<b>-</b>	<b>0.0%</b>	<b>-</b>	<b>0.0%</b>	<b>-</b>	<b>-</b>	<b>5.11</b>	<b>100.0%</b>	<b>5.11</b>	<b>-</b>
<b>Total Base Cost</b>	<b>445.03</b>	<b>46.9%</b>	<b>267.02</b>	<b>28.1%</b>	<b>1.40</b>	<b>0.1%</b>	<b>235.81</b>	<b>24.8%</b>	<b>949.26</b>	<b>152.87</b>
<b>C. Contingencies</b>	<b>54.97</b>	<b>57.8%</b>	<b>32.98</b>	<b>34.7%</b>	<b>0.10</b>	<b>0.1%</b>	<b>7.13</b>	<b>7.5%</b>	<b>95.19</b>	<b>0.00</b>
<b>D. Financing Charges During</b>	<b>-</b>	<b>0.0%</b>	<b>-</b>	<b>0.0%</b>	<b>-</b>	<b>0.0%</b>	<b>95.56</b>	<b>100.0%</b>	<b>95.56</b>	<b>-</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>500.00</b>	<b>43.9%</b>	<b>300.00</b>	<b>26.3%</b>	<b>1.50</b>	<b>0.1%</b>	<b>338.50</b>	<b>29.7%</b>	<b>1,140.00</b>	<b>152.87</b>
<b>% Total Project Cost</b>		<b>43.9%</b>		<b>26.3%</b>		<b>0.1%</b>		<b>29.7%</b>	<b>100%</b>	

ADB = Asian Development Bank, IDB = Islamic Development Bank, JFPR = Japan Fund for Poverty Reduction, OCR = ordinary capital resources.

Notes: Numbers may not sum precisely because of rounding.

<sup>a</sup> Taxes on equipment and consulting service financed under the JFPR grant will also be charged to the JFPR.

<sup>b</sup> Government of Bangladesh contribution will include debt (40%) and equity (60%) according to the Ministry of Finance lending terms for local currency loans. NWPGL will finance the incremental administration costs from its own resources.

Sources: Development project proposal and ADB estimates.

## D. Detailed Cost Estimates by Components

**Table 11: Detailed Cost Estimates by Components**  
(\$ million)

Item	Total Cost	Component 1		Component 2		Component 3		Component 4	
		Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category
<b>A. Investment Costs</b>									
1. Turnkey contract for power plant	805.74	799.67	99.2%	-	0.0%	6.08	0.8%	-	0.0%
2. Turnkey contract for gas Pipeline	6.14	-	0.0%	6.14	100.0%	-	0.0%	-	0.0%
3. Turnkey contract for transmission line	27.49	-	0.0%	27.49	100.0%	-	0.0%	-	0.0%
4. Civil works	8.23	8.23	100.0%	-	0.0%	-	0.0%	-	0.0%
5. Material and equipment	31.34	30.44	97.1%	-	0.0%	-	0.0%	0.90	2.9%
6. Environmental and social mitigation	2.56	2.22	86.6%	0.34	13.4%	-	0.0%	-	0.0%
7. Land acquisition and resettlement plan	35.35	34.94	98.8%	0.41	1.2%	-	0.0%	-	0.0%
8. Consulting service	19.35	-	0.0%	1.36	7.0%	17.49	90.4%	0.50	2.6%
9. Capacity development	7.95	-	0.0%	-	0.0%	7.95	100.0%	-	0.0%
<b>Subtotal (A)</b>	<b>944.15</b>	<b>875.50</b>	<b>92.7%</b>	<b>35.74</b>	<b>3.8%</b>	<b>31.51</b>	<b>3.3%</b>	<b>1.40</b>	<b>0.1%</b>
<b>B. Recurrent Costs</b>									
1. Incremental administration cost	5.11	5.11	100.0%	-	0.0%	-	0.0%	-	0.0%
<b>Subtotal (B)</b>	<b>5.11</b>	<b>5.11</b>	<b>100.0%</b>	<b>-</b>	<b>0.0%</b>	<b>-</b>	<b>0.0%</b>	<b>-</b>	<b>0.0%</b>
<b>Total Base Cost (A+B)</b>	<b>949.29</b>	<b>880.61</b>	<b>92.8%</b>	<b>35.74</b>	<b>4.4%</b>	<b>31.51</b>	<b>3.9%</b>	<b>1.40</b>	<b>0.2%</b>
<b>C. Contingencies</b>									
1. Physical	37.97	35.28	92.9%	1.43	3.8%	1.26	3.3%	-	0.0%
2. Price	57.22	53.07	92.7%	2.15	3.8%	1.90	3.3%	0.10	0.2%
<b>Subtotal (C)</b>	<b>95.19</b>	<b>88.34</b>	<b>92.8%</b>	<b>3.59</b>	<b>3.8%</b>	<b>3.16</b>	<b>3.3%</b>	<b>0.10</b>	<b>0.1%</b>
<b>D. Financing Charges During Implementation</b>									
1. Interest during construction	93.79	87.14	92.9%	3.54	3.8%	3.12	3.3%	-	0.0%
2. Commitment charges	1.76	1.76	100.0%	-	0.0%	-	0.0%	-	0.0%
<b>Subtotal (D)</b>	<b>95.56</b>	<b>88.90</b>	<b>93.0%</b>	<b>3.54</b>	<b>3.7%</b>	<b>3.12</b>	<b>3.3%</b>	<b>-</b>	<b>0.0%</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>1,140.00</b>	<b>1,057.85</b>	<b>92.8%</b>	<b>42.87</b>	<b>3.8%</b>	<b>37.79</b>	<b>3.3%</b>	<b>1.50</b>	<b>0.1%</b>

Notes: Numbers may not sum precisely because of rounding.

Sources: Development project proposal and Asian Development Bank estimates.

## E. Detailed Cost Estimates by Year

**Table 12: Detailed Cost Estimates by Year**  
(\$ million)

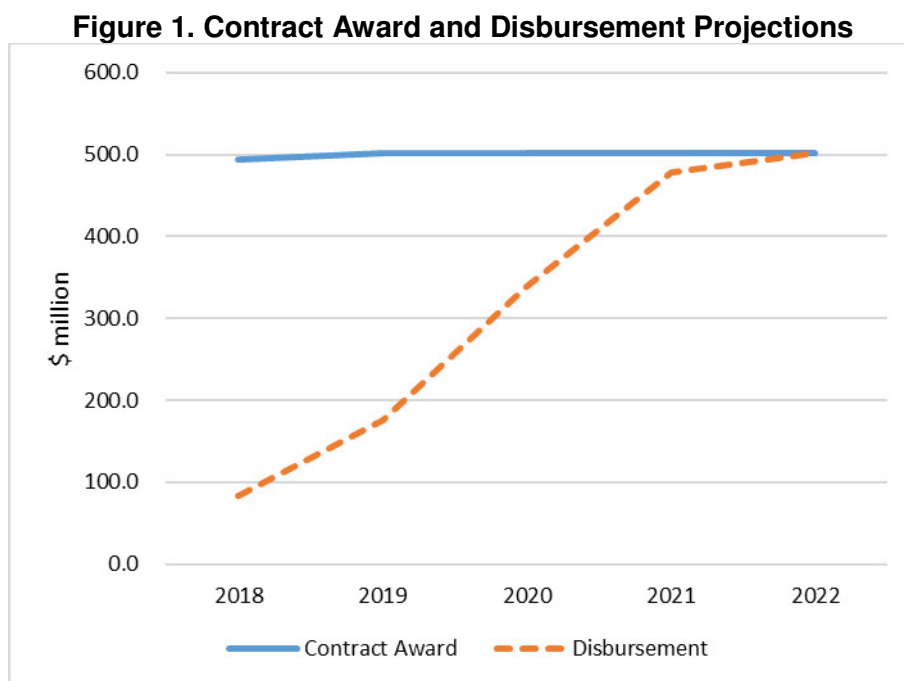
Item	Total Cost	2018	2019	2020	2021	2022
<b>A. Investment Costs</b>						
1. Turnkey contract for power plant	805.74	80.57	161.15	282.01	241.72	40.29
2. Turnkey contract for gas pipeline	6.14	0.61	1.23	2.15	1.84	0.31
3. Turnkey contract for transmission line	27.49	2.75	5.50	9.62	8.25	1.37
4. Civil works	8.23	0.82	1.65	2.88	2.47	0.41
5. Material and equipment	31.34	31.34	-	-	-	-
6. Environmental and social mitigation	2.56	0.26	0.51	0.90	0.77	0.13
7. Land acquisition and resettlement plan	35.35	35.35	-	-	-	-
8. Consulting service	19.35	1.93	3.87	6.77	5.85	0.97
9. Capacity development	7.95	2.38	2.38	2.38	0.79	-
<b>Subtotal (A)</b>	<b>944.15</b>	<b>156.03</b>	<b>176.29</b>	<b>306.71</b>	<b>261.65</b>	<b>43.48</b>
<b>B. Recurrent Costs</b>						
1. Incremental administration cost	5.11	0.51	1.02	1.79	1.53	0.26
<b>Subtotal (B)</b>	<b>5.11</b>	<b>0.51</b>	<b>1.02</b>	<b>1.79</b>	<b>1.53</b>	<b>0.26</b>
<b>Total Base Cost</b>	<b>949.26</b>	<b>156.54</b>	<b>177.31</b>	<b>308.50</b>	<b>263.18</b>	<b>43.73</b>
<b>C. Contingencies</b>	<b>95.19</b>	<b>10.97</b>	<b>15.27</b>	<b>31.70</b>	<b>31.31</b>	<b>5.94</b>
<b>D. Financing Charges During Implementation</b>	<b>95.56</b>	<b>3.27</b>	<b>9.16</b>	<b>18.43</b>	<b>29.38</b>	<b>35.32</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>1,140.00</b>	<b>170.78</b>	<b>201.74</b>	<b>358.63</b>	<b>323.87</b>	<b>84.99</b>
<b>% of Total Project Cost</b>	<b>100.0%</b>	<b>15.0%</b>	<b>17.7%</b>	<b>31.5%</b>	<b>28.4%</b>	<b>7.5%</b>

Notes: Numbers may not sum precisely because of rounding.

Sources: Development project proposal and Asian Development Bank estimates.

## F. Contract and Disbursement S-Curve

24. The projections for contract award and disbursement for the project are in Figure 1.



Source: North-West Power Generation Company Limited.

25. Table 13 indicates the same details of contract awards and disbursements for the allocated amounts over the life of the project, on a quarterly basis, based on projections of contract awards and disbursements.

**Table 13: Contracts and Disbursements**

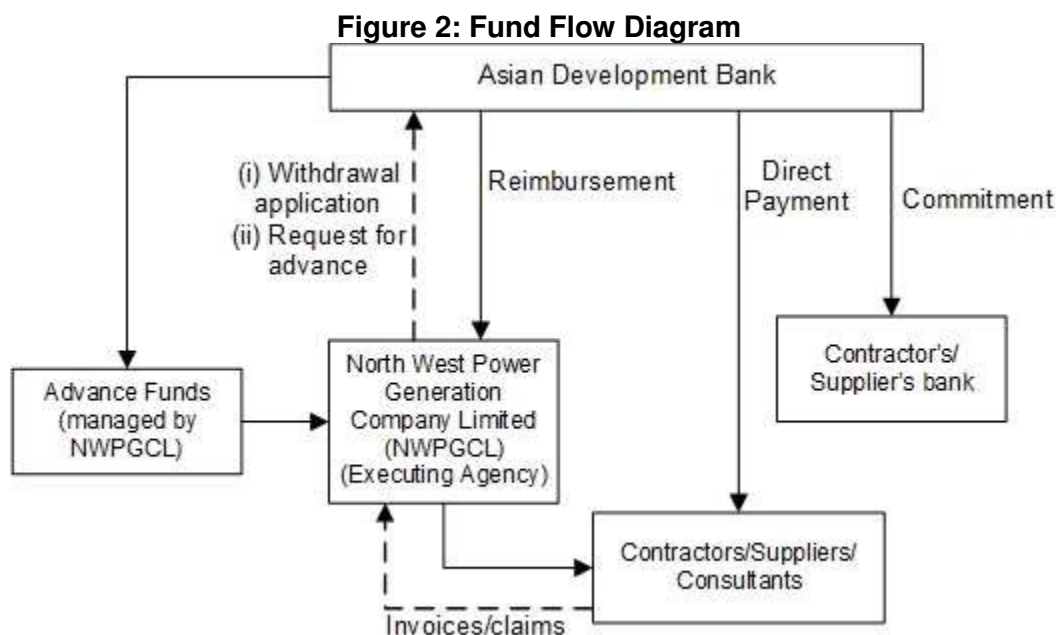
Quarter/Year	Cumulative Award (\$ million)	Cumulative Disbursement (\$ million)
Q1/2018		-
Q2/2018		-
Q3/2018		-
Q4/2018	501.5	53.3
Q1/2019		81.6
Q2/2019		109.9
Q3/2019		138.1
Q4/2019		166.4
Q1/2020		209.9
Q2/2020		253.4
Q3/2020		296.9
Q4/2020		340.4
Q1/2021		374.9
Q2/2021		409.5
Q3/2021		444.0
Q4/2021		478.5
Q1/2022		484.3
Q2/2022		490.0
Q3/2022		495.8
Q4/2022		501.5

Q = quarter.

Source: North-West Power Generation Company Limited.

## G. Fund Flow Diagram

26. The fund flow is indicated in Figure 2.



Note: ADB's direct payment and commitment letter procedures will be used for large scale payments. In such cases, the direct payment will be made from ADB to contractors and commitment letter will go to a nominated bank of a contractor/supplier based on withdrawal applications submitted to ADB by NWPGL. Up to two advance funds may be created, one for ADB loan and second for JFPR grant. NWPGL will manage the advance funds.

## V. FINANCIAL MANAGEMENT

### A. Financial Management Assessment

27. The financial management assessment (FMA) was conducted in October 2017 following ADB's Guidelines for the Financial Management and Analysis of Projects (2005), Financial Due Diligence Methodology Note (2009), and Financial Management Technical Guidance Note (2015).<sup>16</sup> The FMA considered the capacity of NWPGL including fund-flow arrangements, staffing, accounting and financial reporting systems, financial information systems, and internal and external auditing arrangements. Given advance funds with statement of expenditures (SOE) are proposed under the project, NWPGL's capacity to prepare and maintain proper SOE records was assessed as part of FMA. It was concluded that NWPGL has adequate administrative and accounting capacity.

28. NWPGL, an enterprise of Bangladesh Power Development Board, is one of the five power generation utilities in the country. NWPGL was created in 2007 under the provisions of the Companies Act, 1994 and the framework of the Government Power Sector Reforms Policy supported by ADB's sector development program loan.<sup>17</sup> NWPGL is one of the fastest growing

<sup>16</sup> ADB. 2005. *Financial Management and Analysis of Projects*. Manila; ADB. 2009. *Financial Due Diligence: A Methodology Note*. Manila; ADB. 2015. *Financial Management Technical Guidance Note*. Manila.

<sup>17</sup> ADB. 2007. *Report on Recommendation of the President to the Board of Directors: Proposed Sector Development Program Loan to the People's Republic of Bangladesh for Sustainable Power Sector Development Program*. Manila.

power companies in Bangladesh, with a current installed generation capacity of 722 MW<sup>18</sup> and present development activities aiming to increase NWPGL's generation capacity by an additional 2,590 MW by 2022.

29. NWPGL has an accounting and finance department headed by a general manager. Under the general manager, there is one division for accounts and finance, and the total number of personnel is 23. NWPGL also has an internal audit unit headed by a deputy general manager who reports directly to the managing director. The scope of internal audit covers all major activities of the entity including externally funded projects. The internal audit unit issues audit reports for entity level and project level on annual basis.

30. NWPGL's external audit is conducted by a firm of chartered accountants and reports are submitted every year to the NWPGL management and stakeholders within six months after the end of the fiscal year. The company is also subject to annual statutory audits of the Office of the Comptroller and Auditor General of Bangladesh, for government-funded projects and entity level of operations. Foreign-aided projects are annually audited by the Foreign-Aided Project Audit Directorate under the Office of the Comptroller and Auditor General of Bangladesh.<sup>19</sup>

31. NWPGL recently received support from Japan International Cooperation Agency to develop a roadmap and policy manuals on several organizational aspects such as human resource development, financial and accounting systems, performance management system, integrated management system, etc. As an outcome, NWPGL was provided with its own accounts, budgeting and internal audit manuals, and the implementation plan for an ERP (Enterprise Resource Planning) system including Terms of Reference for deployment of ERP.<sup>20</sup>

32. Based on the assessment, NWPGL's financial management has certain strengths as follows:

- (i) Vast experience in managing externally financed projects including ADB funded projects, and has adequately trained personnel who are familiar with the requirements for reporting, financial management and disbursement of ADB loans;
- (ii) Compliance with accounting standards and producing good quality audit reports; and
- (iii) Strong capacity in planning and budgeting and well-structured organization.

33. However, the following few key financial management weaknesses have been identified as well:

- (i) Incomplete, nonintegrated, manual information reporting systems are being used;
- (ii) Current overall manpower is weak considering future development projects; and
- (iii) Improving the finance function is required to manage the expected growing external borrowing.

<sup>18</sup> North-West Power Generation Company Limited currently owns operates three power plants: Sirajganj 214 MW combined cycle power plant (CCPP), Khulna 230 MW CCPP and Bheramara 278 MW CCPP.

<sup>19</sup> The Office of the Comptroller and Auditor General of Bangladesh (CAG) is the supreme audit institution of Bangladesh, responsible for maintaining accounts of the republic and audits all receipts and expenditure of the Government of Bangladesh, including those of bodies and authorities substantially financed by the government. The reports of the CAG are discussed by the Public Accounts Committee, which is a standing committee in the Parliament of Bangladesh. Typically audit the projects funded by the Government of Bangladesh. Foreign-Aided Project Audit Directorate, on behalf of the CAG, audit the aided projects and certify their accounts and issue reports to the donor agencies, besides the parliament and audited entities.

<sup>20</sup> The key features of the ERP Note, Accounting Policies and Chart of Accounts was presented to the NWPGL Audit Committee meeting on June 2016.



34. The FMA reviewed two types of risks: (i) inherent risks (risks outside the direct control of the NWPGL financial management), and (ii) control risks (risk concerning the internal functioning and control of the NWPGL's finance and accounting section). The FMA identified the following key risks and its mitigation measures in Table 14. Based on the assessment, it is concluded that the overall project financial management pre-mitigation risk is Moderate.

**Table 14: Risk Management Assessment**

<b>Risk Type</b>	<b>Risk Rating</b>	<b>Risk Description</b>	<b>Mitigation Measures</b>
<b>A. Inherent Risks</b>			
1. Country Specific Risks	Substantial	Overall public financial management risk: Aggregate budget credibility deteriorated, and external scrutiny and audit remain in the weak area in the PFM.	Dialogue needed between ADB, Government of Bangladesh, and ICAB aimed at (i) capacity building of CAG auditors, and (ii) strengthening of statutory/regulatory requirements to ensure that audits look beyond transactions and focus on the systems of the audited entities.
	Moderate	Financing Risk: Delays in releasing counterpart funds for the project	The disbursements of counterpart fund are subject to approval of DPP. The DPP is reviewed and cleared by the Ministry of Power, Energy and Mineral Resources and Planning Commission, respectively with an ability to provide counterpart funds. Since the project addresses the key need for providing power supply in Bangladesh, the government is expected to make adequate provision for counterpart funds in its budget.
2. Entity Specific Risks	Moderate	Financial Risk: Revenue is insufficient to recover costs undermining financial sustainability	NWPGL has a power purchase agreement (PPA) with BPDB for each one of its three power plants, which have a full cost recovery tariff structure.
	Moderate	Foreign Exchange Risk: NWPGL will be exposed to foreign exchange risk. Currently, US dollar continues to appreciate against the Bangladesh currency taka.	Foreign exchange variation will be passed on to BPDB through adjustment of power purchase cost and this will be specified in the PPA.
<b>Overall inherent risk</b>	<b>Moderate</b>		

Risk Type	Risk Rating	Risk Description	Mitigation Measures
<b>B. Control Risk</b>			
1. Executing Agency	Low	Compliance Risk: NWPGL follows structured planning and technical assessment processes. It also has significant experience in implementing externally assisted projects and is familiar with ADB's financial management and disbursement requirements	Not required.
2. Fund Flow	Low	Financing Risk: The disbursements of counterpart funds are subject to approval of DPP. Access to funds from government follow specified procedures, and requires prior approvals, which creates delays.	NWPGL has approved the DPP by the Ministry of Power, Energy and Mineral Resources and the Planning Commission.
3. Staffing	Substantial	Execution Risk: While the level of staffing is adequate for its current level of activities, NWPGL should augment staff to manage the proposed upcoming projects.	NWPGL agreed to prepare a long-term human resource plan in line with the capacity expansion plan.
4. Accounting Policies and Procedures	Moderate	NWPGL has defined accounting policies and procedures in place which are in line with international accounting standards. However, the past three annual audit reports issued a qualified opinion and highlighted persisting issues regarding allocation of profits and regulatory stipulations regarding increase of share capital.	NWPGL should resolve audit issues within a certain time frame.
5. Information system	Substantial	Incomplete information reporting systems: NWPGL currently conducts its operations particularly regarding financial reporting through spreadsheets and has no information systems in place.	NWPGL will implement the automated accounting software ERP funded by ADB, which will significantly improve the preparation of financial statements and facilitate reconciliation with the project level of accounts.
6. Internal audit	Moderate	Strengthening of internal audit functions; NWPGL has robust internal systems and processes in place for smooth and efficient conduct of business. However, while the scope of internal audit function covers a wide array of responsibilities and generates periodic reports, the internal audit requirements will need to evolve to become more systematic and be strengthened with development of new projects.	NWPGL will review scope and periodicity of reporting, coverage of internal audit function and accordingly strengthen the internal audit function as required.

Risk Type	Risk Rating	Risk Description	Mitigation Measures
7. External audit	Low	NWPGCL has appointed a local chartered accountancy firm for audit. Annual reports are normally issued regularly within timelines.	Not required.
8. Reporting and monitoring	Low	Comprehensive monthly and quarterly financial management reporting systems are in place with detailed guidelines issued by the finance department of NWPGCL	Not required.
<b>Overall Control Risk</b>	<b>Moderate</b> Some financial management risks are recognized, but most of them can be measured by mitigation measures		
<b>Overall Combined Risk</b>	<b>Moderate</b>		

ADB = Asian Development Bank, BPDB = Bangladesh Power Development Board, DPP = development project proposal, ERP = enterprise resource planning, NWPGCL = North-West Power Generation Company Limited, PFM = public financial management, CAG = comptroller auditor general, ICAB = Institute of Chartered Accountants Bangladesh, PPA = power purchase agreement.

Source: ADB.

35. NWPGCL and ADB have agreed an action plan to address the following issues that the financial management assessment identified. The financial management action plan is provided in Table 15.

**Table 15: Risks and Mitigation Plan**

Risk Description	Mitigation Actions	Responsibility	Timeframe
Incomplete information reporting systems: Currently, accounting, financing, and fixed asset recording are done manually using spreadsheets.	NWPGCL developed an overall ERP implementation plan (accounting, financing, human resource, and procurement modules) and will expand its plan including the preparation of bidding documents for full implementation of ERP system.	NWPGCL	Expected timeline for deployment of the ERP system to be submitted to ADB by June 2018.  Tendering for ERP system will commence by September 2018.  ERP system fully implemented and operational by December 2020.
Strengthening manpower: The level of staffing is adequate for its current operation. However, there is a need to increase number of staff and provide adequate training considering NWPGCL's	Prepare a long-term staffing and training plan for next five years.	NWPGCL	Long-term human resource development plan including measures to strengthen manpower and job clear description submitted by December 2018

Risk Description	Mitigation Actions	Responsibility	Timeframe
aggressive development and expansion goals.			
Improving the finance function for efficient financial management of the expected growing external borrowing: Currently, NWPGL has one position for DGM (accounts and finance) under GM (Accounts and Finance)	<p>Separate account and finance function to focus its own activities</p> <p>Financial covenants related to Debt to Equity ratio and DSCR incorporated to review financial status of NWPGL</p>	<p>NWPGL</p> <p>NWPGL</p>	<p>To improve efficiency and business processes of the finance and account department, NWPGL should appoint, by December 2018, two separate individuals as DGMs, one each for Finance and Accounts.</p> <p>Audited annual financial report submitted within 6 months from the closing date of fiscal year.</p>

ADB = Asian Development Bank, DSCR = debt service coverage ratio, DGM = deputy general manager, ERP = enterprise resource planning, GM = general manager, NWPGL= North-West Power Generation Company Limited.

Source: North-West Power Generation Company Limited.

36. **ERP System Development Approach.** NWPGL has commissioned three power plants and have started earning revenues in operations phase. However, the maintenance of these plants is still under warranty or under maintenance with original equipment manufacturer or under long term service agreement contract.

37. NWPGL's priorities are based on the current criticality of business processes and the current level of automation. At present NWPGL has no IT applications and everything is carried out in manual mode. Basic accounting, Inventory management, and management information System preparations are done on spreadsheets or out of rudimentary small-scale applications. Given the growing size of the organization, it needs urgent IT automation in some of these areas so that manual mode of working can be addressed by the deployment of a productive IT solution.

38. Amongst the applications, the following is the rationale for deployment:

- (i) **Accounting Finance and Costing:** Urgently required as the number of transactions as well as complexity has increased. Also maintaining accounting, finance and costing records in manual mode increases the chances of errors and therefore erroneous reporting.
- (ii) **Procurement and Inventory Management:** This is tightly integrated with accounting, finance, and costing and the preparation of inventory records in a manual mode or in some other application renders the accounting package inadequate. Material accounting and valuation will be greatly impacted. Also planning and inventory management of key capital and operational spares is critical to the running of the generation plants.
- (iii) **Plant Maintenance:** NWPGL is now in the process of streamlining its operations and maintenance processes and the current work is managed by third party. Hence, it is important to gradually implement such applications.

- (iv) **Projects:** Current projects are all funded by multilateral funding agencies and these projects have turnkey contracts with project management consultancy (PMC) inbuilt into them. Turnkey / PMC contractors manage the project at the day to day level and report on project progress and status. The PMC also uses IT tools for this purpose. Therefore, it may be useful for NWPGL to duplicate all of projects at the detailed level. In the future, as NWPGL plans to expand and manage multiple fuel and technology-based projects themselves, it will require a project management module at that point of time.
- (v) **Plant Operations:** Includes planning models and engineering. As indicated earlier, NWPGL is still setting up its team and will need this in the future.
- (vi) **Human Resources:** NWPGL is a new organization with relatively low staff strength. Human resource related work is being managed based on government rules and regulations and details of each employee is available on manual basis / spreadsheet. With the current staff strength, it is possible to wait for the package in the second phase.

## B. Disbursement

### 1. Disbursement Arrangements for ADB Funds

39. The loan and grant proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2017, as amended from time to time),<sup>21</sup> and detailed arrangements agreed upon between the government and ADB. Online training for project staff on disbursement policies and procedures is available.<sup>22</sup> Project staff are encouraged to avail of this training to help ensure efficient disbursement and fiduciary control. Pursuant to ADB's Safeguard Policy Statement (2009), ADB funds may not be applied to the activities described on the ADB Prohibited Investment Activities List set forth at Appendix 5 of the Safeguard Policy Statement.

40. Reimbursement, advance fund, direct payment, and commitment procedures will be adopted in the disbursement of loan proceeds. NWPGL is responsible for the preparation and sending of withdrawal applications to ADB.

41. **Advance fund procedure.** Advance accounts for ADB loan and JFPR grant should be established and maintained by NWPGL. The currency of the advance account is US dollar. The advance account is to be used exclusively for the respective financing sources' share of eligible expenditures. NWPGL, who established the advance account in its name, is accountable and responsible for the proper use of advances to the advance account. It is also responsible for the replenishment/liquidation of the advance account.

42. The respective total outstanding advance to the respective advance account should not exceed the estimate of ADB's share of expenditures to be paid through the advance account for the forthcoming 6 months. NWPGL may request for initial and additional advances to the advance account based on an Estimate of Expenditure Sheet<sup>23</sup> setting out the estimated expenditures to be financed through the accounts for the forthcoming 6 months. Supporting documents should be submitted to ADB or retained by NWPGL in accordance with ADB's *Loan Disbursement Handbook* (2017, as amended from time to time) when liquidating or replenishing

<sup>21</sup> The handbook is available electronically from the ADB website (<http://www.adb.org/documents/loam-disbursement-handbook>).

<sup>22</sup> Disbursement eLearning. [http://wpqr4.adb.org/disbursement\\_elearning](http://wpqr4.adb.org/disbursement_elearning).

<sup>23</sup> ADB. 2015. *Loan Disbursement Handbook*. 10B. Manila.

the advance account.

43. **Statement of expenditure procedure.**<sup>24</sup> The statement of expenditure procedure may be used for reimbursement of eligible expenditures or liquidation of advances to the advance account. Supporting documents and records for the expenditures claimed under the statement of expenditure should be maintained and made readily available for review by ADB's disbursement and review missions, upon ADB's request for submission of supporting documents on a sampling basis, and for independent audit.

44. Before the submission of the first withdrawal application, the borrower should submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the government, together with the authenticated specimen signatures of each authorized person. The minimum value per withdrawal application is \$100,000. Individual payments below such amount should be paid (i) by NWPGCL and subsequently claimed to ADB through reimbursement, or (ii) through the advance fund procedure, unless otherwise accepted by ADB. The borrower should ensure sufficient category and contract balances before requesting disbursements. Use of ADB's Client Portal Disbursements<sup>25</sup> system is encouraged for submission of withdrawal applications to ADB.

45. **Conditions for withdrawal from loan account.** Notwithstanding any other provisions of the loan agreement, no withdrawals shall be made from the loan account until the subsidiary loan agreements between the government and NWPGCL in form and substance satisfactory to ADB, have been duly authorized and ratified, and executed and delivered on behalf of the government and NWPGCL, and is legally binding upon the parties thereto in accordance with their terms.

## 2. Disbursement Arrangements for Counterpart Fund

46. Government counterpart funds will be used to finance civil works, installations, and the remaining miscellaneous works and services. NWPGCL will follow relevant disbursement and liquidation procedures for government funds. Local taxes and duties under the project will be financed by the government through cash contribution. The project director under NWPGCL will be responsible for: (i) preparing disbursement projections, (ii) requesting budgetary allocations for counterpart funds, (iii) collecting supporting documents, and (iv) preparing withdrawal applications.

### C. Accounting

47. NWPGCL will maintain, or cause to be maintained, separate books and records by funding source for all expenditures incurred on the project following accrual-based accounting following the International Financial Reporting Standards. NWPGCL will prepare project financial statements in accordance with Bangladesh accounting laws and regulations which are consistent with international accounting principles and practices.

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<sup>24</sup> SOE forms are available in Appendix 9B and 9C of ADB's *Loan Disbursement Handbook* (2015, as amended from time to time).

<sup>25</sup> The Client Portal Disbursements system facilitates online submission of withdrawal application to ADB, resulting in faster disbursement. The forms to be completed by the Borrower are available online at <https://www.adb.org/documents/client=portal-disbursements-guide>.

## D. Auditing and Public Disclosure

48. NWPGCL will cause the detailed project financial statements to be audited in accordance with International Standards on Auditing or the government's audit regulations by an independent auditor acceptable to ADB. The audited project financial statements together with the auditor's opinion will be presented in the English language to ADB within 6 months from the end of the fiscal year by NWPGCL.

49. The audited entity financial statements, together with the auditor's report and management letter, will be submitted in the English language to ADB within 1 month after their approval by the relevant authority.

50. The audit report for the project financial statements will include a management letter and auditor's opinions, on (i) whether the project financial statements present an accurate and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting standards; (ii) whether the proceeds of the loan were used only for the purposes of the project; (iii) the use of the advance fund and the SOE procedure, and (iv) whether the borrower or NWPGCL was in compliance with the financial covenants contained in the legal agreements (where applicable).

51. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned, including the external auditor.

52. The government and NWPGCL have been made aware of ADB's approach to delayed submission, and the requirements for satisfactory and acceptable quality of the audited project financial statements.<sup>26</sup> ADB reserves the right to require a change in the auditor (in a manner consistent with the constitution of the borrower), or for additional support to be provided to the auditor, if the audits required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

53. Public disclosure of the audited project financial statements, including the auditor's opinion on the project financial statements, will be guided by ADB's Public Communications Policy 2011.<sup>27</sup> After the review, ADB will disclose the audited project financial statements and the opinion of the auditors on the project financial statements no later than 14 days of ADB's confirmation of their

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<sup>26</sup> ADB's approach and procedures regarding delayed submission of audited project financial statements:

- (i) When audited project financial statements are not received by the due date, ADB will write to the executing agency advising that (a) the audit documents are overdue; and (b) if they are not received within the next 6 months, requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters will not be processed.
- (ii) When audited project financial statements are not received within 6 months after the due date, ADB will withhold processing of requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters. ADB will (a) inform the executing agency of ADB's actions; and (b) advise that the loan may be suspended if the audit documents are not received within the next 6 months.
- (iii) When audited project financial statements are not received within 12 months after the due date, ADB may suspend the loan.

<sup>27</sup> Public Communications Policy. <http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications>.

acceptability by posting them on ADB's website. The management letter, additional auditor's opinions, and audited entity financial statements will not be disclosed.<sup>28</sup>

## VI. PROCUREMENT AND CONSULTING SERVICES

### A. Advance Contracting and Retroactive Financing

54. All advance contracting and retroactive financing will be undertaken in conformity with ADB's Procurement Guidelines (2015, as amended from time to time) and ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). The issuance of invitations to bid under advance contracting and retroactive financing will be subject to ADB approval. The borrower and NWPGCL have been advised that approval of advance contracting and retroactive financing does not commit ADB to finance the project.

55. **Advance contracting.** ADB allowed advance contracting for recruitment of consultants and procurement of goods, related services and civil works including inviting and receiving bids for contracts that might be approved for implementation prior to loan effectiveness. The issuance of invitations to bid under advance contracting will be subject to ADB approval.

56. **Retroactive financing.** Retroactive financing will be allowed for up to 20% of the loan amount for expenditures incurred before loan effectiveness, but not more than 12 months before the signing of the loan agreement.

### B. Procurement of Goods, Works, and Consulting Services

57. All procurement of goods and works will be undertaken in accordance with ADB's Procurement Guidelines (2015, as amended from time to time).

58. International competitive bidding procedure will be used for procurement packages for (i) construction of the gas delivery pipeline, (ii) installation of gas-fired generation capacity, (iii) construction of power transmission facilities, and (iv) enhancement of institutional capacity of the North-West Power Generation Company Limited (NWPGCL).

59. Before the start of any procurement, ADB and the government will review the Public Procurement Act, 2006 (PPA 2006) of Bangladesh to ensure consistency with ADB's Procurement Guidelines (2015, as amended from time to time).

60. An 18-month procurement plan indicating threshold and review procedures, goods, works, and consulting service contract packages and national competitive bidding guidelines is in Section C.

61. All consultants will be recruited according to ADB's Guidelines on the Use of Consultants (2013, as amended from time to time).<sup>29</sup> The terms of reference for all consulting services are detailed in Section D.

62. One international firm and one international individual consultant will be engaged under the loan to provide 684-person months of support for project management/construction

<sup>28</sup> This type of information would generally fall under public communications policy exceptions to disclosure. ADB. 2011. *Public Communications Policy*. Paragraph 97(iv) and/or 97(v).

<sup>29</sup> Checklists for actions required to contract consultants by method available in e-Handbook on Project Implementation at: <http://www.adb.org/documents/handbooks/project-implementation/>



supervision activities and 12-person months of support for ERP implementation, respectively. One national individual consultant will be engaged under the loan as the external safeguards specialist to validate safeguards monitoring reports produced for the project. Two firms (one international and one national) will be engaged under the JFPR grant to support the implementation the grant component. Consulting firms will be engaged using the quality- and cost-based selection (QCBS) method with a standard quality–cost ratio of 80:20, while individual consultants will be engaged on the basis of biodata.

### C. Procurement Plan

#### PROCUREMENT PLAN

##### Basic Data

<b>Project Name:</b> Rupsha 800 MW Combined Cycle Power Plant Project	
<b>Project Number:</b> 50161-003	<b>Approval Number:</b> TBD
<b>Country:</b> Bangladesh	<b>Executing Agency:</b> North-West Power Generation Company Limited (NWPGL)
<b>Project Procurement Classification:</b> B	<b>Implementing Agency:</b> North-West Power Generation Company Limited (NWPGL)
<b>Procurement Risk:</b> Low	
<b>Project Financing Amount:</b> \$1,140,000,000 <b>ADB Financing:</b> \$500,000,000 <b>Cofinancing:</b> \$300,000,000 <b>Non-ADB Financing:</b> \$338,500,000 <b>JFPR Grant Financing:</b> 1,500,000	<b>Project Closing Date:</b> 31 December 2022
<b>Date of First Procurement Plan:</b> 30 September 2016	<b>Date of this Procurement Plan:</b> 19 April 2018

### A. Methods, Thresholds, Review and 18-Month Procurement Plan

#### 1. Procurement and Consulting Methods and Thresholds

63. Except as the Asian Development Bank (ADB) may otherwise agree, the following process thresholds shall apply to procurement of goods and works.

Procurement of Goods and Works		
Method	Threshold	Comments
International Competitive Bidding for Goods	\$2,000,000 and above	
National Competitive Bidding (NCB) for Goods	Between \$100,001 and \$1,999,999	The first NCB is subject to prior review, thereafter post review.
Shopping for Goods	Up to \$100,000	
International Competitive Bidding for Works	\$15,000,000 and above	
National Competitive Bidding for Works	Between \$100,001 and \$14,999,999	The first NCB is subject to prior review, thereafter post review.
Shopping for Works	Up to \$100,000	
Consulting Services		
Method	Comments	
Quality and Cost Based Selection for Consulting Firm		
Individual Consultant Selection for Individual Consultants		

## 2. Goods and Works Contracts Estimated to Cost \$1 Million or More

64. The following table lists goods and works contracts for which the procurement activity is either ongoing or expected to commence within the next 18 months.

Package Number	General Description	Estimated Value (\$)	Procurement Method	Review [Prior / Post/Post (Sampling)]	Bidding Procedure	Advertisement Date (quarter/year)	Comments
P1	Design, Supply, Installation and Commissioning of Rupsha 800 MW Combined Cycle Power Plant	663,000,000.00	ICB	Prior	1S1E	Q2 / 2017	Prequalification of Bidders: Y Domestic Preference Applicable: N Advance Contracting: Y Bidding Document: Plant Source of financing: ADB and IDB
P2	Design, Supply, Installation and Commissioning of Power Transmission Infrastructure for Rupsha 800 MW Combined Cycle Power Plant	23,200,000.00	ICB	Prior	1S2E	Q1 / 2018	Prequalification of Bidders: N Domestic Preference Applicable: Y Advance Contracting: Y Bidding Document: Plant Source of financing: ADB
P3	Design, Supply, Installation and Commissioning of Gas Supply Infrastructure for Rupsha 800 MW Combined Cycle Power Plant	5,000,000.00	ICB	Prior	1S2E	Q4 / 2017	Prequalification of Bidders: N Domestic Preference Applicable: Y Advance Contracting: Y Bidding Document: Plant Source of financing: ADB
P4	Supply, Installation and Related Services for ERP System	7,000,000.00	ICB	Prior	1S2E	Q2 / 2018	Prequalification of Bidders: N Domestic Preference Applicable: Y Advance Contracting: Y Bidding Document: Goods or IT products Source of financing: ADB

### 3. Consulting Services Contracts Estimated to Cost \$100,000 or More

65. The following table lists consulting services contracts for which the recruitment activity is either ongoing or expected to commence within the next 18 months.

Package Number	General Description	Estimated Value	Recruitment Method	Review (Prior / Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
C1	Project Management and Construction Supervision Consultant for Rupsha 800 MW Combined Cycle Power Plant Project	13,700,00.00	QCBS	Prior	Q1 / 2017	FTP	Assignment: International Quality-Cost Ratio: 80:20 Advance Contracting: Y Source of financing: ADB
C2	IT and ERP Specialist	500,000.00	ICS	Prior	Q1 / 2018	Biodata	Assignment: International Expertise: IT and ERP applications Advance Contracting: Y Source of financing: ADB
C3	External Safeguards Specialist	200,000.00	ICS	Prior	Q1 / 2018	Biodata	Assignment: National Expertise: environmental science Advance Contracting: Y Source of financing: ADB

### 4. Goods and Works Contracts Estimated to Cost Less than \$1 Million and Consulting Services Contracts Less than \$100,000 (Smaller Value Contracts)

66. The following table groups smaller-value goods, works and consulting services contracts for which the activity is either ongoing or expected to commence within the next 18 months.

#### B. Indicative List of Packages Required Under the Project

Goods and Works							
Package Number	General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Procurement Method	Review [Prior / Post/Post (Sampling)]	Bidding Procedure	Comments
None							

Consulting Services							
Package	General Description	Estimated	Estimated	Recruitment	Review	Type of	Comments <sup>9</sup>

Number		Value (cumulative)	Number of Contracts	Method	(Prior / Post)	Proposal <sup>8</sup>	
None							

### C. Non-ADB Financing

67. The following table lists goods, works and consulting services contracts over the life of the project, financed by Non-ADB sources.

Goods and Works				
General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Procurement Method	Comments
Supply and installation of equipment for inclusive education environment in school.	\$900,000	8	NCB and Shopping	Prior review by ADB

Consulting Services				
General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Recruitment Method	Comments
Implementation consultant for socially inclusive development	450,000	1	QCBS	
Biodiversity survey and monitoring consultant	50,000	1	QCBS	

### National Competitive Bidding

#### A. Regulation and Reference Documents

68. The procedures to be followed for national competitive bidding shall be those set forth for the National Open Tendering Method in *The Public Procurement Rules, 2008* (as updated and pursuant to *The Public Procurement Act, 2006* issued by the Government of Bangladesh) with the clarifications and modifications described in the following paragraphs required for compliance with the provisions of the Procurement Guidelines.

#### B. Procurement Procedures

##### 1. Eligibility

69. The eligibility of bidders shall be as defined under section I of the Procurement Guidelines; accordingly, no bidder or potential bidder should be declared ineligible for reasons other than those provided in section I of the ADB's Procurement Guidelines (2015, as amended from time to time).

##### 2. Advertising

70. The posting of NCB specific notices for contracts valued at less than \$1 million on ADB's website is not required but is highly recommended.

### **3. Location of Bid Submission**

71. Submission of bids to 'primary' and 'secondary' locations, or 'multiple droppings' of bids, shall not be required or allowed. Advertisements and bidding documents shall specify only one location for delivery of bids.

### **4. Bid Price as Percentage of Estimate**

72. Bids shall not be invited on the basis of percentage above or below the estimated cost, and contract award shall be based on the lowest evaluated bid price of responsive bid from eligible and qualified bidder.

### **5. Lottery**

73. A lottery system shall not be used to determine a successful bidder, including for the purpose of resolving deadlocks.

### **6. Rejection of All Bids and Rebidding**

74. Bids shall not be rejected, and new bids solicited without ADB's prior concurrence.

## **C. Bidding Documents**

### **7. Anti-Corruption**

75. Definitions of corrupt, fraudulent, collusive and coercive practices shall reflect the latest ADB Board-approved Anti-Corruption Policy definitions of these terms and related additional provisions (such as conflict of interest, etc.).

### **8. Qualification Requirements**

76. Qualification criteria and specific requirements must be explicitly stated in the bidding documents and applied consistently during bid evaluation.

### **9. Rejection of Bids**

77. A bid shall not be rejected on the grounds that its bid price is not within a percentage range above or below the contract estimate.

### **10. ADB Policy Clauses**

78. A provision shall be included in all NCB works and goods contracts financed by ADB requiring suppliers and contractors to permit ADB to inspect their accounts and records and other documents relating to the bid submission and the performance of the contract, and to have them audited by auditors appointed by ADB.

79. A provision shall be included in all bidding documents for NCB works and goods contracts financed by ADB stating that the Borrower shall reject a proposal for award if it determines that the bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for the contract in question.

80. A provision shall be included in all bidding documents for NCB works and goods contracts financed by ADB stating that ADB will declare a firm or individual ineligible, either indefinitely or for a stated period, to be awarded a contract financed by ADB, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices or any integrity violation in competing for, or in executing, ADB-financed contract.

#### **D. Consultant's Terms of Reference**

81. All terms of references of the consultants are in Appendix 1 of this PAM.

### **VII. SAFEGUARDS**

82. The project is categorized as A for environment, B for involuntary resettlement and C for indigenous peoples. Following ADB's Safeguard Policy Statement (2009) and government laws, NWPCGL has prepared an environmental impact assessment (EIA) including environmental management plans (EMPs) and also a resettlement plan. The EIA and resettlement plan are composed of three volumes and each volume covers the 800 MW combined cycle power plant (CCPP), 12 km gas pipelines, and 29.3 km 230 kV overhead transmission lines. The draft EIA and resettlement plan have been disclosed on ADB's website on 23<sup>rd</sup> February 2018 and 5<sup>th</sup> March 2018, respectively. The contractors and NWPCGL will adhere to the EIA, EMPs, and resettlement plan. The 3<sup>rd</sup> volume of the resettlement plan will be updated upon finalization of the transmission line route alignment. As per the loan agreement, NWGPCL will record conditions of roads, agricultural land, and other infrastructure prior to starting transport materials and construction for gas pipeline and transmission line components. In the event of any unanticipated environmental impacts during project implementation, NWPCGL will take corrective actions, and update the EIA and EMPs and revise the resettlement plan, which will be disclosed on the ADB website. Any changes in project will be reflected in the EIA and will be disclosed. Environmental impacts have been assessed and mitigation measures proposed in the EIA and EMPs to minimize impacts on environment, health and safety as a result of project construction and operation. The pollutants emissions and noise level are within the national limits. The power plant will run through the maximum 500 hours/year by HSD and 5,632 hours by natural gas. The project area of influence is not the critical habitat for the endangered Ganges River Dolphin. The design of the intake and outfall follows the EHS guidelines for thermal power. The required makeup water flowrate is estimated at 2,010 m<sup>3</sup>/hour. The depth of river water intake channel has been decided based on the low water level and sufficient head to maintain the required velocity and discharge into the river water intake channel. The different types of effluent will be treated following the more stringent requirement as per the IFC guidelines and national regulations. Recommendations on biodiversity management from International Union for Conservation of Nature (IUCN) will be followed for dolphin and fish management and future monitoring activities as well. The CCPP project site used to be the residential areas and was separated by a boundary wall from the newsprint mills. As well, the project area was not used as dumping site after the operations were completed. As such, it is unlikely that the soil was contaminated by ink or dye. The risks of using of gas and HSD are manageable. The emergency response plan is prepared and will be disclosed to stakeholders. Land acquisition is not required for the project as the 800 MW CCPP will be located in a government owned land and the gas pipeline will follow the right of way of the existing roads. According to survey based on the current project design, five employees, 26 squatters, and seven households can be affected by the project. The impacts are not considered significant and compensation will be provided at replacement cost and livelihood will be restored in accordance with the entitlement matrix in the resettlement plan. There will not be any impacts on indigenous peoples.

83. At the project level, NWPCGL will be responsible for supervising, monitoring, auditing, and reporting to ADB on the implementation of the EMPs on a semiannual basis during construction and an annual basis during operation. The EMPs have been prepared to describe the anticipated impacts, monitoring requirements, and mitigation measures during the whole project. NWPCGL will report to ADB on the implementation of resettlement plan separately on a semiannual basis. The EMPs and relevant mitigation measures will be incorporated in contract documents for the engineering, procurement and construction (EPC) contractor(s). EPC contractor(s) are required to comply with the EMPs during pre-construction and construction stage and NWPCGL will monitor compliance. NWPCGL will ensure compliance with the EMPs during operation and maintenance stage. Corrective actions will be taken for any unanticipated impacts and inadequate safeguards implementation.

84. Described below are the institutional roles and responsibilities to ensure environmental and social safeguard measures are implemented during design, construction and operation phases. The project management unit (PMU) will be responsible for overall project planning and implementation, including procurement, accounting, quality assurance, social and environmental issues, and coordination with concerned agencies. NWPGCL will retain one permanent safeguard staff and hire a temporary social staff (consultant) and a temporary communication specialist at PMU level. After resettlement, the permanent staff will mainly be tasked with environment safeguards. NWPGCL will also engage qualified and experienced external expert(s) for environment, who will not be involved in day-to-day implementation and supervision of the Project, to verify environmental monitoring information.

85. The duties of PMU at field level include:

- (i) Conduct overall coordination, preparation, planning, and implementation of all field level activities;
- (ii) following ADB's Safeguards Policy Statement 2009, IFC's Environment, Health and Safety general guidelines and national regulations etc. at the project site;
- (iii) Undertake and supervise compensation to the affected persons based on the entitlement matrix in the resettlement plan;
- (iv) Oversight construction contractor(s) on monitoring and implementing mitigation measures during design, construction and operation phases of the project before contracts completed;
- (v) Advise and coordinate to finalize survey and detailed design and update that safeguard documents following detailed design;
- (vi) Engage in grievance redress and ensure the prompt resolution of complaints;
- (vii) Set up appropriate record keeping system;
- (viii) Disclose relevant information to the affected people and continue consultations;
- (ix) Provide training and awareness on environmental and social issues to the project staff and EPC contractor(s);
- (x) Preparation of semiannual and annual environmental monitoring reports and semiannual social monitoring reports; and
- (xi) Liaise with the concerned ministries, authorities, and government departments for the environmental and resettlement related issues of the project implementation.

86. Consultations with project stakeholders will continue through the pre-construction, construction and operation stages. A grievance redress mechanism will be set up by NWPGCL at the project site as soon as the project commences. The field officers will be able to response and resolve minor grievances, and PMU grievance committee will take it over if solution is not

provided. PMU grievance committee will provide a resolution within 15 days from the date of the complaints received. For complaints not resolved by the PMU, it will be filed to higher grievance redress committee to resolve. All complaint-related documentation such as minutes of the meetings and decisions will be summarized and become part of the environmental and social monitoring reports submitted to ADB. If the problem is not solved, the complainant can seek legal redress of the grievance in the appropriate courts. ADB's accountability mechanism will also be informed to the affected people by NWPGL.

87. **Climate change impact.** The project has medium climate change risk as climate change is a major environmental challenge for Bangladesh. Climate risk and vulnerability assessment had been undertaken and based on the result, several climate change adaptation measures have been adopted and incorporated in the project design. The amount of climate change adaptation financed by ADB is \$25.08 million, and the adaptations measures will be implemented through proper project management. Since, the project will displace 320 MW diesel or fuel-oil fired power plants and providing LNG gas pipeline to the existing 225 MW Khulna power plant currently operating on HSD replacing fuel from HSD to LNG. Thus, this is counted as climate change mitigation finance, and the amount of climate change mitigation financed by ADB is \$1645.53 million. The CO<sub>2</sub> emissions during construction is estimated to be 30,821 tons in accordance with ADB guidelines and the CO<sub>2</sub> emission from the CCPP power plant operating on LNG is estimated to be 1,764,239 tons per year. The annual net emission reduction through CCPP upon full implementation is estimated to be 1,098,781 tons of CO<sub>2</sub> and the annual net reduction of CO<sub>2</sub> of the Khulna plant by replacing fuel from HSD to LNG is estimated 179,425 ton per year.

88. **Prohibited investment activities.** Pursuant to ADB's Safeguard Policy Statement (2009), ADB funds may not be applied to the activities described on the ADB Prohibited Investment Activities List set forth at Appendix 5 of the Safeguard Policy Statement.

### VIII. GENDER AND SOCIAL DIMENSIONS

89. **Gender.** The proposed project is categorized as effective gender mainstreaming (EGM) and a gender action plan has been prepared. Key design features of the project are (i) providing a safe and inclusive education environment; (ii) training for safe and efficient use of electricity and electronics for the school teachers and students; (iii) technical and skills training to avail of employment and livelihood opportunities; and (iv) supporting for improved social and gender awareness in the energy sector. These activities will be undertaken with a focus on women with certain targets with support from JFPR. ADB will encourage NWPGL and sub-project developers to enhance the recruitment of women in the energy sector.

90. **Social.** The country faces energy shortages in the short to medium-term and must secure cost-effective, new and diversified energy sources. The proposed Rupsha 800 MW combined cycle power plant (CCPP) targets energy security in Bangladesh. The CCPP will be fueled by LNG which is a clean burning fuel with lower power generation costs with fewer pollutants. The major benefit of the project is enhanced energy security and additional electricity supply. Further, the project can contribute to poverty reduction by bringing economic activities and livelihoods opportunities around the project site and electricity provided area.

91. **HIV/AIDS.** Based on the poverty and social assessment, the risk that the project will increase HIV/AIDS incidence is not high. However, contractors will carry out HIV/AIDS awareness for their laborers at work sites, which will be monitored by the construction supervision consultants.



92. **Health.** NWPGCL will ensure that contractors adequately provide health and safety measures for the construction workers and further ensure that bidding documents include clauses on how contractors will address this, including an information and awareness raising campaign for construction workers on sexually transmitted diseases, including HIV/AIDS and human trafficking.

93. **Labor.** NWPGCL will ensure that civil works contractors comply with all applicable labor laws and regulations including (i) not to employ child labor for construction and maintenance activities, (ii) provision of appropriate facilities for women and children in construction campsites; and (iii) do not differentiate wages between men and women for work of equal value. NWPGCL will ensure that specific clauses ensuring these will be included in bidding documents.

## IX. PERFORMANCE MONITORING, EVALUATION, REPORTING, AND COMMUNICATION

### A. Project Design and Monitoring Framework

<b>Impact the Project is Aligned with</b>			
Energy security improved, and electricity supply increased (Perspective Plan of Bangladesh, 2010–2021: Making Vision 2021 a Reality) <sup>a</sup>			
<b>Results Chain</b>	<b>Performance Indicators with Targets and Baselines</b>	<b>Data Sources and Reporting Mechanisms</b>	<b>Risks</b>
<b>Outcome</b> Availability of efficient and cleaner energy increased	By 2023: a. Annual power generation in Bangladesh increased by 4,900 GWh (2017 baseline: 52,620 GWh)  b. 1,278,206 tons of carbon dioxide emissions per annum avoided (2017 baseline: 0 tons)	a–b. Bangladesh Power Development Board annual reports	Non-availability of natural gas to operate the Rupsha power plant due to delays in liquefied natural gas imports
<b>Outputs</b> 1. Efficient gas-fired power generation increased  2. Energy transfer systems upgraded  3. Institutional capacity of NWPGL strengthened	By 2022: 1. Two 400-megawatt combined cycle gas turbine units commissioned at the Rupsha power plant (2017 baseline: 0)  By 2021: 2a. 10 km of 24-inch and 2 km of 20-inch gas distribution pipelines built (2017 baseline: 0 km)  2b. One gas regulating, and metering station constructed (2017 baseline: 0)  2c. One 230 kV substation constructed at power plant site (2017 baseline: 0)  2d. 29 km of 230 kV double circuit transmission line constructed (2017 baseline: 0)  By 2022: 3a. Universal power plant operations training simulator installed (2017 baseline: 0)	1. Annual reports of NWPGL and quarterly project progress reports  2a–b. Annual reports of SGCL and quarterly project progress reports of the joint project implementation unit between NWPGL and SGCL established for the project  2c–d. Annual reports of Power Grid Company of Bangladesh Limited and quarterly project progress reports  3a–3b. Quarterly project progress reports, ADB mission's aide	Increases in prices of commodities and raw materials in the international market above projections and contingencies could result in cost overrun and delay project completion.

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
<p>4. Socially inclusive development of communities neighboring the project site pilot tested<sup>c</sup></p>	<p>3b. Enterprise resource planning system for NWPGL implemented and operational (2017 baseline: 0)</p> <p>3c. At least 30 NWPGL staff reported knowledge on (i) project management, (ii) monitoring and evaluation, (iii) operation and maintenance, (iv) safeguards, and (v) project communications (2017 baseline: 0)</p> <p>3d. At least 50 NWPGL staff reported knowledge on adopting gender equity features in company's future project designs and operations (2017 baseline: 0)</p> <p>3e. Socially and gender-inclusive community development strategy for NWPGL prepared<sup>b</sup> (2017 baseline: NA)</p> <p>By 2021:</p> <p>4a. At least 200 students and teachers (of which 30% are women) increased awareness on safe and efficient use of electricity (2017 baseline: 0)</p> <p>4b. At least 200 people (of whom 90% are from vulnerable households<sup>d</sup> and 30% are women) reported increased knowledge and skills on establishing livelihood activities and employment opportunities (2017 baseline: 0)</p> <p>4c. 10-kilowatt solar photovoltaic system,<sup>e</sup> two IT laboratories, and two science laboratories</p>	<p>memoires, and back-to-office reports</p> <p>3c–d. Participant feedback surveys</p> <p>3e. Quarterly project progress reports, ADB mission's aide memoires, and back-to-office reports</p> <p>4a–b. Participant feedback surveys; project progress reports; and final reports of consultants</p> <p>4c. Project progress reports; and final reports of consultants</p>	

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
	installed in two schools in the vicinity of the Rupsha power plant (2017 baseline: 0)		
<p><b>Key Activities with Milestones</b></p> <p><b>1. Efficient gas-fired power generation increased</b></p> <p>1.1 Issue prequalification documents in Q2 2017  1.2 Issue bid documents in Q1 2018  1.3 Award contract in Q3 2018  1.4 Construct power plant by Q1 2022  1.5 Commission power plant by Q2 2022</p> <p><b>2. Energy transfer systems upgraded</b></p> <p>2.1 Issue bid document for gas supply contract in Q4 2017  2.2 Award gas supply contract in Q3 2018  2.3 Construct gas distribution pipelines by Q4 2020  2.4 Issue bid document for power transmission in Q1 2018  2.5 Award power transmission contract in Q3 2018  2.6 Construct transmission line by Q4 2020</p> <p><b>3. Institutional capacity of NWPGL strengthened</b></p> <p>3.1 Supply and install power plant operation training simulator by Q2 2022  3.2 Implement and operate enterprise resource planning system by Q2 2022  3.3 Provide on-the-job training to NWPGL staff by Q2 2022</p> <p><b>4. Socially inclusive development of communities neighboring the project site pilot tested</b></p> <p>4.1 Recruit implementation consulting firm by Q2 2019  4.2 Deliver training to increase awareness on safe and efficient use of electricity by Q4 2019  4.3 Deliver technical and skills training by Q2 2021  4.4 Issue bid documents in Q4 2018  4.5 Award the contracts in Q1 2019  4.6 Install solar photovoltaic system and equip school with IT and science laboratories by Q4 2021</p>			
<p><b>Project Management Activities</b></p> <p>Recruit project management and construction supervision consultants for Rupsha power plant  Recruit external experts to validate safeguards monitoring reports and implementation of environmental management plan and resettlement plan  Deliver operational training for NWPGL staff  Conduct review missions</p>			
<p><b>Inputs</b></p> <p>ADB: \$500.0 million (regular OCR loan)  IDB: \$300.0 million (loan)  Government: \$338.5 million  JFPR: \$1.5 million (grant)</p>			
<p><b>Assumptions for Partner Financing</b></p> <p>ADB and IDB will jointly finance one contract package under output 1 on collaborative basis. ADB will finance 60% of the contract amount.</p>			

ADB = Asian Development Bank, GWh = gigawatt-hour, IDB = Islamic Development Bank, IT = information technology, JFPR = Japan Fund for Poverty Reduction, km = kilometer, kV = kilovolt, NWPGL = North-West Power Generation Company Limited, Q = quarter, SGCL = Sundarban Gas Company Limited.

<sup>a</sup> Government of Bangladesh, Ministry of Planning, Planning Commission. 2012. *Perspective Plan of Bangladesh, 2010–2021: Making Vision 2021 a Reality*. Dhaka.

<sup>b</sup> This will be developed based on the results of the pilot test under output 4.

<sup>c</sup> All activities under output 4 will be financed by the JFPR grant.

- <sup>d</sup> Vulnerable households are (i) households headed by women, persons with disabilities, or the elderly; (ii) households falling under the generally accepted indicator for poverty; and (iii) households that are landless or without legal title to land, subject to results of social survey and assessment.
- <sup>e</sup> Girls' and boys' schools will be connected to the national grid, and the solar panels fitted will be an additional source of cleaner and cheaper electricity.

Source: ADB.

## B. Monitoring

94. **Project performance monitoring.** Overall monitoring of each project component in terms of progress will be undertaken by the government, which will review monthly progress reports submitted by NWPGL. The steering committee, acting on behalf of the government, will monitor progress, procurement, quality, and contract management. In addition, ADB and NWPGL management will undertake regular site visits and provide guidance to the project director, the project PMU, and to project consultants. ADB and NWPGL will conduct semiannual reviews throughout the implementation of the project and will regularly monitor the (i) project output quality, (ii) implementation arrangements, (iii) implementation progress, and (iv) disbursements. Performance will be monitored based on indicators and targets stipulated in the design and monitoring framework. These will be reported quarterly through NWPGL's quarterly progress reports and after each ADB review mission. These quarterly reports will provide information necessary to update ADB's project performance reporting system.<sup>30</sup>

95. **Compliance monitoring.** The loans and project agreements specify undertakings and covenants that will be monitored through regular review missions and on a quarterly basis in discussion with NWPGL. Compliance with undertakings and loan covenants, social and environmental safeguards, and financial and economic aspects will be jointly monitored by ADB and NWPGL.

96. **Safeguards monitoring.** The contractors, NWPGL must adhere to the EMPs and resettlement plan during contract implementation as prepared in accordance with ADB's Safeguard Policy Statement (2009) and as agreed and/or endorsed by the government of Bangladesh. The contractors shall prepare and submit the monthly progress report in conformance to NWPGL requirements and shall indicate when, how and at what cost the contractors' plans to satisfy the requirements as per detailed specifications. NWPGL will provide environmental monitoring reports to ADB a semi-annual basis during construction and an annual basis during operation and submit separate social monitoring reports to ADB a semi-annual basis. The environmental and social monitoring reports will describe implementation progress of environment and resettlement activities and compliance issues and include quantitative monitoring data in accordance with the EIA/EMPs, environmental monitoring plans and resettlement plan, respectively. The environmental and social monitoring reports and the relevant safeguard reports will be posted to ADB website as required by ADB's Safeguard Policy Statement (2009) and Public Communications Policy 2011 and disclosed locally by NWPGL. In the event of any unanticipated environmental or resettlement impacts during implementation, or if monitoring identifies a breach of performance standards that should be complied with by NWPGL and/or their contractors, NWPGL will submit to ADB a time-bound corrective action plan or updated the EIAs and resettlement plan.

97. **Gender and social dimensions monitoring.** Gender and social data will be monitored, collated and analyzed to provide an indication of change in the life of beneficiaries, which in turn

<sup>30</sup> ADB's project performance reporting system is available at <http://www.adb.org/Documents/Slideshows/PPMS/default.asp?p=evaltool>.

will be important for recording the outputs and performance of the project. The implementation status of gender action plan will be reported to ADB through NWPGL with routine project progress reports and other monitoring reports. In addition, the inclusion and compliance with labor standards, health and gender aspects will be monitored through review of bidding documents, contract awards, and progress reports.

### **C. Evaluation**

98. ADB will conduct regular semi-annual review missions to review, discuss progress, and report on the project performance. A midterm review will be carried out two years after effectiveness of the loan. Within 6 months of physical completion of the project, NWPGL will submit a project completion report to ADB.<sup>31</sup>

### **D. Reporting**

99. NWPGL will provide ADB with (i) quarterly progress reports in a format consistent with ADB's project performance reporting system; (ii) consolidated annual reports including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions, (c) updated procurement plan, and (d) updated implementation plan for the next 12 months; and (iii) a project completion report within 6 months of physical completion of the project. To ensure that projects will continue to be both viable and sustainable, project accounts and the executing agency audited financial statement together with the associated auditor's report, should be adequately reviewed.

### **E. Stakeholder Communication Strategy**

100. The purpose of the stakeholder communication strategy (SCS) (Appendix 2 in this PAM) is to support the project in identifying project stakeholders and delivering efficient and effective engagement and communication so that their views and concerns are reflected in the project. The SCS can help to build a supportive stakeholder base for the project and to maintain stakeholder support. The subsequent communication and engagement approaches for the project stakeholders are identified and outlined in the communication strategy matrix of the SCS. Stakeholder analysis was conducted, and preferred channels of communication were developed. All communication will be in language suitable for the specific audience and will follow ADB's Public Communications Policy 2011.

## **X. ANTICORRUPTION POLICY**

101. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the project.<sup>32</sup> All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all project contractors, suppliers, consultants, and other service providers. Individuals and/or entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the project.<sup>33</sup>

102. To support these efforts, relevant provisions are included in the loan agreement and the bidding documents for the project.

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<sup>31</sup> Project completion report format is available at: <http://www.adb.org/Consulting/consultants-toolkits/PCR-Public-Sector-Landscape.rar>.

<sup>32</sup> Anticorruption Policy: <http://www.adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf>.

<sup>33</sup> ADB's Integrity Office web site: <http://www.adb.org/integrity/unit.asp>.

## **XI. ACCOUNTABILITY MECHANISM**

103. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make an effort in good faith to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.<sup>34</sup>

## **XII. RECORD OF CHANGES TO THE PROJECT ADMINISTRATION MANUAL**

104. All revisions and/or updates during the course of implementation will be retained in this section to provide a chronological history of changes to implemented arrangements recorded in the PAM, including revision to contract awards and disbursement S-curves.

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<sup>34</sup> Accountability Mechanism. <http://www.adb.org/Accountability-Mechanism/default.asp>.

## **TERMS OF REFERENCE**

### **A1. PROJECT MANAGEMENT AND CONSTRUCTION SUPERVISION CONSULTANT FOR RUPSHA 800-MEGAWATT COMBINED CYCLE POWER PLANT PROJECT**

#### **I. BACKGROUND**

1. The Government of Bangladesh has applied for financing from the Asian Development Bank (ADB) toward the cost of Rupsha 800-Megawatt Combined Cycle Power Plant Project. Part of this financing will be used to recruit project management and construction supervision consulting firm (consultant). The project's executing agency, North-West Power Generation Company Limited (NWPGL) is planning to develop and operate 800 megawatt (MW) combined cycle power plant (CCPP). The power plant will be constructed at the then Khulna newsprint mill area. It is situated in Khalishpur Upazila, Khulna District in the administrative division of Southwest Bangladesh. The site is 271 kilometer (km) away from Dhaka City.

#### **II. OBJECTIVES OF THE ASSIGNMENT**

2. NWPGL intends to procure the power plant on a turnkey basis, with the single contractor to be responsible for the site preparation and design, supply, delivery, erection, testing, and commissioning. The contractor is scheduled to be mobilized in the beginning of 2018.

3. Now NWPGL intends to recruit a consulting firm (the consultant) to assist NWPGL during project implementation. The role of the consultant in this process will be to assist NWPGL in assuring that all steps are undertaken properly, so that the completed plant will deliver the performance, reliability, and operational flexibility specified. The service of the consultant covers design approval,<sup>35</sup> supervision of construction activities; attending and supervision of the testing and commissioning of the power plant or a part thereof from the owner's perspective; and taking over the power plant including issuance of completion certificate (CC) and operational acceptance certificate (OAC).

4. All conditions of this terms of reference (TOR) are aimed at selecting a suitable consulting firm to carry out the consulting services for the project. The consulting services assignment requires a team of consultants that have extensive experience in procurement, design and construction of combined cycle gas turbine (CCGT) power plants, including design, preparation, and implementation of necessary social and environmental safeguards measures.

#### **III. SCOPE OF SERVICES**

##### **A. Project Management**

5. The consultant shall provide necessary technical support to NWPGL in order to manage and ensure that the project shall be completed within the schedule, meet quality requirements, ensuring the technical specifications as shown in the turnkey contract.

6. The consultant will prepare necessary project plans, progress reports, payment certificates, provisional and final take over certificates, claims evaluation reports, project final report, and any other project management documents as required in accordance with good practice and NWPGL and ADB requirements.

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<sup>35</sup> The employer will be responsible for the final approvals of design.



7. The consultant will assist NWPGL project management unit (PMU) in preparing and implementing a project performance monitoring system (PPMS) to evaluate effectiveness of the project. The PPMS will measure project performance against the parameters as set out in the design and monitoring framework (DMF) of the report and recommendation of the president. The PPMS will establish baseline data and benchmarks, collect necessary information, monitor progress, identify benefits, and evaluate social impact.

### **B. Design, Audit, and Construction Supervision**

8. The turnkey contract will cover design and construction of the new power plant facilities. The consultant will provide oversight of all aspects of the turnkey contractor's works. This will include (i) review and approval of the contractor's designs, (ii) developing and implementing a construction quality assurance program, (iii) monitoring contractor's schedule, (iv) inspection of materials before shipment upon arrival and upon erection, (v) comparison of as-built drawings to design, and (vi) and addressing shortcomings in any of these areas.

### **C. Testing and Commissioning**

9. For each component subject to test, the consultant will review the contractor's test procedures for compliance with manufacturers' requirements and design criteria. The consultant will witness selected tests and review the test results.

10. When the power plant is to generate power, NWPGL will initiate operational activities. The contractor will provide training on the operation of the power plant and all its systems. The consultant will assist NWPGL in this phase of the project and coordinate as required with the contractor.

### **D. Training and Capacity Development**

11. The consultant will work with NWPGL counterpart staff and provide capacity development through on the job training. In this regard it is envisaged that NWPGL will appoint counterpart staff to work with consultant's key experts. The consultant will also provide specific capacity development and training to environmental, project financial control and social & gender specialists working in NWPGL's PMU. This specific training will be designed to ensure that proper project financial controls are exercised, and that environmental management plan and social & gender action plan as specified in the project agreements are implemented.

### **E. Key Activities of the Assignment**

12. The key tasks under the consulting services assignment include, but are not limited to the following:

- (i) Establish and implement PPMS;
- (ii) Assist NWPGL in the management of the turnkey contract;
- (iii) Oversight of all aspects of the construction and inspect the construction activities as per inspection and test plan (ITP) in order to assure that it is being conducted properly;
- (iv) Assist in developing and implementing a quality assurance/control program for construction including ITP, review and approval of design, monitoring schedule, inspection of materials upon arrival and upon erection, review of documents to

- assure quality of delivered goods, comparison of as-built drawings to design, and addressing shortcomings in any of these areas;
- (v) Assisting NWPGL in the management of overall project progress and monthly construction progress of the turnkey contractor;
  - (vi) Assisting NWPGL in quality management of site survey works and design works carried out by the turnkey contractor;
  - (vii) Monitoring the progress of manufacture and testing witness of main equipment for the project at the manufacturer workshop;
  - (viii) Monitoring the quality of construction, installation, testing, commissioning of equipment, testing for determining guarantees parameters of contractor, and for Provisional Acceptance (PAC);
  - (ix) Assisting NWPGL in inspection and acceptance of the entire works from construction, installation period to commissioning, acceptance, taking-over and put the work into commercial operation;
  - (x) Review the contractor's test procedures for compliance with manufacturers' requirements and design criteria. The consultant will witness selected tests and review the test results. If test results are not satisfactory, the consultant will require that the problem causing failure is addressed and that the equipment to be re-tested;
  - (xi) Prepare and recommend an Operational Acceptance Certificate whenever due for the works of the contractor and advise NWPGL regarding work deficiencies, if any. The consultant will also confirm the remedial measures taken by the contractor;
  - (xii) Monitor and provide comments to training programs of the turnkey contractor;
  - (xiii) Review and approve list of spare parts, the special tools to be provided by the turnkey contractor;
  - (xiv) Assist NWPGL in monitoring environmental issues in accordance with ADB's Safeguards Policy Statement (2009) and applicable laws of Bangladesh;
  - (xv) Assist NWPGL in monitoring the implementation of the environmental management plan (EMP) and resettlement plans (RP) including the EMPs and RPs related to gas supply pipelines and power transmission lines in accordance with ADB's Safeguard Policy Statement 2009;
  - (xvi) Assist NWPGL in reviewing the detailed EMP and RP to be prepared by the contractors to ensure that such plan is consistent with the project's EMP and RP and is adequate to address environmental and social impacts arising from project execution;
  - (xvii) Prepare semiannual environmental and social safeguards monitoring reports for submission to ADB on implementation of EMPs and RPs and mitigation measures taken by contractors, environmental and social effects and project performance as specified in the EMPs and RPs;
  - (xviii) Assist project management unit in preparing quarterly progress report for submission to NWPGL management and ADB;
  - (xix) Assist NWPGL in monitoring and implementation of the social and gender programs;
  - (xx) Assist NWPGL in preparing the Project Completion Report following ADB's requirements; and
  - (xxi) Assist NWPGL during warranty period in accordance with the turnkey contract.

#### IV. TEAM COMPOSITION, QUALIFICATION REQUIREMENTS AND TASKS

13. The consultant shall have provided consulting engineering services involving design audit and construction supervision within the last 10 years, for at least one CCGT power plant project with capacity equal to or more than 200 MW in single unit.

14. The expected duration of the consulting services is 43 months. It is expected that about 351 person-months of international consulting services will be needed from a firm specializing in project management, design audit, construction supervision and commissioning of CCGT power plants. The team of international experts will be supported by about 333 person-months of national consulting services with expertise in similar areas. Prospective firms will propose at least 70% Man-Month as field input in order to ensure experts are available in the field for their timely input. Table A1 shows the indicative positions and their person-months.

**Table A1: Indicative Expertise and Person-Months**

№	Experts	Person-Months	
		International	National
1	Project Manager/Team Leader	41	-
2	Deputy Team Leader	-	37
3	Mechanical Engineer (gas and steam turbines)	24	27
4	Mechanical Engineer (heat recovery steam generator and balance of plant)	33	29
5	Electrical Engineer	32	26
6	Substation and Power Transmission Engineer	33	33
7	Instrumentation and Control Engineer	28	15
8	Civil Engineer	33	29
9	Quality Assurance and Control Specialist	34	34
10	Environmental Specialist	20	26
11	Social and Gender Specialist	20	26
12	Contract Administrator	31	29
13	Commissioning Engineer	12	12
14	Chemical Engineer	10	10
	<b>Total</b>	<b>351</b>	<b>333</b>

##### 1. Project Manager / Team Leader (international; 41 person-months)

15. An international project manager/team leader will be responsible for the overall quality and implementation of the consulting services assignment. He/she must have at least Bachelor's degree in mechanical/electrical engineering. Master's degree will be an advantage. The expert should have 15 years of consulting experience in design and project management of major power plant projects and 10-year experience as a project manager/team leader in similar assignment. Project management experience in development of CCGT power plant with capacity equal to or more than 200 MW in single unit will be an advantage. The tasks under this position include, but are not limited to the following:

- (i) Develop a comprehensive project work program and implementation schedule;
- (ii) Monitor project progress against plan, report on progress and propose remedial measures as necessary;

- (iii) Oversee the assignment and coordinate activities of consultant team, including both field and home office staff. Act as the team's contact point with NWPGCL and other stakeholders;
- (iv) Establish and maintain project performance monitoring system;
- (v) Review the project management (including administration) procedures of NWPGCL for the project implementation and, as appropriate recommend changes and/or new procedures in keeping with ADB and modern international practices;
- (vi) Review, check and certify/approve suppliers' equipment/ system design, and approve the technical documents;
- (vii) Witness and certify main equipment shop inspections;
- (viii) Advise and assist NWPGCL to develop and maintain a project quality assurance / control plan with preparation of ITP, and monitor that contractor's designs and works are executed in line with the plan and project requirements. As and when referred by NWPGCL, promptly advise on acceptability of such designs and works, and suggest corrective measures to be undertaken;
- (ix) Assist NWPGCL in supervising the installation, testing and commissioning of the main and ancillary equipment, plant and utilities including plant gas regulating and metering station. Monitor project progress against plan, report on progress, and propose remedial measures as necessary;
- (x) Review methods of statements and test procedures.
- (xi) Review contractor's claims for extension of time or additional costs; and undertake variation instructions and cost review; certify volume of works completed withdrawal applications and issue of monthly and final payment certificates;
- (xii) Assist in management of operation and maintenance activities;
- (xiii) Review of contractor safety procedure including hazard identification and risk assessment;
- (xiv) Prepare noncompliance report (defective works);
- (xv) Prepare preliminary punch list (list of incomplete works);
- (xvi) Witnessing commissioning, guarantee and acceptance tests and issue provisional acceptance for taking over;
- (xvii) Prepare check list of materials and spares to be handed over to the client by the turnkey contractor;
- (xviii) Prepare punch list (list of unfulfilled contractual obligations);
- (xix) Review and certification of testing and commissioning plan;
- (xx) Review of operation manuals;
- (xxi) Report on findings during the project implementation;
- (xxii) Assist NWPGCL in ensuring that its personnel receive adequate on-the-job training by the contractor on all relevant aspects of CCPP so that NWPGCL's personnel can independently perform the operation and maintenance functions;
- (xxiii) Delivering the required monthly reports including final reports;
- (xxiv) Prepare and submit final project completion report; and
- (xxv) Conduct other duties as reasonably requested by NWPGCL by the TOR.

## **2. Deputy Project Manager/Team Leader (national; 37 person-months)**

16. A national deputy project manager/team leader will support the international team leader in the overall project implementation as well implementation of the consulting services assignment. He/she must have at least bachelor's degree in mechanical/electrical engineering. Master's degree or higher recognized professional qualifications (viz. PEng, PMP) in the relevant field will be given preference. The expert should have 12 years of general experience in power sector. Project experience in development of gas fired combined cycle or thermal power plant

project will be an advantage. Work experience with international organizations is desirable. The tasks under this position include, but are not limited to the following:

- (i) Assist the team leader in various assignments as determined by the team leader;
- (ii) Assist the team leader to review the project management (including administration) procedures of NWPGL for the implementation of the project and, as appropriate recommend changes and or new procedures in keeping with ADB and modern international practices;
- (iii) Assist the team leader to review, check and certify suppliers' equipment design, and assist NWPGL in approving the technical documents;
- (iv) Advise and assist the team leader and NWPGL to develop and maintain a project quality assurance plan and monitor contractor's designs and works are executed in line with the plan and project requirements. As and when referred by NWPGL, promptly advise on acceptability of such designs and works, and suggest corrective measures to be undertaken;
- (v) Assist the team leader and NWPGL in supervising the installation, testing, and commissioning of the main and ancillary equipment, plant and utilities. Monitor project progress against plan, report on progress, and propose remedial measures as necessary;
- (vi) Assist the team leader to review contractor's claims for extension of time or additional costs; and undertake variation instructions and cost review; certify volume of works completed withdrawal applications and issue of monthly and final payment certificates;
- (vii) Assist the team leader to review, check and certify suppliers' equipment design, and assist NWPGL in approving the technical documents and as-built drawings;
- (viii) Assist the team leader in management of operation and maintenance activities;
- (ix) Assist the team leader to prepare noncompliance report (defective works);
- (x) Witnessing Commissioning Guarantee and Acceptance Tests. Assistance to prepare check list of materials/spares to be handed over to the client by turnkey contractor;
- (xi) Assist the team leader to prepare punch list (list of unfulfilled contractual obligations);
- (xii) Assist the team leader to review of operation manuals;
- (xiii) Assist the team leader in preparation and submission of final project completion report;
- (xiv) Assist in the development of a comprehensive project work program and implementation schedule;
- (xv) Supervise the operation & maintenance services during warranty period and assist NWPGL in issuing warranty claims to the turnkey contractor; and
- (xvi) Perform other functions as may be assigned or delegated by team leader from time to time during the tenure of assignment and as required by the TOR.

- 3. Mechanical Engineer (GT & ST) (international; 24 person-months); and**
- 4. Mechanical Engineer (HRSG & BOP) (international; 33 person-months)**

17. The international mechanical engineers (GT & ST and HRSG & BOP) must have at least Bachelor's degree in mechanical engineering. Master's degree in the relevant field will be an advantage. The experts should have 10 years of general experience in power sector. Experience in development of CCGT power plant project with capacity equal to or more than 200 MW in single unit is required. The tasks under these positions include, but are not limited to the following:

- (i) Assist the team leader in various assignments as determined by the team leader;
- (ii) Assist in the development of a comprehensive project work program and implementation schedule;
- (iii) Ensure training of client counterpart staff through on-the-job training and classroom training programs;
- (iv) Review, check, and certify suppliers' equipment and system design, and assist NWPGL in approving the technical documents;
- (v) Review methods of statements/test procedures;
- (vi) Witnessing site inspection as per ITP, commissioning guarantee and acceptance tests, and issue provisional acceptance for taking over;
- (vii) Prepare check list of materials and spares to be handed over to the client by the turnkey contractor;
- (viii) Assist in preparing punch list (list of unfulfilled contractual obligations);
- (ix) Assist in preparation and submission of final project completion report; and
- (x) Perform other functions as may be assigned or delegated by the team leader from time to time during the tenure of assignment and as required by the TOR.

- 5. Mechanical Engineer (GT & ST) (national; 27 person-months); and**
- 6. Mechanical Engineer (HRSG & BOP) (national; 29 person-months)**

18. The national mechanical engineers (GT & ST and HRSG & BOP) must have at least Bachelor's degree in mechanical engineering. Master's degree or higher recognized professional qualifications (viz. PEng, PMP) in the relevant field will be given preference. The experts should have 8 years of general experience in power sector. Experience in development of CCGT power plant project will be an advantage. Work experience with international organizations is desirable. The tasks under these positions are similar to those specified for international mechanical engineers.

- 7. Electrical Engineer (international; 32 person-months); and**
- 8. Substation and Power Transmission Engineer (international; 33 person-months)**

19. The international electrical engineer and international substation and power transmission engineer must have at least Bachelor's degree in electrical engineering. Master's degree in the relevant field will be an advantage. The experts should have 10 years of general experience in power sector. For electrical engineer project experience in development of gas fired combined cycle or thermal power plant project with capacity equal to or more than 200 MW in single unit will be an advantage. For power transmission engineer project experience in construction of 230 kV or higher voltage substation and transmission lines is desirable. The key tasks under these positions include, but are not limited to the following:

- (i) Review the existing design work on electrical works related to generator, transformer, switchboards, cabling, and bus bar arrangements;
- (ii) Review the existing design work on the transmission network including plant substation and control system completed to date;
- (iii) Ensure training of client counterpart staff through on-the-job training and classroom training programs;
- (iv) Finalize system design and technical requirements with NWPGL such as equipment ratings, type of equipment to be used, areas to be supplied, spares required and maintenance requirements;

- (v) Provide technical design information to NWPGL to enable them to obtain the necessary way leaves and construction permits for the new lines and substations;
- (vi) Prepare specifications for equipment and services required for the transmission and network and control system;
- (vii) Monitor tests on completion, pre-commissioning and commissioning procedures, provide commissioning assistance, and monitor rectification of detail and outstanding works for issue of taking-over certificate;
- (viii) Prepare noncompliance report (defective works);
- (ix) Prepare preliminary punch list (list of incomplete works);
- (x) Prepare check list of materials and spares to be handed over to the client by the turnkey contractor;
- (xi) Prepare punch list (list of unfulfilled contractual obligations);
- (xii) Assist in preparation and submission of final project completion report;
- (xiii) Assist in training of NWPGL staff through on-the-job training and classroom training programs, covering the installation techniques required for high voltage lines, low voltage connections, high voltage switchgear installation and in associated maintenance and repair procedures; and
- (xiv) Perform other functions as may be assigned or delegated by team leader from time to time during the tenure of assignment and as required by the TOR.

**9. Electrical Engineer (national; 26 person-months); and**

**10. Substation and Power Transmission Engineer (national; 33 person-months)**

20. The national electrical engineer and the national substation and power transmission engineer must have at least Bachelor's degree in electrical engineering. Master's degree or higher recognized professional qualifications (viz. PEng, PMP) in the relevant field will be given preference. The experts should have 8 years of general experience in power sector. Project experience in development of gas fired combined cycle or thermal power plant project will be an advantage for the electrical engineer. Experience in 230 kV or a higher capacity substation and transmission line project is desirable for the substation and transmission engineers. Work experience with international organizations is preferred for all experts. The tasks under these positions are similar to those specified for international electrical/substation/transmission engineers.

**11. Instrumentation and Control Engineer (international; 28 person-months)**

21. An international instrumentation and control engineer must have at least Bachelor's degree in electrical / electrical and electronic engineering. Master's degree in the relevant field will be an advantage. The expert should have 10 years of general experience in power sector. Experience in development of gas fired combined cycle or thermal power plant project with capacity equal to or more than 200 MW in single unit is desirable. The tasks under this position include, but are not limited to the following:

- (i) Review the existing design work on controls of CAPP e.g. DCS, SCADA, SAS, and all instrumentation;
- (ii) Review the existing design work on the transmission including plant substation. Ensure training of client counterpart staff through on-the-job training and classroom training programs;
- (iii) Finalize system design and technical requirements with NWPGL such as equipment ratings, type of equipment to be used, areas to be supplied, spares required, and maintenance requirements;

- (iv) Monitor tests on completion, pre-commissioning and commissioning procedures, provide commissioning assistance, and monitor rectification of detail and outstanding works for issue of taking-over certificate;
- (v) Prepare noncompliance report (defective works);
- (vi) Prepare preliminary punch list (list of incomplete works);
- (vii) Prepare check list of materials/spares to be handed over to the client by turnkey contractor;
- (viii) Prepare punch list (list of unfulfilled contractual obligations);
- (ix) Assist in preparation and submission of final project completion report; and
- (x) Assist in training of NWPGL staff through on-the-job training and classroom training programs, covering the installation techniques required for high voltage lines, low voltage connections, high voltage switchgear installation and in associated maintenance and repair procedures; and
- (xi) Perform other functions as may be assigned or delegated by team leader from time to time during the tenure of assignment and as required by the TOR.

## **12. Instrumentation and Control Engineer (national; 15 person-months)**

22. A national instrumentation and control engineer must have at least Bachelor's degree in electrical/electronic engineering. Master's degree or higher recognized professional qualifications (viz. PEng, PMP) in the relevant field will be an advantage. The expert should have 8 years of general experience in power sector. Project experience in development of gas fired combined cycle or thermal power plant project will be an advantage. Work experience with international organizations is desirable. The tasks under this position are similar to those specified for international instrumentation and control engineer.

## **13. Civil Engineer (international; 33 person-months)**

23. An international civil engineer must have at least bachelor's degree in civil engineering. Master's degree in the relevant field will be an advantage. The expert should have 10 years of experience in major infrastructure projects. Experience in consulting services for development of gas fired combined cycle or thermal power plant project with capacity equal to or more than 200 MW in single unit is desirable. The tasks under this position include, but are not limited to the following:

- (i) Review contractors design submissions and supervise contractors works;
- (ii) Ensure training of client counterpart staff through on-the-job training and classroom training program;
- (iii) Review the existing civil work/structural design including power block and cooling tower, identify key technical challenges and risks, and prepare remedial measures;
- (iv) Monitor and ensure turnkey contractor's work on repair of earthworks and concrete along the existing waterways and general civil works related to the rehabilitation of the intake area and power house;
- (v) Assess the waterways conditions and assist in developing options for protecting the waterways as necessary;
- (vi) Prepare noncompliance report (defective works);
- (vii) Prepare preliminary punch list (list of incomplete works);
- (viii) Prepare punch list (list of unfulfilled contractual obligations);
- (ix) Assist in preparation and submission of final project completion report; and
- (x) Perform other functions as may be assigned or delegated by team leader from time to time during the tenure of assignment and as required by the TOR.



**14. Civil Engineer (national; 29 person-months)**

24. A national civil engineer must have at least bachelor's degree in civil engineering. Master's degree or higher recognized professional qualifications (viz. PEng, PMP) in the relevant field will be an advantage. The expert should have 8 years of experience in major infrastructure projects. Project experience in development of gas fired combined cycle or thermal power plant project is desirable. Work experience with international organizations will be an advantage. The tasks under this position are similar to those specified for international civil engineer.

**15. Quality Assurance and Quality Control Specialist (international; 34 person-months)**

25. An international quality assurance and quality control specialist must have at least Bachelor's degree in any discipline of engineering. Master's degree in the relevant field will be an advantage. The experts should have 10 years of general experience in power sector. Experience in consulting services for development of gas fired combined cycle or thermal power plant projects with capacity equal to or more than 200 MW in single unit is desirable. The tasks under this position include, but are not limited to the following:

- (i) Review all the quality monitoring and assessment of equipment and works;
- (ii) Assist the employer in pre-shipment (for factory acceptance test of selected equipment) and post-shipment inspections of imported materials (all items)
- (iii) Ensure training of client counterpart staff through on-the-job training and classroom training program;
- (iv) Prepare noncompliance report (defective works);
- (v) Prepare preliminary punch list (list of incomplete works);
- (vi) Prepare punch list (list of unfulfilled contractual obligations);
- (vii) Assist in preparation and submission of final project completion report; and
- (viii) Perform other functions as may be assigned or delegated by team leader from time to time during the tenure of assignment and as required by the TOR.

**16. Quality Assurance and Quality Control Specialist (national; 34 person-months)**

26. A national quality assurance and quality control specialist must have at least bachelor's degree in any discipline of engineering. Master's degree or higher recognized professional qualifications (viz. PEng, PMP) in the relevant field will be an advantage. The expert should have 8 years of experience in power sector. Project experience in development of gas fired combined cycle or thermal power plant project is desirable. Work experience with international organizations will be an advantage. The tasks under this position are similar to those specified for International quality assurance and quality control specialist.

**17. Environmental Specialist (international; 20 person-months)**

27. An international environmental specialist must have at least Master's degree or equivalent, in environmental science, environmental management, environmental engineering or other related fields. He/she should have a 10 years' experience in carrying out environmental impact assessment and management of infrastructure projects preferably in the power sector, with at least 5 years' experience in supervision, monitoring and implementation of environmental management and monitoring plan (EMMP). Experience in consulting services for implementation

of gas fired combined cycle or thermal power plant projects will be beneficial. The tasks under this position include, but are not limited to the following:

- (i) Supervise the implementation process of the EMMP detailing environmental mitigation measures to address each identified impact, and recommend appropriate environmental mitigation measures;
- (ii) Ensure that necessary EMMP provisions will be included in the contracts with the turnkey contractors for further implementation and compliance;
- (iii) Assist NWPGL in implementing EMMP and support NWPGL in ensuring compliance with loan covenants related to environmental safeguards;
- (iv) Assist MWGPCL to update EMMP, undertake additional environmental impact assessment, improve monitoring indicators and prepare corrective action plans, if deemed necessary;
- (v) Assist NWPGL in preparing semiannual environmental impact monitoring reports;
- (vi) Support NWPGL to conduct meaningful consultations with the project affected groups and develop/implement grievance redress mechanism;
- (vii) Assess costs, responsibilities, schedule, location, and monitoring framework associated with the implementation of the EMMP and mitigation measures; and
- (viii) Advise NWPGL and EPC contractors on any environmental safeguards compliance issues and provide training as needed.

#### **18. Environmental Specialist (national; 26 person-months)**

28. A national environmental specialist must have at least Master's degree or equivalent, in environmental science, environmental management, environmental engineering or other related fields. The expert should have 5 years of experience in carrying out environmental assessment and management of infrastructure projects preferably in the power sector. Experience in environmental monitoring of implementation of gas fired combined cycle or thermal power plant projects is desirable. Work experience with international organizations will be an advantage. The tasks under this position are similar to those specified for International Environmental Specialist.

#### **19. Social and Gender Specialist (international; 20 person-months)**

29. An international social and gender specialist must have at least master's degree or equivalent, in applied social science, anthropology or other related fields. He/she should have a 10years experience in carrying out social impact assessment and inclusive gender activities for major infrastructure projects, preferably in the power sector, with at least 5 years' experience in supervision, monitoring and implementation of resettlement plans (RP) and gender action plans (GAP). Experience in consulting services for implementation of gas fired combined cycle or thermal power plant projects will be beneficial. The tasks under this position include, but are not limited to the following:

- (i) Undertake a cumulative assessment of the anticipated social impacts of the project, including conducting consultation with the project affected groups;
- (ii) Assist NWPGL in establishing grievance redress mechanism (GRM) and support in managing grievance redressal processes throughout the project implementation;
- (iii) Ensure that necessary RP and gender action plan (GAP) provisions will be included in the contracts with the turnkey contractors for further implementation and compliance;

- (iv) Assist NWPGCL in implementing RP and GAP and support NWPGCL in ensuring compliance with loan covenants related to social safeguards;
- (v) Assist NWGPCL to update RP and GAP, improve monitoring indicators and prepare corrective action plans, if deemed necessary;
- (vi) Assist NWPGCL in preparing semiannual social impact monitoring reports;
- (vii) Once the RP and GAP are fully implemented, support NWGPCL to evaluate the results, and prepare completion report;
- (viii) Assist NWPGCL to disclose relevant safeguards and gender information and continue to have meaningful consultations with the affected people;
- (ix) Ensure training of client counterpart staff through on-the-job training and classroom training program;
- (x) Advise NWPGCL on any social safeguards compliance and gender issues; and
- (xi) Implementation of JFPR of ADB for the project.

**20. Social and Gender Specialist (national; 26 person-months)**

30. A national social and gender specialist must have at least Master's degree or equivalent, in applied social science, anthropology or other related fields. The expert should have 5 years of experience in carrying out social impact assessment and inclusive gender activities for major infrastructure projects, preferably in the power sector. Experience in environmental monitoring of implementation of gas fired combined cycle or thermal power plant projects is desirable. Work experience with international organizations will be an advantage. The tasks under this position are like those specified for international social and gender specialist.

**21. Contract Administrator (international; 31 person-months)**

31. An international contract administrator must have at least Bachelor's degree in accounting and/or business. Master's degree in the relevant field will be an advantage. The experts should have 10 years' experience as contract administrator on major infrastructure projects. Experience in consulting services for development of gas fired combined cycle or thermal power plant projects with capacity equal to or more than 200 MW in single unit will be an advantage. The tasks under this position include, but are not limited to the following:

- (i) Prepare an overall project disbursement plan, monitor costs, and maintaining project accounts in compliance with accounting standards acceptable to ADB;
- (ii) Develop payment certification procedures;
- (iii) Assist NWPGCL to review invoices raised and advise on the accuracy of the same;
- (iv) Assist NWPGCL in preparing withdrawal applications and disbursement projections;
- (v) Establish a computerized monitoring program using off-the-shelf software packages; and
- (vi) Evaluate contractor's claims for additional costs and time extensions, if any;

**22. Contract Administrator (national; 29 person-months)**

32. A national contract administrator must have at least Bachelor's degree in accounting and/or business. Master's degree in the relevant field will be an advantage. The expert should have 8 years of professional experience, preferably in the power sector. Consulting services experience in development of gas fired combined cycle or thermal power plant project will be beneficial. Work experience with international organizations will be an advantage. The tasks under this position are similar to those specified for international contract administrator.

### **23. Commissioning Engineer (international; 12 person-months)**

33. An international commissioning engineer must have at least Bachelor's degree in electrical/mechanical engineering. Master's degree in the relevant field will be an advantage. The expert should have 10 years of experience in power sector infrastructure projects. Experience in consulting services for development of gas fired combined cycle or thermal power plant project with capacity equal to or more than 200 MW in single unit is desirable. The tasks under this position include, but are not limited to the following:

- (i) Coordinate and witness functional and operational performance, quality of work, and acceptance tests, with a view to issuing the contractual provisional and final operational acceptance, and/or completion certificates, as per the general conditions of the supply and installation contract;
- (ii) Verify quality, content, and completeness of Contractor's as-built drawings, manuals, operation and maintenance instructions, and similar contractual documentation for all work;
- (iii) Assist team leader in checking and certifying all testing and commissioning plans and procedures, and preparation of reports;
- (iv) Assist NWPGL in supervising and monitoring all stages of testing and commissioning;
- (v) Prepare noncompliance report (defective works);
- (vi) Prepare punch list (list of unfulfilled contractual obligations);
- (vii) Witnessing commissioning guarantee and acceptance tests and issue provisional acceptance for taking over;
- (viii) Assist in preparation and submission of final project completion report; and
- (ix) Perform other functions as may be assigned or delegated by team leader from time to time during the tenure of assignment and as required by the TOR.

### **24. Commissioning Engineer (national; 12 person-months)**

34. A national commissioning engineer must have at least Bachelor's degree in electrical/mechanical engineering. Master's degree or higher recognized professional qualifications (viz. PEng, PMP) in the relevant field will be an advantage. The expert should have 8 years of experience in power sector. Project experience in development of gas fired combined cycle or thermal power plant project is desirable. Work experience with international organizations will be an advantage. The tasks under this position are like those specified for international commissioning engineer.

### **25. Chemical Engineer (International; 10 person-months)**

35. An international chemical engineer must have at least Bachelor's degree in chemical engineering. Master's degree in the relevant field will be an advantage. The expert should have 10 years of experience in projects related to water treatment/chemical treatment plant or power plant. Experience in consulting services for development of gas fired combined cycle or thermal power plant project with capacity equal to or more than 200 MW in single unit is desirable. The tasks under this position include, but are not limited to the following:

- (xi) Review contractors design submissions and supervise contractors works;
- (xii) Ensure training of client counterpart staff through on-the-job training and classroom training program;

- (xiii) Review the operational philosophy/design of water treatment plant, chemical treatment plant, effluent treatment plant and advise the chemicals to be used during operation;
- (xiv) Render construction supervision of water treatment plant, chemical treatment plant, effluent treatment plant;
- (xv) Assess of the impact of Hazardous/explosive materials etc;
- (xvi) Prepare preliminary punch list (list of incomplete works);
- (xvii) Prepare punch list (list of unfulfilled contractual obligations);
- (xviii) Assist in preparation and submission of final project completion report; and
- (xix) Perform other functions as may be assigned or delegated by team leader from time to time during the tenure of assignment and as required by the TOR.

## **26. Chemical Engineer (National; 10 person-months)**

36. A national chemical engineer must have at least Bachelor's degree in chemical engineering. Master's degree or higher recognized professional qualifications (viz. PEng, PMP) in the relevant field will be an advantage. The expert should have 8 years of experience in major chemical/power projects. Project experience in development of gas fired combined cycle or thermal power plant project is desirable. Work experience with international organizations will be an advantage. The tasks under this position are similar to those specified for international civil engineer.

## **V. REPORTING REQUIREMENTS AND TIME SCHEDULE FOR DELIVERABLES**

37. The consultant will work closely with the NWPGCL and the ADB project team. The consultant will prepare weekly, monthly and quarterly progress reports as applicable based on the field data. Table A2 provides the key outputs and reports are as follows:

**Table A2: Indicative List of Reports and Outputs**

<b>No</b>	<b>Activity</b>	<b>Due by Month</b>
1	Inception Report	1
2	Project Work Program and Implementation Schedule	3
3	Project Performance Monitoring System	3
4	Safety Plan	3
5	Quality Assurance Plan	3
6	Progress Report	Monthly
7	Detailed Progress Report	Quarterly
8	Environmental and Social Impact Monitoring Reports	Semiannually
9	Counterpart Training Plan	6
10	Withdrawal Applications	As required
11	Claims Evaluation	As required
12	Project Completion Report	Project Completion
13	Consultant's Final Report	Project Completion

**VI. CLIENT'S INPUT AND COUNTERPART PERSONNEL**

38. NWPGL will deploy a competent project management team including project director, field engineers, accountants and other personnel as and when required in order to oversee the project activities from owner's perspective. NWPGL will cooperate with consultant in every aspect so that consultant should not face any difficulties in their assignment to be carried out as per TOR described above. However, the below facilities from the NWPGL will be ready for consultant, free of cost:

- (i) Site office facility at project area;
- (ii) Office equipment/furniture, land telephone set, printer, scanner, computer, office stationery, internet facility and consumables; and
- (iii) Any support required from client for Visa approval to visit Bangladesh/project site.

## **TERMS OF REFERENCE**

### **A2. ERP AND IT SPECIALIST**

#### **I. OBJECTIVES OF THE ASSIGNMENT**

1. The objective of this assignment is to engage a consultant who will be associated with the NWPGCL, right from conceptualization till its technical and financial closure for enterprise resource planning (ERP), based information technology (IT) solution. All back-end office processes like financial management, accounting, asset Management, human resource management, inventory management, equipment and material procurement, project monitoring would be integrated through the ERP package. The consultant is required to study the feasibility of the ERP solution, workout infrastructure requirement, prepare budgetary estimates, functional requirement specifications (FRS), RFP and provide assistance in selection and evaluation of an implementation partner for the ERP project and assist during implementation, technical and financial closure of the project etc.

#### **II. SCOPE OF WORK**

2. The broad scope work shall cover the following activities, phased into the following three following distinct components and the detailed scope, but not limited thereto, under each phase is given below.

- (i) Pre-implementation – preparation of roadmap and RFP and selection of ERP partner;
- (ii) Implementation – change management, implementation monitoring and support; and
- (iii) Post implementation – post implementation audit, financial and technical closure.

#### **2.1 Phase-1: Pre-implementation-preparation of road map and RFP and selection of ERP partner**

##### **2.1.1 Activity A: As-Is Assessment**

3. The As-Is assessment phase will consist of the following key activities.

##### **A.1 Assessment of Processes**

- (i) Study organizational hierarchy, department, roles and responsibilities of personnel/officials within NWPGCL.
- (ii) Study the existing capacities in terms of available manpower, skills and competencies in NWPGCL to identify and address the gaps keeping in view the future requirements.
- (iii) Study the existing procedures/processes within the organizational functions such as human resources, payroll, finance, asset management, maintenance management, materials management and procurement, energy chain management, project management and any other business processes.
- (iv) Study the procedures in place to manage the available data of the above-mentioned functions, whether manual-entry, automated, combination of manual and automated, involvement of outsourcing, whether in hard-copy/soft-copy etc.
- (v) Understand the challenges being faced currently in the various business functions

- listed above.
- (vi) Study the key entities that play a role in the business processes of the above-mentioned functions.

## **A.2 Assessment of existing IT infrastructure**

- (i) Study the available IT infrastructure being used and to be created by NWP GCL along with their user departments and functionalities.
- (ii) Study the usage of various existing and to be used software applications and identify the challenges faced at various levels.
- (iii) Study various aspects of existing and to be used applications like licensing, possibility of integration, application maintenance procedures, operating system, databases, architecture, any enhancement plans that are being undertaken etc.
- (iv) Study the functionalities/processes that are supported by the existing and to be used applications.
- (v) Study the hardware available at headquarters and other offices and assess possibilities to leverage the existing capacities more effectively in future.

### **2.1.2 Activity B: To-Be Designed**

4. Based on the detailed assessment conducted in the As-Is Assessment phase, the consultant should develop the IT proposed ERP functionality architecture based on the following objectives:

- (i) Meeting NWP GCL's requirement for a state of the art data center facility at the HQ.
- (ii) Meeting NWP GCL's requirement to establish a state of art processes as part of ERP.
- (iii) Meeting NWP GCL's generation-business specific requirements.
- (iv) Implementing the technology design based on leading industry standards while addressing the need for scalability and flexibility without undermining the data integrity and transparency required for enabling the processes.
- (v) Leveraging various existing and planned components of IT solutions.
- (vi) Ensuring integration as necessary with various existing and planned IT solutions.

5. The following are the activities envisaged as part this phase.

## **B.1 Solution Design for ERP**

6. Based on the assessment of processes undertaken as part of the As-Is assessment phase, the consultant in discussion with NWP GCL shall identify and propose the ERP modules to be adopted based on consideration of various aspects such as- strategy for procurement of the modules, options for phased implementation, merits of each module etc.

- (i) Consultant will take into consideration NWP GCL's need to manage and administer specific business requirements as part of the ERP solution.
- (ii) Consultant will take into consideration the legacy applications which are required to be continued as per NWP GCL's needs and design the solution keeping in mind the integration with the legacy applications.
- (iii) Consultant will discuss with NWP GCL to design and finalize the likely ERP modules to be adopted viz financial management, HR management, asset management, maintenance management, materials management and



procurement Management, energy chain management, project management, etc. Consultants have to ensure that there is no duplication of any work *vis-a-vis* NWPGL with any other projects and initiatives undertaken by NWPGL.

- (iv) Consultant shall deploy suitable Business Intelligence (BI) tools in the ERP structure to ensure that both BI and ERP can be integrated for decision making.
- (v) Consultant will discuss with NWPGL on the other critical requirements of the ERP solution (ex. training, change management), and formulate a strategy for addressing these requirements.
- (vi) Consultant will develop the technical architecture and the solution architecture for implementing the ERP solution.
- (vii) Consultant will develop the licensing requirements of the ERP solution based on usage requirements of NWPGL.
- (viii) Consultant will discuss and finalize the scope of the implementation, and the approach for phased implementation.
- (ix) Consultant shall evaluate standard features & capabilities of the relevant ERP commercial-off-the-shelf (OTS) software solutions available and widely adopted.
- (x) Consultant shall draft the detailed functional requirement specifications (FRS) for each module. This can be included as specifications in the Terms or Reference for the selection of the Implementation Agency.
- (xi) Consultant shall discuss the draft requirements with NWPGL prior to finalizing the same.
- (xii) Consultant shall also identify and incorporate the unique/custom requirements of the process owners of the concerned business functions of NWPGL.
- (xiii) Consultant shall conduct presentations and workshops for building common vision and understanding of BI and the ERP system and developing best business practices.
- (xiv) Consultant shall prepare best suited IT Roadmap and ERP implementation project plan including the strategy before buying and installing ERP system as per approved budgetary plan.
- (xv) Consultant shall prepare a detailed feasibility report covering the scope of work, budgetary estimate, information system architecture, documentation and work flow etc.
- (xvi) Consultant shall assist in re-engineering and identifying organization obsolete functions in the organization - oriented management practices and to recommend for ERP based process or change / customize ERP and use BI for customization.

## **B.2 Designing IT Infrastructure**

- (i) The existing IT infrastructure as well as the infrastructure planned under any other scheme for NWPGL Headquarters as well as other offices shall be assessed before defining additional requirements of IT infrastructure.
- (ii) Consultant shall take into consideration the redundant telecommunication connectivity which is existing and suggest the requirements for the proposed ERP system.
- (iii) Consultant shall estimate and develop the specifications for all the IT infrastructure components required for deploying the information systems across the headquarters and other offices of NWPGL, including:
  - a. Desktops, hardware, network requirements, and peripherals
  - b. Servers
  - c. Storage devices
  - d. Network devices

- e. Network connectivity
  - f. Security devices
  - g. Software
  - h. Asses the office space and furniture requirements for the Data Centre and other relevant places.
- (iv) Consultant shall suggest ways and means to leverage the existing investments in IT before detailing out the additional capital (CAPEX) and operational (OPEX) expenditure based on the estimate developed.
  - (v) Consultant shall adopt latest technology standards and practices for developing the specifications for the required IT infrastructure.
  - (vi) Consultant shall draft detailed requirements that can be included as specifications in the Terms of Reference for the selection of the Implementation Agency.

### **B.3 Preparation of the IT Budget (Capital & Operational Expenditure)**

- (i) Based on the specifications prepared for various IT products and services identified, the consultant shall prepare a Detailed Project Report including Detailed IT Budget with CAPEX and OPEX outlay required for undertaking the proposed initiatives
- (ii) This budget should clearly state CAPEX and OPEX investments as well as year-on-year annual budget requirements
- (iii) Consultant shall assist NWPGL in seeking approval of the IT budget from the concerned authorities

#### **2.1.3 Activity C: Selection of Implementing Agency**

7. Based on the finalization of the IT goods and services, the consultant shall assist NWPGL in the preparation of a Request for Proposal for the procurement, implementation and management of the ERP solution and for the selection of a qualified and capable implementing agency.

### **C.1 Preparation of tender documents for the ERP solution**

- (i) Based on the type of data center facility, list of IT goods and services identified, and the corresponding specifications defined, the consultant shall prepare a Request for Proposal (RFP) for selection of the implementation agency.
- (ii) The RFP should acknowledge the procurement strategy established as part of the previous activities.
- (iii) To prepare tender document i.e. Request for Proposal (RFP)/ NIT document for selection of an Implementation Partner to deliver the ERP software product, required hardware and data center facility to be establishes along with requisite hands on training. This should cover the scope of work, technical & functional requirements of the ERP system as well as the commercial, contractual terms & conditions etc. The RFP will also include the draft contract for the project implementation partner.
- (iv) All relevant sections/volumes of a Request for Proposal that include but not limited to the following shall be prepared:
  - a. Pre-qualification criteria
  - b. Evaluation criteria
  - c. Scope of work
  - d. Timelines, milestones and deliverables

- e. Instructions to bidder
- f. General conditions of contract
- g. Special conditions of contract
- h. Service level parameters etc.

## **C.2 Assistance in Bid Management**

- (i) Consultant shall assist NWPGCL in preparing advertisement inviting Tender and correspondence with the bidders.
- (ii) Consultant shall assist NWPGCL in co-coordinating Pre-Bid Meetings, clarifying and responding to queries from bidders, etc.
- (iii) Consultant shall assist in preparing corrigendum, if required, to be released as part of the RFP and in communicating the same to bidders.
- (iv) Consultant shall assist NWPGCL in evaluating the technical proposal received from the bidders as per the evaluation criteria finalized and laid out in Request for Proposal.
- (v) Consultant will assist NWPGCL in evaluating the presentations by the bidders.
- (vi) Consultant will assist NWPGCL in evaluating the Financial Proposals and in working out the total cost of ownership.
- (vii) Consultant shall prepare a Vendor Evaluation Report as an outcome of the evaluation and assist NWPGCL in finalization of the successful bidder.
- (viii) Consultant will assist in technical evaluation for selection of ERP product and Implementation Partner. The consultant will provide all necessary assistance during the technical evaluation of tenders in selecting the technically qualified vendor. This would include assisting NWPGCL in short-listing of qualified bidders, evaluation of technical proposals, evaluation of financial proposals, and determination of final ranking of proposals and recommending selection of the ERP vendor and Implementation Partner and hardware to NWPGCL.
- (ix) Facilitate submission of the draft documents and evaluation of results to ADB for review and approval.
- (x) Assist in finalizing award and signing of contract agreement.
- (xi) Conduct financial management and accountability study to improve accounting and auditing systems.
- (xii) Carry out other relevant tasks as may be requested for achieving the objectives.

## **C.3 Assistance in Contract Finalization with the Implementing Agency**

- (i) Consultant shall assist in negotiations with successful bidder and in finalizing the contract with the selected bidder/implementing agency.

## **C.4 Assistance in formation of NWPGCL's Project Team**

- (i) Consultant shall assist NWPGCL in identifying and forming the team consisting of program lead, process owners of different business functions, subject matter experts, technical team, and data migration team. Ensure that NWPGCL has expertise to view summary data and go for selective data mining, hyperlink to additional data and use analytical tools as and when required.
- (ii) Consultant shall assist NWPGCL to identify the single-point-of-contact for each module for the effective coordination with the implementation team during the project phases.
- (iii) Consultant shall assist NWPGCL to identify NWPGCL's project team members

- across all geographic locations under scope. Form a competency center comprised of key management from both IT and line management functions.
- (iv) Provide formal business intelligence (BI) training to NWPGL.

## **2.2 Phase II: Implementation-change management, implementation monitoring etc.:**

### **2.2.1 Tasks**

8. Consultant shall assist NWPGL in program management of the ERP solution implementation which will be for the duration of the Pilot go-live as well as for the roll-out to all project locations. Consultant shall coordinate with various stakeholders (NWPGL, ERP implementing agency etc.) and would assist NWPGL in key decision making and review of the work being undertaken during implementation and rollout. Described in the following sections are the key activities that will be executed during this phase.

- (i) Prepare critical examination and review of project management plan submitted by ERP implementation vendor and assist in project implementation management.
- (ii) Guide the organization in implementation task and facilitate the overall implementation process and help in setting up the expectations of the users at various levels.
- (iii) Assist in preparing implementation approach and review of progress.
- (iv) Assist in identifying skill required, top management roll, project team roll, key project deliverable milestone and activities working along with ERP implementation vendor.
- (v) Prepare review of Blue Print document prepared by ERP vendor.
- (vi) Conduct workshop on BI and ERP for senior management (two workshops of half day each).
- (vii) Review the BI and ERP training need proposed by ERP vendor for all levels of management.
- (viii) Assist in vetting of documents on specification of servers and data center related IT infrastructure prepared by ERP vendor for the project.
- (ix) Participate in steering committee meetings in reviewing the progress especially on technical issues.
- (x) Vet the test script documents prepared by ERP vendor as well as integration test for Go-Live preparedness.
- (xi) Review the change management plan and the BI architecture prepared by ERP vendor.
- (xii) Review financial and management reporting, internal controls, auditing system, and financial management assessment.
- (xiii) Review of Go-Live parameters.

### **2.2.2 Monitoring and Review**

- (i) Consultant shall assist in reviewing the progress of the implementation of the ERP solution and the integration of the same with any legacy applications.
- (ii) Consultant shall review the conformity of the project plan in terms of schedule and milestones and provide weekly periodic status review updates to NWPGL.
- (iii) Consultant shall actively participate in project status review meetings with NWPGL and the implementing agency at various levels (ex. steering committee level, project management level) and assist in resolution of pending issues.
- (iv) Consultant shall identify and report issues that require attention of NWPGL.

- (v) Consultant shall assist NWPGCL and the implementing agency in easy resolution of issues, escalations and conflicts.
- (vi) Review of deliverables:
  - a. Consultant shall track and review all deliverables of the Implementation agency and provide feedback to NWPGCL and the implementation agency.
  - b. Consultant shall confirm the quality and adequacy of the deliverables as per the terms of reference/contract with the implementation agency.

### **2.2.3 Adherence to Service Levels**

- (i) Consultant shall assist NWPGCL to develop a service level agreement (SLA), between NWPGCL and the implementation partner.
- (ii) Consultant shall conduct periodic review of implementing agency's adherence to the SLA and shall submit a periodic SLA compliance report to NWPGCL and follow-up on the previous non-compliances by the implementation agency, if any.
- (iii) Consultant shall assist NWPGCL in assessing penalties for non-compliance of SLA's if required.

### **2.2.4 Training and Change Management**

- (i) Consultants shall provide assistance in effectively strategizing and conducting the training plan and the change management plan by way of discussions with the utility and the implementing agency.
- (ii) Planning for Knowledge Transfer and User Training
  - a. Consultant shall assist NWPGCL in reviewing and improving the knowledge transfer and training plan developed by the Implementation Agency.
  - b. Consultant shall review and provide inputs for improving to the training content prepared by the implementation agency.
- (iii) Monitoring of training delivery
  - a. Consultant shall monitor the delivery of training as per plan and provide feedback to NWPGCL on the adequacy and effectiveness of the training.
  - b. Consultant shall monitor training across the locations identified.
  - c. Consultant shall collect feedback from training participants and assess the satisfaction levels.
  - d. Consultant shall review all materials used to conduct the training and shall provide feedback on the same to NWPGCL.
- (iv) Consultant shall monitor the change management workshops which shall be conducted for the Business Process Owners and shall provide feedback on the same to NWPGCL
- (v) Consultant will assist NWPGCL with the mapping of the new roles (resulting from the ERP implementation) with the roles/designations currently in place

### **2.3 Phase III: Post Implementation – Post Implementation Audit, Financial, and Technical Closure etc.**

- (i) Prepare road map for post implementation management of ERP solutions;
- (ii) Assist in financial and technical closure; and
- (iii) Audit of ERP implementation.

### 3. Support from NWPGL

9. NWPGL will provide the consultant with:
- (i) Information about their existing operational processes and procedures that is required for understanding these processes/practices.
  - (ii) Information about the existing IT and related infrastructure.
  - (iii) Adequate time with the relevant personnel for meetings and discussion, subject to due notice.
  - (iv) Identification of trainees for each function;
  - (v) Reasonable space in NWPGL's offices while working on this assignment.
  - (vi) Training facilities; and
  - (vii) Any other data, service, facilities, etc. as mutually agreed.

### 4. Consultant's Experience and Qualifications:

10. The consultant should have at least a bachelor's degree in IT or an engineering degree in computer sciences/electronics/telecommunication. The consultant must have previously providing consultancy for implementation of packaged solution implementation like ERP, Business Process Re-engineering to reputed organizations/Govt./PSU's. The consultant should be capable of taking the services/associating with him financial and other specialists from reputed management organizations in order to conduct financial management and accounting study to improve accounting and auditing systems. The consultant should have worked as consultant in at least two ERP projects in government or public sector. Undertakings out of which at least one should be in power sector with the work of preparing feasibility report, RFP document and technical evaluation of ERP solution and its implementation partner selection. The ERP management specialist shall be appointed as per the approval of the ADB.

Minimum General Experience	10 Years
Minimum Specific Experience (relevant to assignment)	5 Years
Regional/Country Experience	Not Required

<b>Deliverables</b>	<b>Submission Date*</b>	<b>Type</b>
1. ERP needs assessment, ERP solution, and IT infrastructure design, budget for implementing ERP system in APGC	2 months	Report
2. Prepare draft RFP for selection of implementing agency	3 months	Draft RFP/other documents
3. Assistance in bid management including bid evaluation	5 months	BER**
4. Selection of Implementing Agency	6 months	Recommendation
5. Supervision of: (i) ERP implementation, (ii) training and change management, (iii) data migration, (iv) testing and (v) successful implementation of the ERP system	24 months	Final report
<b>Level of Effort</b>	12 person-months over 2 years	
<b>Location</b>	NWPGL office, Dhaka.	

BER = bid evaluation report, ERP = enterprise resource planning, IT = information technology, RFP = request for proposal.

\*All timelines are from the date of notice to proceed

## TERMS OF REFERENCE

### A3. EXTERNAL ENVIRONMENTAL MONITORING

<b>Project</b>	<b>BAN 50161-003: People’s Republic of Bangladesh: Rupsha 800 MW Combined Cycle Power Plant</b>
<b>Expertise</b>	Environment Specialist
<b>Source</b>	National/International
<p><b>Objective and Purpose of the Assignment</b></p> <p>The external environmental monitor (EEM) will be engaged to carry out external monitoring and to verify environment performance of the project. The EEM will be contracted by North-West Power Generation Company Limited (NWPGL), executing agency. The EEM will (i) review Environmental Management Plan (EMP) implementation and environmental monitoring activities and results, (ii) review semiannually environmental monitoring and project progress reports prepared by NWPGL, (iii) assess EMP implementation performance, qualitatively or by conducting additional quantitative environmental monitoring as required, (iv) visit the project sites, oversee quantitative environmental monitoring activities of NWPGL to confirm appropriate methodologies being used and results correctly interpreted, and consult potentially affected people, (v) discuss findings of assessment with the NWPGL, and (vi) suggest corrective actions as required. The EEM will prepare periodic verification reports, to be attached to the NWPGL’s environment monitoring report to ADB.</p> <p><b>Scope of Work</b></p> <p>The EEM will be responsible for periodic monitoring of the progress and status of EMP implementation in accordance with EMP, loan agreements, project administration manuals (PAM) and ADB’s Safeguard Policy Statement (2009). External monitoring and verification will be done at least semiannually during the construction phase and subsequently annually during operation phase.</p> <p><b>Detailed Tasks and/or Expected Outputs</b></p> <p>The activities of this position include, but are not limited to the following:</p> <ul style="list-style-type: none"> <li>(i) participating in field inspections together with onsite environment engineers of the contractors and NWPGL’s environment management unit officers, or undertake independent field inspections, as appropriate, to verify the EMP implementation;</li> <li>(ii) conducting qualitative monitoring on EMP implementation status and additional quantitative environmental monitoring, if necessary, to verify that findings reported in NWPGL’s environmental monitoring reports are accurate, and to confirm if the project in compliance with the EMP, the Safeguard Policy Statement (2009) and Bangladesh legislated standards;</li> <li>(iii) preparing periodic environment monitoring verification reports, which should verify the accuracy of the NWPGL’s environmental monitoring reports, confirm the project’s compliance with the EMP, the Safeguard Policy Statement (2009) and Bangladesh legislated standards, identify any environment related implementation issues or problems, and, as needed, reflect these in a corrective action plan agreed with the NWPGL;</li> <li>(iv) making recommendations to resolve any issues or problems on implementing the EMP and providing advice on ensuring compliance with Safeguard Policy Statement (2009) and Bangladesh legislated standards;</li> <li>(v) submitting (a) inception report, (b) external environmental monitoring reports (EEMR) to NWPGL and ADB with quality acceptable to ADB on regular basis during project implementation period, and (c) final environmental evaluation report addressing the project’s overall environment compliance.</li> </ul>	

**Minimum Qualification Requirements**

The specialist should have an advance degree in environmental science, ecology or other related disciplines and with at least 10 years of related work experience in environmental management. The specialist should ideally have an expertise on environmental issues related to construction and operation of hydropower plants, of quantitative environmental monitoring methods for air, noise, water quality, hydrology, fisheries, and terrestrial ecology impacts, and in preparation of environment monitoring reports in accordance with Safeguard Policy Statement (2009).

Minimum General Experience: 10 years

Minimum Specific Experience: 7 years (relevant to assignment)

Regional/Country Experience: Required

<b>Deliverables</b>	<b>Estimated Submission Date</b>	<b>Type</b>
Inception report	commencement of contract	Report
EEMR	Semiannually during construction and annually during operation	Report
Final Evaluation Report	closure of project	Report
<b>Places of Assignment:</b>	<b>Days Estimated Dates</b>	<b>(dd/mm/yyyy)</b>
Home office	22 per year	from the loan effective date
TOTAL DAYS	22(intermittent)	Max. Working Days/Week: 5 for Home Office, 6 for Field



## TERMS OF REFERENCE

### A4. SUPPORTING SOCIALLY INCLUSIVE DEVELOPMENT FOR BETTER LIVELIHOOD THROUGH RUPSHA POWER PLANT PROJECT

#### 1.1 Background

1. The Government of Bangladesh is receiving financing from the Asian Development Bank (ADB) for construction of the Rupsha 800 MW combined cycle power plant (CCPP). The CCPP will be fueled by LNG a clean burning fuel with lower power generation costs, fewer local pollutants and carbon dioxide emissions compared to diesel-fired units. To ensure uninterrupted fuel supply to the CCPP, LNG will be supplied to the Rupsha CCPP site via a 12.5<sup>36</sup> kilometer (km) underground gas distribution pipeline from the Khulna City Gas Substation. The project will also finance the construction of a 230 kilovolt (kV) switchyard at the CCPP site and 29<sup>37</sup> km of high capacity 230 kV, double circuit transmission lines to deliver the generated power to the national power grid. In addition to the loan, NWPGL will also be receiving grant \$1.5 million financing from the JFPR for NWPGL's capacity building in terms of social and gender and socially inclusive development of communities neighboring the project site.

2. The project impact is energy security improved, and electricity supply increased, and outcome is availability of efficient and cleaner energy increased. The grant will link two project outputs among four in the design and monitoring framework, which are (iii) Institutional capacity of the NWPGL strengthened and (iv) socially inclusive development of communities neighboring the project site pilot tested.

3. The outputs under the grant will be i) safe and inclusive education environment provided; ii) training for safe and efficient use of electricity delivered to the schools; iii) technical and skills training to avail of livelihood activities and employment opportunities provided; and iv) social and gender awareness improvement in the energy sector improved.

4. NWPGL plans to hire an international consulting firm to assist the PMU to implement this grant. The international consulting firm would have experience of implementing similar grant initiatives for at least 5 years with access to international and national experts and specialists required for the different outputs. Experience in developing member countries in the region would be desirable.

#### 1.2 Objective of the Assignment

5. The key objective of the assignment is to implement the planned activities under the JFPR fund in line with international best practices and provide required deliverables.

6. The assignment is expected to commence in the second quarter of 2019 and will continue until the fourth quarter of 2021.

#### 1.3 Scope of Services

7. The consultant team will have access to NWPGL offices particularly for interactions with NWPGL staff. There is a staff under NWPGL PMU who is assigned as a focal for the task. A

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<sup>36</sup> A new 10.5 km gas pipeline from City Gate Station (CGS) 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 to 225 MW Power Plant.

<sup>37</sup> The 24.61 km long new transmission line and additional 4.7km long restringing.

project management specialist (team leader) of the consultant team is supporting the staff as a focal point of the team.

8. The consultant team would carry out following tasks to achieve objectives of the assignment:

- (i) Prepare an inception report with detailed plan and timeline for implementation of the grant and hold an inception workshop with NWPGCL's staff;
- (ii) Support procurement of 10 kW solar system, two (2) IT and two (2) science laboratories and inclusive educational facilities; and monitor the installation of facilities and equipment;
- (iii) Conduct needs assessment for school buses and the other educational materials, and support and monitor procurement of them, if applicable;
- (iv) Develop training materials and program, and provide trainings on (a) safe and efficient use of electricity, (b) how to use IT and science labs, and (c) how to utilize IT technology to improve education and information access; and conduct evaluation survey after each training;
- (v) Undertake a needs assessment for determining the most appropriate trainings for livelihood activities and employment opportunities, and develop training materials and program; and prepare selection criteria for the trainees and mobilize communities with selecting trainees based on the criteria;
- (vi) Provide trainings (a) to promote energy-based livelihoods through access to electrical appliances (e.g. hand craft, sewing and etc.) and (b) to increase employment opportunities for technical and administrative work; and conduct evaluation survey after each training;
- (vii) Develop workshop materials and programs for improving social and gender awareness workshops for NWPGL and facilitate workshops at its headquarters and regional hubs; and conduct evaluation survey after each workshop;
- (viii) Develop materials and programs and conduct the school outreach event series (twice per year from 3Q 2019 to 3Q 2021) to encourage male and female students to consider a career in the energy sector;
- (ix) Develop socially and gender inclusive community development strategy for NWPGL;
- (x) Report implementation progress to NWPGL and ADB through quarterly project progress reports; and
- (xi) Draft final grant report based on all tasks undertaken under the grant including evaluation survey results and socially and gender inclusive community development strategy.

#### **1.4 Team Composition, Qualification Requirements, and Tasks**

9. **Qualification of the international firm** shall have at least 5 years of experience in overall project management. They shall also have experience in design of socially inclusive development projects in remoted area and understanding on gender equity in development. The firm shall have the international and national consultants with relevant expertise. The firm's experience in developing countries in the region will be an advantage. The approach and methodology for the project, the qualifications of each proposed party will need to be detailed by each shortlisted firm in their proposal. Outline TORs associated with individual international and national experts are outlined below.

10. The team composition of the key consultants along with their estimated person months is provided in table A3 below and the required qualification of the international key experts are provided in following paragraphs:

**Table A3: Indicative Expertise and Person-Months**

<b>Positions</b>	<b>Number</b>	<b>Person-Months</b>
Project management specialist (Team leader)	1	6
Social development specialist (Deputy team leader)	1	6
Communication specialist	1	6
Community mobilizer	1	3
IT and science lab trainers	2	2
Livelihood and skills trainers	2	4
Social and gender specialist	1	3
Project administrators	1	12
	10	42

11. **Project Management Specialist (1 International, and 6 person-months)** The project management specialist will be the team leader of the grant implementation team and manage all planned activities. The specialist will supervise consultant team members, will take responsibility of reporting to ADB with relevant deliverables and will maintain day-to-day coordination with assigned staff(s) of NWPGL at the field level. The specialist will draft inception report and final grant report in coordination with the team members, NWPGL and communities, in addition, the specialist will support and monitor the procurement of solar PV system and school equipment. The specialist will have master's degree in accounting, finance or administration and minimum 10 years' experience working in development project procurement and management. Project management experience is a must.

12. **Social Development Specialist (1 International, and 6 person-months)** The social development specialist will be the deputy team leader of the grant implementation team. The specialist will supervise all activities under the grant outputs 2, 3, and 4, and needs assessment under the grant Output 1, and will take responsibility of reporting to the team leader with relevant deliverables. In consultation with the team members, NWPGL and communities, the consultant will draft the socially inclusive development strategy, based on the implementation results of outputs 2, 3, and 4. The specialist will lead needs assessment and support in design and implementation of trainings and workshops. The specialist will have master's degree in a relevant social science discipline or equivalent professional training, and more than 10 years of experience in social development work, specifically in social development, preferably in energy programs and projects, in collaboration with the government and non-government development institutions.

13. **Communications Specialist (1 International, and 6 person-months).** The specialist will implement communication strategy and undertake activities such as supporting information dissemination and consultations; preparing FAQ for the project and grant, updating social media for NWPGL; preparing fact sheets for information sharing; and supporting the PMU with school event and job fair. The specialist will provide guidance and inputs to the PMU as needed and build and maintain close ties with local media organizations and individual journalists to ensure positive and timely coverage of the projects activities. The specialist will report to the deputy team leader on the progress of the implementation regular basis. The expert will have master's degree in a relevant social science discipline or equivalent professional training, and more than 10 years of experience in journalism, social development work, preferably in energy programs and projects, in collaboration with the government and non-government development institutions.

14. **Community Mobilizer (1 national, and 3 person-months).** The qualified candidate shall have at least bachelor's degree in development or related disciplines with minimum 5 years of

work experience on capacity building programs for rural audiences. Under the supervision of the team leader and deputy team leader, the community mobiliser will be responsible for needs assessment under the grant Output 1 and coordinating and delivering on activities under the grant Output 2 and 3. This work will be across four key tasks: (i) conducting needs assessments for school buses and the other education material; (ii) engaging the schools to prepare IT and science lab related to trainings; (iii) engaging communities to select participants and trainees for the trainings to promote energy-based livelihoods and increase technologies and skills for employment; (iv) determining what livelihood and skills trainers are required based on the needs assessments; and (v) necessity of the biodiversity, ecology, and livelihood participatory training and monitoring. In addition, they will also support communication strategy activities such as the school event and job fair.

**15. IT and Science Lab Trainers (2 national and 2 person-months in total).** The Trainers will have a bachelor's degree in IT and/or sciences or related discipline with at least 5-years work experience. Extensive experience in training students and teachers is a must. The trainers will be responsible for planning, coordinating, designing and implementing activities under Output 2. Key tasks include preparing materials and programs and facilitating trainings (i) on safe and efficient use of electricity; (ii) on how to use IT and science labs; and (iii) on how to utilize IT technology to improve education and information access. The Trainers will be responsible for developing evaluation survey sheet and undertaking evaluation survey after completion of each training and reporting to the team leader and deputy team leader on the progress of output 2 training activities (i.e. participants, photos, topics).

**16. Livelihood and Skills Trainers (2 national, and 4 months in total)** The qualified candidates will have a bachelor's degree in related field with at least of 5-years' experience in their area of livelihood and employment expertise with rural audiences. Key tasks under output 3, include preparing materials and programs and organizing and facilitating trainings (i) to promote energy-based livelihoods through access to electrical appliances for local manufacturing/service/retail activities (e.g. hand craft, sewing and etc.); and (ii) to undertake technical and skills training activities that will increase employment opportunities for simple and routine electrical repairs, and administrative works. Both tasks will focus on the vulnerable households identified in the project resettlement plans. The Trainers will be responsible for developing evaluation survey sheet and undertaking evaluation survey after completion of each training and reporting to the team leader and deputy team leader on the progress of output 3 training activities (i.e. participants, photos, topics).

**17. Social and Gender Specialist (1 national, and 3 person-months).** The gender specialist should have a postgraduate university degree in social sciences or related discipline (an additional degree in engineering will be an advantage). The specialist should have formal training in gender analysis and gender planning and demonstrated experience, skills, and expertise in mainstreaming gender in the energy sector. The specialist should be familiar with the energy sector in the South Asia region, especially on issues of "vulnerability," "accessibility," and "affordability" related to energy resources and services. The specialist should be familiar with gender analysis tools and methodologies in the energy sector. The specialist would be responsible for checking whether the gender targets for each activity have been achieved, and for key tasks under the grant Output 4 including (i) conducting gender audit, preparing workshop materials and programs, and conducting the gender workshops with NWPGL and (ii) preparing gender inclusive school outreach program coordinating the school outreach event series. The specialist will be responsible for developing evaluation survey sheet and undertaking evaluation survey after completion of each workshop and school outreaching event. The specialist will report to the team leader and deputy team leader about gender target achievement status for all activities under the grant and on the progress of output 4 training activities (i.e. participants, photos, topics).

18. **Project Administrator (1 national, 12 months)** The administrator will have at least a bachelor's degree in accounting, finance or administration and qualification of certified public accountant from a national recognized institute of accountancy, with at least 5 years of relevant finance experience at national level and familiarity with government accounting system and ADB standards. The administrator will provide project implementation support to accounting, reporting, recording, submission of withdrawal applications for the grant, selecting experts, consultants and trainees and participants, and facilitate fund requests and releases.

**Table A4: Indicative List of Reports**

<b>No</b>	<b>Activity</b>	<b>Due by Month</b>
1	Inception Report and Workshop	3
2	Completion Report for Output 1	7
3	Completion Report for Output 2 with Evaluation Survey	13
4	Completion Report for Output 3 with Evaluation Survey	13
5	Completion Report for Output 4 with Evaluation Survey	28
6	Grant Progress Note	Quarterly
7	Socially Inclusive Development Strategy NWPGL	30
8	Grant Final Report	31

NWPGL = North-West Power Generation Company Limited.

19. **National Consulting Firm for Biodiversity and Ecology Monitoring and Training (1 national firm, and 2-person months)**. The national consulting firm will be recruited subject to the needs assessment of the community mobilizer for biodiversity, ecology, and livelihood participatory training and monitoring. The detailed TOR will be drafted based on findings of the needs assessment and key tasks will include: (i) engagement with affected communities and NWPGL staff to assess impacts on livelihood due to biodiversity and ecology changes ; (ii) design and implement participatory biodiversity monitoring and training; (iii) undertake monitoring regular basis and provide necessary training; and (iv) prepare and provide reports based on the monitoring and training results.

## STAKEHOLDERS COMMUNICATIONS STRATEGY

### A. Rationale

1. The purpose of this stakeholder communication strategy (SCS) is to support the Rupsha 800-Megawatt Combined Cycle Power Plant Project (CCPP), 'the project' in identifying stakeholders and delivering efficient and effective stakeholder engagement and communications so that their views and concerns are reflected in the project and they are fully informed about project activities to mobilize and maintain stakeholder support in the achievement of the project goals. Key project related social risks, relevant to this strategy include:

- (i) Relocation of a primary and secondary boys and girls school currently within the CCPP site. NWPGL will construct two new schools within the abandoned newspaper mill (on the remaining 37.6 acres), at safe distance. These schools will be the only locally available primary/secondary schools (within 30 minutes walking distance) for the local communities and as such their timely relocation is a critical concern for the community. In addition, a mosque currently within the CCPP site will be renovated and allow continued access by the community.
- (ii) Potential project impacts on river biodiversity associated with the Ganges River dolphin are being assessed. A separate biodiversity assessment conducted by the IUCN continues to evaluate potential seasonal impact (pre-monsoon, monsoon, post-monsoon, winter). Whilst the project is being proactive to assess and monitor impacts on these species, they remain a credibility and reputational risk.
- (iii) Perceived livelihood impacts on the Chandoni fishermen's village adjacent (across the river) the CCPP site. The fishermen, among the villagers, are very poor, marginalized and only a handful of families own a fishing-boat. They have been affected by on-going industrial development and are experiencing the combined effects of the increases in heavy equipment transportation, water extraction, and decreases in fish catch along the river. They will be temporarily impacted by increased river traffic during construction but may also attribute changes in livelihoods to the project, though impacts on fish are not anticipated.

### B. Stakeholder Identification and Analysis

2. A list of project stakeholders was prepared in 2017. They are presented below in terms of primary and secondary stakeholders, depending on their influence and interest in the project.

3. The stakeholder analysis exercise involved desk analysis, key informant interviews, and focus group discussions in project areas, with development partners like the IUCN and NWPGL. Data collection focused on communications characteristics of each stakeholder group and those directly affected; beneficiaries; government officials at national, district and division level; field level officers and key civil society stakeholders.

**Table A5: Stakeholders List**

<b>Primary Project Stakeholders</b>	<b>Description</b>
(a) Directly affected HHs (displaced by project)	Involuntary relocation of a small number of HHs will be required and involve: (i) small kiosk businesses within the gas pipeline right of way, and (ii) a few residential structures underneath the new transmission line as well as temporary agricultural crop impacts during construction.
(b) Chandoni fishermen's village	Across the Rupsha river (adjacent to the CCPP site), is the Chandoni fishermen's village with around 120 HHs. Most of the HHs are among the poorest of the poor, dependent on small service work and fishing for their livelihoods. There may be perceived impacts on their fishing livelihoods from the project and project river transportation schedules will need to be communicated to this group.
(c) Boys and girls school stakeholders	The school committee has been the key stakeholder in discussing the relocation, as well as parents and students.
(d) Mosque leaders and Congregation	Imam, mosque management committee, and its congregation.
(e) Community surrounding the project site	Inclusive of parents, students, and former employees of the newsprint mill who have an interest in the safe construction and operation of the project, as well as potential employment opportunities.
(f) Environmental NGOs	National NGOs with interest in the Ganges dolphin and other potential impacts on river biodiversity and critical habitat.
(g) Local media	Local media has previously attended town hall meetings for the project and shown an interest in the safe development and technical aspects of the project.
<b>Secondary Project Stakeholders</b>	<b>Description</b>
(h) Municipal government	Khulna City Corporation, Khulna Development Authority, and Khulna Water Supply and Sewerage Authority.
(i) Parliamentary committees, and elected officials	During project preparation, transfer of land to NWPGL and other project related decisions have involved national government committees and officials and as such these groups should be kept informed of future project developments.
(j) State and national media	Newspapers and broadcast companies.
(k) Bilateral Lenders	Development partners directly/indirectly involved in grant related activities.

CCPP = combined cycle power plant, HH = households, NGOs = nongovernment organization, NWPGL = North-West Power Generation Company Limited.

Source: ADB's Communications-Based Assessment.

### **C. Communication Capacity**

4. Preparation of this SCS considered the institutional capacities of NWPGL in operating information dissemination and communications for the project. It was found that communications and social risk management were not high priorities for the organization, although they were

aware that some social risks may result in complaints (i.e. perceived impacts on livelihoods). NWPGL has an up-to-date website and social media presence (Facebook), however further manpower resources, capacity building and guidance is necessary to effectively manage the communications aspects of the identified social risks (see rational and communications matrix).

#### **D. Stakeholder Communication Strategy Matrix**

5. The subsequent communication and engagement approaches for the project stakeholders identified in Table A5, are outlined in the Communication Strategy Matrix (Table A6). Stakeholder analysis conducted to prepare this matrix included identification of preferred channels of communication, outline mechanism for information sharing — strategic activities/tactics and channels and set up approaches to and themes for message development, which have been incorporated into the table below.



**Table A6: Communication Strategy Matrix**

<b>Communication Strategy Matrix</b>							
<b>Communications Context:</b> In 2015, Bangladesh produced 7,000 MW of electricity, with a daily deficit of up to 1,500 megawatt (MW) with only 65% of its 160 million population having access to the national grid. Beginning in 2022, the state-of-the-art, efficient Rupsha 800 MW Combined Cycle Power Plant will add an estimated 9% of capacity to meet Bangladesh's demand for reliable power while helping to maintain reasonable rates for industry and consumers and exceeding environmentally and socially responsible standards. An anticipated 1.36 million households (HHs) are anticipated to benefit from the increased power generation capacity, with approximately 6.13 individual beneficiaries. North-West Power Generation Company Limited (NWPCGL), the government's manager of the \$1.04 billion project will be constructed at the site of a former paper mill adjacent to the Bhairab River at Khalishpur, Khulna. There are minor resettlement and environmental safeguard issues; river biodiversity impacts (river dolphins), livelihood impacts on a fishermen's village adjacent to the CCPP site, relocation of girls and boys school within the newsprint mill site and restoration of an existing mosque. Government capacity to communicate will also need support over the life of the project.							
<b>Common Objectives:</b> Build a supportive stakeholder base for the project							
<b>Strategic Elements</b>				<b>Work Plan Elements</b>			
<b>Key Risks</b>	<b>Audience/ Stakeholder</b>	<b>Current and Desired Behavior</b>	<b>Messages/ Information Needs</b>	<b>Channels /Activity</b>	<b>Timing</b>	<b>Responsibility</b>	<b>Resource Needs</b>
(a) People directly affected by the project could protest leading to project delays	Directly affected households by transmission line or gas pipeline who will be resettled or compensated	Accept compensation	<p>Technical details on to receive compensation</p> <p>Compensation will follow Bangladesh law and ADB guidelines and be provided in a timely and transparent manner.</p> <p>Grievance mechanism 'how to'</p> <p>Job application 'how to'</p>	<p>Direct through PMU face to face resettlement plan Disclosure in Local language and on website</p> <p>Grievance redress mechanism awareness campaign.</p> <p>Job opportunity events Social Media Website</p>	<p>During resettlement plan implementation</p> <p>Pre-construction</p>	PMU	Counterpart funds and JFPR

Key Risks	Audience/ Stakeholder	Current and Desired Behavior	Messages/ Information Needs	Channels /Activity	Timing	Responsibility	Resource Needs
(b) Complaints and discontent about potential project biodiversity or river livelihood impacts	Fishermen's village adjacent to CCPP site	Unaware/ Aware of existing mitigations and monitoring mechanisms  Accept temporary river transport disruptions	Construction timetables will be shared and changes to river biodiversity continuously monitored.  Need specific technical information on impacts and mitigation  Job application 'how to'	Environmental briefings at village/CCPP site  Notification of river shipping schedule  Participatory biodiversity monitoring  Job opportunity events	Pre-construction  Construction  Ongoing  Pre-construction	PMU	Counterpart funds and JFPR
(c) Complaints and discontent about project implementation	<ul style="list-style-type: none"> <li>Community around project CCPP site,</li> <li>Newsprint schools and mosque</li> </ul>	Aware and supportive of project but lack faith plans will be implemented well/ timely.	Project high priority for Government of Bangladesh.  Plans established & budgets allocated Delays if any will be proactively communicated.  Job application 'how to'	Briefing / update to school committee & mosque media website/ social media  Job opportunity events	Pre-construction & Construction	PMU	Counterpart funds and JFPR
(d) Politicization of the project derail.	Parliamentary committees Parliamentarians/ elected officials from project areas, ministerial officials	Awareness varies generally supportive but could use for political purposes	Project is a high priority for GOB Project has the potential to bring power benefits to the national grid	Press and media releases  Website Social Media  ail Phone	Pre-construction & construction	PMU	Counterpart funds and JFPR

Key Risks	Audience/ Stakeholder	Current and Desired Behavior	Messages/ Information Needs	Channels /Activity	Timing	Responsibility	Resource Needs
	Municipal Government		Project well planned, managed, executed, responsive to concerns, seeks advice regarding problems, aims for environmental protection and safe operation will include local government in crisis response preparation.	Website Media (e.g. construction, bidding, resettlement, biodiversity)			
(e) Credibility risks due to perceptions surrounding potential impacts of project (or cumulative impacts) on river dolphins. May question safeguard plan implementation	Environmental NGOs	Aware of project. May lack faith safeguards plans will be implemented, or biodiversity adequately monitored. Could protest and delay project. Specific individual NGOs have questions about specific aspects of project Fully aware of project, fully informed throughout	EIA dolphin baseline co-designed and conducted by IUCN. Strong environmental safeguards in place including attention to river biodiversity. Resources and plans made/set aside for ongoing monitoring which will include participation by local river users.	Media coverage of participatory biodiversity monitoring  Fact sheet on baseline, impact & monitoring  Website Social media especially on participatory monitoring  NGO briefing on EIA results	Project preparation  Prior to Construction  Ongoing during construction	PMU	Counterpart funds and JFPR

Key Risks	Audience/ Stakeholder	Current and Desired Behavior	Messages/ Information Needs	Channels /Activity	Timing	Responsibility	Resource Needs
(f) Project backlash resulting in delays and lack of social license to operate	Media both local and national	Media somewhat aware/ But lack technical understanding of project	First LNG power plant of this size in Bangladesh Project well planned, managed, executed.  Strong environmental safeguards in place. Construction will be safely managed. CCPP will add an estimated 9 % of capacity to meet Bangladesh's demand for reliable power	Standard fact sheets covering all aspects of project.  Briefings  Field visits  Press release  Website Social Media			
(g) Backlash from local residents due to lack of construction related jobs resulting in reduced credibility	Local Jobseekers	High expectations for local employment, primarily unskilled labor	Project will seek to prioritize local unskilled labor during construction. Job matching and contractor coordination as well as security clearances may create barriers or slow the process.	Job opportunity events  Fact sheet on construction jobs (job types, documents needed, where/ how to apply)  Advertisements	Prior to construction  During Construction	PMU	
(h) Poor communication on grant developments reduces credibility	Bi-lateral Lenders,	Expect to be kept informed of development	Project committed to efficiently implementing grant, meeting	Involvement in opening ceremonies (schools)	During grant implementation	PMU	

Key Risks	Audience/ Stakeholder	Current and Desired Behavior	Messages/ Information Needs	Channels /Activity	Timing	Responsibility	Resource Needs
		as per grant requirements	grant requirements and sharing benefits arising from grant activities.	Regular Grant reporting  Social media/ website (i.e. participatory biodiversity activities)			

## **E. Implementation Arrangements**

6. Stakeholder engagement communications, timeline and issue management, media relations, material production, monitoring and evaluation, and reporting will require the appointment of a communications focal point at NWPGCL. This person will oversee communications related activities as per the Communication Strategy Matrix (Table A6) and will be responsible for ensuring the strategy actions are completed. Consultant support will be available –as needed- over the first three years of project implementation (2018–2020) to bolster communication activities especially at project site level. In addition, a social development (safeguards) expert will be available – on an intermittent basis- to support the implementation of the resettlement plan and related grievance redress mechanism and will have a role to play in supporting communications related activities with respect to project affected people. NWPGCL is already updating its website <http://www.nwpgcl.org.bd/en> and Facebook page and will continue to input project-related information.

7. The project director with support of the communication specialist<sup>38</sup> will be responsible to ensure that the communication activities are in line with ADB policies and guidelines. To ensure consistency of messaging, the Communications Focal Point will be responsible for maintaining up to date FAQs, holding statements and talking points for use by all who are tasked to engage with the media. NWPGCL will need to put in place an activity timeline as a basis for the timely and effective implementation of the communications strategy, with particular attention to the construction phase and the implementation of the resettlement plan (see Strategic Matrix in Table A6).

## **F. Monitoring & Evaluation**

8. NWPGCL will use the quarterly and/or semi-annual reports to report relevant information and data on the status of implementation of relevant stakeholder engagement activity/communications. The communication specialist will be responsible to ensure continuous monitoring of inputs, outputs and outcomes (e.g. number of activities conducted, products developed, and people reached) [see Table A7]. This communications strategy can be revisited (i.e. evaluated and updated) if needed.

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<sup>38</sup> The communication specialist is included in the ToR for the JFPR grant implementation.

**Table A7: Communications Monitoring Indicators**

<b>Activities</b>	<b>Input Indicators</b>	<b>Output Indicators</b>	<b>Data Source</b>
1. Awareness Activities: Consultations and community events	<ul style="list-style-type: none"> <li>• # of meetings / consultations conducted</li> <li>• # of participants (disaggregated by stakeholder)</li> </ul>	<ul style="list-style-type: none"> <li>• % of target audience with access to information</li> <li>• % of target audience aware of project objectives</li> </ul>	Participants lists; photographs/video; meeting minutes, event agenda
2. Development, production and dissemination of materials (e.g., FAQ, fact sheets, signage, advertisements).	<ul style="list-style-type: none"> <li>• # of each kind of product produced</li> <li>• # distributed in each location</li> </ul>	# of target audience reached	Photographs
3. Media coverage (feature articles, news segments, discussion panels, etc.)	# of news and features published or broadcast about project	% of positive coverage	Media monitoring and clippings
4. Website & Social Media	<ul style="list-style-type: none"> <li>• # of hits</li> <li>• # of likes/views on Facebook</li> </ul>	# of users who downloaded communication materials (disaggregated by kind)	Website metrics & social media metrics

FAQ = frequently asked questions.

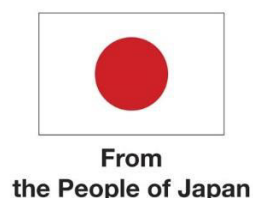
## JAPAN FUND FOR POVERTY REDUCTION GUIDANCE NOTE ON JAPANESE VISIBILITY

### I. Introduction

1. The Revised Operating Framework for the Japan Fund for Poverty Reduction (JFPR) was approved on 6 October 2009, combining Japan's project grant and technical assistance support under one umbrella, and paving the way for a more comprehensive approach to the use of these funds towards addressing poverty, building up human resources, and empowering institutions and communities in the region. Japan has been making generous contributions for technical assistance activities through the Japan Special Fund, and for poverty reduction projects through JFPR, since they were established in 1988 and 2000, respectively. It is but fitting and proper that said contributions are acknowledged and the recipients and general public are informed of the source of the funding assistance both at the Fund level and at the level of the individual TA and project grants. The purpose of this note is to provide guidance on measures to ensure that the contribution of Japan in supporting JFPR is widely recognized.<sup>1</sup>

### II. Statement on Japanese Visibility

2. Project teams are required to help promote the visibility and local awareness of JFPR in recipient countries through the following:
  - (a) All press releases issued by ADB with respect to JFPR should refer to the financial contribution from the Government of Japan (GOJ)<sup>2</sup>;
  - (b) Signing ceremonies and other publicity events should be encouraged, inviting Japan embassy officials, JICA staff, local and international press<sup>3</sup>;
  - (c) Civil works, project billboards/signages, vehicles, and equipment must carry the JFPR and Japan ODA logos (see below). Likewise, all publications and training programs must bear the said logos, including all collaterals used (i.e. training materials, banners, posters, flyers, etc.) that are financed by JFPR; these logos are available in the OCO-JFPR website;<sup>4</sup>



<sup>1</sup> A copy of the Guidance Note on Japanese Visibility is appended to the Project Administration Manual as guide to the project team and the government, during project implementation.

<sup>2</sup> Staff may coordinate with the Department of Communications.

<sup>3</sup> Coordination with resident missions are necessary.

<sup>4</sup> <https://lnadbg1.adb.org/oco0006p.nsf/0/EEE594E105EAC26A482576C7002240AB/?OpenDocument>



- (d) Publications, reports, training programs, seminars and workshops financed by JFPR should acknowledge receipt of funding from GOJ;
- (e) Recipients should be encouraged to ensure that JFPR-financed activities are well covered by local print and electronic media, and that all related publicity materials, and official notices explicitly acknowledge funding from GOJ. Below is the suggested standard text to be used by those who prepare publicity materials:  
*"The grant fund for (project name/activity) was received from the Japan Fund for Poverty Reduction financed by the Government of Japan through the Asian Development Bank".*

### **III. Participation of Japanese Entities in Implementation**

- 3. It is also important to generate visibility of the project within Japan. Involvement or cooperation with Japanese experts, financial resources and technologies are encouraged; occasional information sessions on JFPR for Japanese organizations may also be conducted. It is also highly recommended that ADB involve and cooperate with Japanese organizations including NGOs, civil society organizations, aid agencies in particular JICA and JBIC, the private sector enterprises or academic institutions.

### **IV. Reporting**

- 4. At the end of the project, the completion report submitted by the project team should include evidences of Japanese visibility such as photos (preferably high resolution), press releases, articles or write-ups, and testimonials from project recipients and/or implementers. Sample products generated from the project grant are requested to be made available to OCO for inclusion in future exhibits. Copies of publications<sup>5</sup> that are outputs of the project should also be provided to OCO.

### **V. Visibility Support by ADB**

- 5. OCO promotes visibility of JFPR by: (i) informing Office and Department Heads of the importance of achieving high visibility in order to garner support for JFPR from Japanese officials and taxpayers; (ii) informing Country Directors of the importance of signing ceremonies to Japanese officials and the public to ensure recognition and support for JFPR funding; and (iii) continuing widespread distribution of the JFPR Annual Report, inclusion of JFPR information in relevant ADB documents, and occasional information sessions for Japanese organizations.
- 6. Resident Mission staff are requested to forward copies of all visibility materials, such as press releases, newspaper and magazine articles, and photographs (including descriptive captions) to OCO's assigned focal staff for JFPR or e-mail to [jfpr@adb.org](mailto:jfpr@adb.org).

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<sup>5</sup> This particularly applies to knowledge and support TAs. Links to publication available online may be provided in lieu of print copy.

## **JAPAN FUND FOR POVERTY REDUCTION**

### **GUIDANCE NOTE ON COORDINATION WITH THE EMBASSY OF JAPAN AND JICA**

#### **I. INTRODUCTION**

1. The Final Report on the Review of Japanese Official Development Assistance<sup>1</sup> (ODA) underscores the need for strategic and effective aid. One way to ensure alignment of Japan Fund for Poverty Reduction (JFPR) projects and technical assistance (TA) with Government of Japan's (GOJ) bilateral assistance strategy for a particular developing member country (DMC) is by bringing on board the comments and suggestions of the Embassy of Japan (EoJ) and the Japan International Cooperation Agency (JICA).<sup>2</sup> Thus, the summary of consultations with EoJ and JICA (to include, date of consultation, name and position of staff met, and EoJ and JICA's response) should be included in the proposal submitted to OCO.<sup>3</sup> This Guidance Note provides detailed instructions regarding coordination activities with EoJ and JICA.<sup>4</sup>

#### **II. EOJ AND JICA CONTACT PERSONS**

2. As soon as project officer informs OCO of the intent to apply for JFPR funding,<sup>5</sup> OCO will identify the appropriate contact persons in EoJ and JICA. The contact persons' information<sup>6</sup> will be provided by OCO to the project officer to start consultation.

#### **III. CONSULTATION WITH EOJ AND JICA – PROPOSAL PREPARATION**

3. At concept stage, project officer should consult with EoJ and JICA<sup>7</sup> through e-mail the proposed project to, (i) seek if it is in line with Japan ODA priorities, (ii) ensure no duplication, and (iii) present the concept itself, with copy to OCO.
4. Upon OCO's confirmation to proceed with proposal preparation, the project officer may arrange the project design meeting with EoJ and JICA. This meeting intends to explain and discuss the actual project design. This is ideally conducted during the fact-finding mission.<sup>8</sup> The proposal,<sup>9</sup> should be provided to EoJ and JICA with copy to OCO at least 5 working days before the meeting to give ample time for review and consideration. After the meeting, if needed, OCO in coordination with the project officer, may follow-up with EoJ and JICA, and respond to requests for clarification.
5. In the case of regional TAs, the draft TA Summary and Report should be sent by email to EoJ and JICA contact persons on no-objection basis.

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<sup>1</sup> Ministry of Foreign Affairs of Japan. 2010. ODA Review - Summary of the Final Report. Tokyo.

<sup>2</sup> Incorporated administrative agency in charge of administering Japan's ODA.

<sup>3</sup> GOJ gives importance on the inputs provided EoJ and JICA during the internal approval process.

<sup>4</sup> A copy of the Guidance Note on Coordination with Embassy of Japan and JICA is appended to the Project Administration Manual as guide to the project team and the government, during project implementation.

<sup>5</sup> Project name and brief outline of proposal should be provided to OCO.

<sup>6</sup> Name, status, telephone number and email address

<sup>7</sup> Please refer to the contact persons provided by OCO.

<sup>8</sup> If a meeting with EoJ and/or JICA is not possible, email exchange, telephone discussion or any other form of communication may be used.

<sup>9</sup> Draft Grant assistance report (for project grants) and draft TA Summary and Report (for TAs).

#### **IV. ROLE OF THE RESIDENT MISSION AND OCO**

6. Project officer's communications with EoJ and JICA should be done in coordination with the resident mission<sup>10</sup> with copy to OCO. If needed, OCO supports to identify the appropriate staff to be consulted.
7. Resident mission also arrange the Grant Agreement/TA letter signing event (section V) and in the overall coordination/relationship management with EoJ and JICA.
8. OCO's role are as follows: (i) provide contact details of relevant staff from EoJ and JICA for project consultation; (ii) liaise any need for clarification by EoJ and JICA in coordination with the project officer, during project consultation; (iii) inform EoJ and JICA when there is withdrawal or cancellation of a project; and (iv) forward all completion reports to both agencies.

#### **V. COORDINATION WITH EOJ AND JICA – UPON APPROVAL OF THE PROPOSAL**

9. Project officer should inform EoJ and JICA about ADB's approval. Project officers are strongly encouraged to conduct signing or launching ceremonies with the attendance of EoJ officials.<sup>11</sup>
10. In coordination with the resident mission, the project officer should inform EoJ and OCO of the signing ceremony– at least 10 working days in advance. OCO then informs GOJ of this activity. The project officer should also draft news release in consultation with the Department of communications and coordinate arrangements with the resident mission. Local and international press are invited to these ceremonies.

#### **VI. COORDINATION WITH EOJ AND JICA – DURING PROJECT IMPLEMENTATION AND UPON PROJECT COMPLETION**

11. Throughout implementation, the project officer should inform EoJ about project progress, milestones, and outcomes, and discuss when major changes in scope and objectives are required. Progress and outcomes of JFPR projects are also requested to be shared with JICA. From time to time, EoJ and JICA may also wish to join completion review missions in order to see project results and to interact first-hand with project recipients. Lessons from the JFPR projects are also requested to be shared to enable both sides to explore and seek potential collaboration. Completion reports are required to be submitted by the project officer to OCO for forwarding to EoJ and JICA.<sup>12</sup>

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<sup>10</sup> Please inquire respective resident missions on their protocols or coordination arrangements with EoJ and JICA.

<sup>11</sup> Please refer to the Guidance Note on Japanese Visibility for details on visibility requirements under JFPR.

<sup>12</sup> Links to the completion reports will suffice.