Report and Recommendation of the President to the Board of Directors

Project Number: 50253-001
November 2017

Proposed Loans and Guarantees
Reliance Bangladesh LNG and Power Limited and Reliance Bangladesh LNG Terminal Limited
Reliance Bangladesh Liquefied Natural Gas and Power Project
(Bangladesh)

This is an abbreviated version of the document approved by ADB's Board of Directors that excludes information that is subject to exceptions to disclosure set forth in ADB's Public Communications Policy 2011.

Asian Development Bank

CURRENCY EQUIVALENTS
(as of 12 September 2017)

Currency unit	–	taka (Tk)
Tk1.00	=	$0.012
$1.00	=	Tk81.70
Currency unit	–	Indian rupee/s (₹)
₹1.00	=	$0.16
$1.00	=	₹63.86

ABBREVIATIONS

ADB	–	Asian Development Bank
BPDB	–	Bangladesh Power Development Board
CCPP	–	combined cycle power plant
EPC	–	engineering, procurement, and construction
ESIA	–	environmental and social impact assessment
ESMF	–	environmental and social management framework
EIRR	–	economic internal rate of return
FIRR	–	financial internal rate of return
FSRU	–	floating storage and regasification[1] unit
LNG	–	liquefied natural gas
MPEMR	–	Ministry of Power, Energy and Mineral Resources
MMSCFD	–	million standard cubic feet per day
MW	–	megawatt
NO_x	–	oxides of nitrogen
O&M	–	operation and maintenance
Petrobangla	–	Bangladesh Oil, Gas & Mineral Corporation
PPA	–	power purchase agreement
PRG	–	partial risk guarantee
RBLPL	–	Reliance Bangladesh LNG and Power Limited
RBLTL	–	Reliance Bangladesh LNG Terminal Limited
RLNG	–	regasified liquefied natural gas
RPL	–	Reliance Power Limited
SPS	–	Safeguard Policy Statement
WACC	–	weighted average cost of capital

NOTES

(i) The fiscal year (FY) of RPL, RBLPL and RBLTL ends on 31 March. 'FY' before a calendar year denotes the year in which the fiscal year ends, e.g. FY2017 ends on 31 March 2017.

(ii) In this report, "$" refers to United States dollars.

[1] Regasification is the physical process by which liquefied natural gas (LNG) is heated to be returned into its gaseous state.

Vice-President	Diwakar Gupta, Private Sector and Cofinancing Operations
Director General	Michael Barrow, Private Sector Operations Department (PSOD)
Director	Shantanu Chakraborty, Infrastructure Finance Division 1, PSOD
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PROJECT AT A GLANCE

1. Basic Data — **Project Number:** 50253-001

Project Name	Reliance Bangladesh Liquefied Natural Gas and Power Project
Country	Bangladesh
Borrowers	Reliance Bangladesh LNG Terminal Limited Reliance Bangladesh LNG and Power Limited
Department /Division	PSOD/PSIF1

	2. Sector	**Subsector(s)**	**ADB Financing ($ million)[a]**
✓	Energy	Conventional energy generation	583.00
		Total	**583.00**

3. Strategic Agenda	**Subcomponents**	**Climate Change Information**	
Inclusive economic growth (IEG)	Pillar 1: Economic opportunities, including jobs, created and expanded	CO_2 reduction (tons per annum)	1,016,962
		Climate Change impact on the Project	Medium
Regional integration (RCI)	Pillar 1: Cross-border infrastructure		

4. Drivers of Change	**Components**	**Gender Equity and Mainstreaming**	
Partnerships (PAR)	Commercial cofinancing Implementation Private Sector	Some gender elements (SGE)	✓
Private sector development (PSD)	Promotion of private sector investment		

5. Poverty and SDG Targeting		**Location Impact**	
Geographic Targeting	No	Nation-wide	High
Household Targeting	No		
SDG Targeting	Yes		
SDG Goals	SDG7, SDG9		

6. Nonsovereign Operation Risk Rating

Obligor Name	Final Project Rating	Facility Risk Rating
Reliance Bangladesh LNG and Power Limited		
Reliance Bangladesh LNG Terminal Limited		

7. Safeguard Categorization — **Environment:** A — **Involuntary Resettlement:** B — **Indigenous Peoples:** C

8. Financing

Modality and Sources	Amount ($ million)
ADB	**503.00**
Nonsovereign LIBOR Based Loan (Regular Loan): Ordinary capital resources (Reliance Bangladesh LNG and Power Limited)	182.00
Nonsovereign LIBOR Based Loan (Regular Loan): Ordinary capital resources (Reliance Bangladesh LNG Terminal Limited)	71.00
Nonsovereign Partial Risk Guarantee without Govt Guarantee: Ordinary capital resources (Reliance Bangladesh LNG and Power Limited)	180.00
Nonsovereign Partial Risk Guarantee without Govt Guarantee: Ordinary capital resources (Reliance Bangladesh LNG Terminal Limited)	70.00
B-Loans	**0.00**
None	0.00
Official Cofinancing	**0.00**
None	0.00
Others	**509.00**
Total	**1,012.00**

[a] In addition to the partial risk guarantees on the loans to the project companies, ADB will provide partial risk guarantees of up to $80 million on interest rate swaps provided to the project companies.

I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on the proposed loans and partial risk guarantees (PRGs) for the Reliance Bangladesh Liquefied Natural Gas and Power Project in Bangladesh, comprising: (i) a loan of up to $182,000,000; a PRG for commercial bank loans of up to $180,000,000 covering principal, interest, and PRG fees; and a PRG of up to $60,000,000 covering breakage costs of interest rate swaps for these commercial bank loans for Reliance Bangladesh LNG and Power Limited (RBLPL); and (ii) a loan of up to $71,000,000; a PRG for commercial bank loans of up to $70,000,000 covering principal, interest, and PRG fees; and a PRG of up to $20,000,000 covering breakage costs of interest rate swaps for these commercial bank loans for Reliance Bangladesh LNG Terminal Limited (RBLTL).

II. THE PROJECT

A. Project Identification and Description

2. **Project identification.** Bangladesh has chronic power shortages. Despite increases in installed generation capacity since 2010, the country has been facing widening peak deficits in power generation[1] since power demand continues to increase and older generation plants are shut down for long periods of maintenance. The country's heavy dependence on natural gas for power generation[2] and declining domestic gas reserves exacerbate this deficit. The fertilizer industry and transport sector in Bangladesh, which also use natural gas, have suffered similar limitations of gas availability. In May 2017, 46% of demand from power generators and 57% of demand from fertilizer manufacturers were not met because of gas supply shortage.[3] As of June 2016, the total remaining recoverable domestic gas reserves were estimated at 13.6 trillion cubic feet,[4] and these are expected to be exhausted by 2026. The widening power demand–supply gap and the impending gas shortage have resulted in the Government of Bangladesh, Ministry of Power, Energy and Mineral Resources (MPEMR) (i) developing the Power System Master Plan, 2010 (updated in 2016), which calls for greater private sector investments in power generation; (ii) passing the Power and Energy Fast Supply Enhancement (Special Provision) Act, 2010, which provides a role for the private sector to import, regasify, and supply liquefied natural gas (LNG); and (iii) establishing a gas development fund, to accelerate gas exploration, production, and diversification of gas supply, including the import of LNG.[5]

3. To address the power deficit and gas supply shortage, Reliance Power Limited (RPL) submitted a proposal to the MPEMR in 2015 to develop 3,000 megawatts (MW) of power generation capacity and terminal facilities for the import of LNG for power generation. The power generation capacity was proposed to be developed in three phases and locations.[6] In 2016, RPL received approval from the government to develop the first phase (the project), which consists of (i) a 718 MW[7] combined cycle power plant (CCPP), using natural gas as fuel; and (ii) LNG import infrastructure (the LNG Terminal) supplying regasified LNG (RLNG) into the national gas

[1] Bangladesh Power Development Board. 2017. *Daily Electricity Generation Report, 1 September 2017.* Dhaka. Peak evening deficit of 1,769 megawatts (MW) on 31 August 2017.
[2] 7,628 MW of installed capacity, representing 62% of installed generation capacity in June 2016. Sector Overview (accessible from the list of linked documents in Appendix 2).
[3] Petrobangla. 2017. *Daily Gas & Condensate Production and Distribution Report, 20–21 May 2017.* Dhaka.
[4] Government of Bangladesh, Ministry of Power. 2016. *Power System Management Plan.* Dhaka.
[5] Sector Overview (accessible from the list of linked documents in Appendix 2).
[6] Phase 1: 745 MW at Meghnaghat; phase 2: 1,500 MW at Chittagong; and phase 3: 750 MW at Maheshkali.
[7] Refers to net power, which is the gross power generated by the CCPP net of auxiliary load.

transmission network. The LNG supply will be arranged by the national oil and gas company, Bangladesh Oil, Gas & Mineral Corporation (Petrobangla), and delivered by LNG suppliers to an offshore floating storage and regasification unit (FSRU),[8] which will be connected to the LNG Terminal facilities. The FSRU will be owned and operated separately by a third party, and will be leased under a time charter party agreement.

4. **Project design.** The project involves the following two components:

(i) **Combined cycle power plant.** The CCPP consists of two 9F Class General Electric gas turbines, two heat recovery steam generators, and one steam turbine, together with auxiliary equipment and supporting infrastructure at the site. The gross generation output of the CCPP is 745 MW and the net generation output is 718 MW. When complete, the CCPP will sell net power generated to Bangladesh Power Development Board (BPDB) according to the terms of a long-term power purchase agreement (PPA). The CCPP will be located on land provided by BPDB under a land lease agreement. Supporting infrastructure at the site will include electrical equipment, control systems, raw water treatment and cooling water systems, and gas and power transmission interconnection facilities. A subsidiary of Petrobangla will supply natural gas to the CCPP.

(ii) **Liquefied natural gas terminal.** The LNG Terminal, to be developed off the coast of Kutubdia Island, consists of a mooring point, a jetty, and an 18-kilometer long 30-inch wide natural gas pipeline, which will connect the FSRU to a metering point at Valve Station 2 in Napura. RBLTL will operate the LNG Terminal's facilities. Petrobangla and its subsidiaries own and operate the national gas transmission grid.

5. **The borrowers.** The project components described above will be owned and operated by two separate borrowers: (i) RBLPL, a privately owned company incorporated in Bangladesh to develop, own, and operate the CCPP; and (ii) RBLTL, a privately owned company incorporated in Bangladesh to develop, own, and operate the LNG Terminal. Both RBLPL and RBLTL are wholly owned by RPL, via its wholly owned subsidiaries.

6. **The sponsor.** RPL was incorporated in 1995 to develop, own, and operate power projects in India and international markets. RPL is the largest private sector power producer in India and operates 5,945 MW of power generation capacity in the states of Madhya Pradesh, Uttar Pradesh, Maharashtra, and Rajasthan.[9] RPL's power plants generate power from thermal and renewable energy sources, and the average annual availability of all plants was over 90% during FY2017. RPL's power plants sell power generated under long-term PPAs with predetermined stable tariffs. During FY2017, RPL aggregate revenue was reported at ₹108.9 billion; earnings before interest, tax, depreciation, and amortization were ₹46.4 billion; cash flow from operations was ₹46.7 billion; and net profit was ₹11.0 billion. As of 31 March 2017, RPL's total assets were ₹641.7 billion and its net worth was ₹213.7 billion. RPL was listed in 2007, and shares are traded on India's National Stock Exchange and Bombay Stock Exchange. As of 30 June 2017, RPL's market capitalization was ₹130.9 billion and the company has a credit rating of BBB from ICRA Limited.[10]

7. Confidential information deleted.

[8] The FSRU is berthed offshore, has regasification capacity of 500 million standard cubic feet per day (mmscfd), and has storage capacity of 146,700 cubic meters.
[9] Client Information (accessible from the list of linked documents in Appendix 2).
[10] ICRA Limited, a Moody's investor service company.

B. Development Impact, Outcome, and Outputs

8. **Impact.** The project is aligned with the following impact: Power and Energy Sector Master Plan for Bangladesh (2016), Vision 2041 objectives of enhancing imported energy infrastructure, and constructing a robust, high-quality power network.[11] It will help address a widening gap between the demand and supply of electricity and natural gas, both of which are critical for continued industrial and economic growth. The project will increase available de-rated generation capacity by about 10% and provide 12.5% of the targeted LNG terminal capacity by 2041 (footnote 5). The development of infrastructure to import LNG will ensure that Bangladesh can continue to use existing gas-fired power generation capacity even while domestic gas reserves are declining and will be eventually exhausted. The long-term assured availability of natural gas via imports will (i) reduce the need to import other fuels like coal or liquid fuel, which are more harmful to the environment; (ii) allow the phasing out of expensive, short-term rental power plants that rely on imported fuel oil, reducing the cost of purchased power for BPDB; and (iii) result in national foreign exchange savings where the import of more expensive imported fuel oil is reduced.

9. **Outcome.** The project's outcome will be increased ability of Bangladesh's electricity and gas systems to respond to demand.

10. **Outputs.** The project's outputs are the development and commissioning of the CCPP, and infrastructure to facilitate the import and transmission of 500 million standard cubic feet per day of gas, along with the associated job creation and support for the growth of the local economy. Gender responsive stakeholder consultations and community engagement will be carried out. The project is expected to create 1,000 jobs in the construction phase. ADB's PRG has mobilized several international commercial banks, which will be lending to an infrastructure project in Bangladesh for the first time.

C. Alignment with ADB Strategy and Operations

11. **Consistency with ADB strategy and country strategy.** The project supports infrastructure development and private sector operations, two of ADB's main strategic priorities for 2014–2020.[12] ADB's country partnership strategy for Bangladesh highlights nine priority areas, of which the project is aligned with three: (i) easing infrastructure constraints, (ii) providing climate and disaster-resilient infrastructure and services, and (iii) creating conditions for greater private sector participation.[13] Easing of infrastructure constraints in the energy sector is a core priority for the government, and the country partnership strategy identifies two key outcomes that ADB contributes to: (i) an increase in access to electricity from 72% of households in 2015 to 96% by 2020, and (ii) an increase in per capita generation of electricity from 371 kilowatt-hours (kWh) in 2015 to 514 kWh by 2020. Led by RPL, the project involves a foreign direct investment, and knowledge transfer of developing and operating energy infrastructure, from India to Bangladesh. Reliance is the first among several Indian companies to pursue activities aligned with efforts by both governments to increase Indian investments in Bangladesh. The project is in line with ADB's operational plan for regional cooperation and integration.[14]

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[11] Government of Bangladesh, Ministry of Power, Energy and Mineral Resources. 2016. *Power and Energy Sector Master Plan 2016*. Dhaka.
[12] ADB. 2014. *Midterm Review of Strategy 2020: Meeting the Challenges of a Transforming Asia and Pacific.* Manila.
[13] ADB. 2016. *Country Partnership Strategy: Bangladesh, 2016–2020.* Manila.
[14] ADB. 2016. *Operational Plan for Regional Cooperation and Integration: Promoting Connectivity, Competitiveness, Regional Public Goods, and Collective Action for Asia and the Pacific (2016–2020)*. Manila.

D. Project Cost and Financing Plan

12. Confidential information deleted.

13. Confidential information deleted.

E. Implementation Arrangements

14. Confidential information deleted.

F. Projected Financial and Economic Performance

15. Confidential information deleted.

III. THE PROPOSED ADB ASSISTANCE

A. The Assistance

16. ADB will provide: (i) a loan of up to $182,000,000 to RBLPL; a PRG of up to $180,000,000[15] covering principal, interest, and PRG fees, for commercial lenders in connection with their loans to RBLPL; and a PRG of up to $60,000,000[16] covering breakage costs of interest rate swaps for swap counterparties in connection with commercial loans to RBLPL; and (ii) a loan of up to $71,000,000 to RBLTL; a PRG of up to $70,000,000[17] covering principal, interest, and PRG fees, for commercial lenders in connection with their loans to RBLTL; and a PRG of up to $20,000,000[18] covering breakage costs of interest rate swaps for swap counterparties in connection with commercial loans to RBLTL. As a senior secured lender, ADB will have a first ranking charge over the project's fixed and movable assets; an assignment of the two borrowers' rights under the project agreements, licenses, and approvals; bank accounts; insurances; and share pledges, to the extent available.

B. Value Added by ADB Assistance

17. ADB's role as a direct lender and guarantee provider will enable the project to mobilize much-needed long-term debt financing, which has very limited availability in the domestic and international markets. The quantum of financing for a private sector project is considered substantial, and has been made available by mobilizing commercial lenders (through ADB's risk mitigation via its PRG), many of which are lending for the first time in Bangladesh. ADB's involvement significantly enhances environmental and social standards for the project. Corporate governance standards are at an internationally acceptable level because of the presence of international lenders, led by ADB. Successful financing of the project will establish precedents for future financings of similar projects, including integrated LNG and power projects, by boosting investor and lender confidence.

C. Risks

18. Confidential information deleted.

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[15] ADB's maximum aggregate liability (MAL) under this PRG will be up to $316,000,000.
[16] ADB's MAL under this PRG will be up to $60,000,000.
[17] ADB's MAL under this PRG will be up to $130,000,000.
[18] ADB's MAL under this PRG will be up to $20,000,000.

19. Confidential information deleted.

20. Confidential information deleted.

21. Confidential information deleted.

22. Confidential information deleted.

23. Confidential information deleted.

24. Confidential information deleted.

25. Confidential information deleted.

IV. POLICY COMPLIANCE

A. Safeguards and Social Dimensions

26. The project is classified category A for environment under the ADB's Safeguard Policy Statement (2009) (SPS). There are two environmental and social impact assessment (ESIA) studies undertaken for the CCPP and the LNG Terminal. The ESIAs identify the environmental impacts and risks and incorporate, in procedures and plans, adequate measures to avoid, minimize, mitigate and compensate for potential adverse impacts associated with the project construction and operation. The ESIAs comply with (i) SPS requirements, (ii) International Finance Corporation Environmental Health and Safety guidelines, and (iii) national legislation.

27. The CCPP's ESIA includes a detailed evaluation of air quality. The CCPP will utilize natural gas as fuel and the pollutants of potential concern are mainly oxides of nitrogen (NOx). The CCPP will minimize its contribution to ambient air quality (AAQ) through the use of gas turbines incorporating dry, low NOx burners. An air quality evaluation using United States Environmental Protection Agency (USEPA) approved dispersion emission modeling included project emissions from the CCPP and cumulative emissions from other power plants in the area.[19] Modelled NOx concentrations were in compliance with the applicable criteria. Dispersion modelling indicates the background level of nitrogen dioxide (NO_2) in the project area will be compliant with the government's National AAQ Standards, World Health Organization AAQ Guidelines, and U.S. National AAQ Standards. The CCPP water requirement will be met by Meghna River, a perennial river flowing adjacent to the CCPP site. As the CCPP will utilize a closed circuit cooling system, low volumes of water extraction and discharge will occur. This will ensure minimal (less than 3° Celsius) rise above the ambient river temperature at the point of discharge and hence no significant impact on the river fish population is anticipated. An online monitoring system will measure water parameters at the discharge point. Since the area is prone to cyclones, the CCPP's project design makes provisions to avoid risks due to flooding or sea level rise.

28. The LNG Terminal and FSRU will be located off the west coast of Kutubdia Island. While the terminal itself and the FSRU's activities will generate limited air, noise and water impacts, RBLTL has developed procedures and plans for adequate management of these impacts. The ESIA found that endangered terrestrial and marine flora and fauna, such as Olive Ridley turtles and dolphins, are not expected to be adversely impacted by the project and the ESIA properly

[19] The CCPP will not be operated under single cycle as per the power purchase agreement (PPA).

identifies and evaluates impacts and risks on the biodiversity. The ESIA details measures to avoid, minimize, or mitigate these risks in the environmental management plan. ADB's due diligence confirms that RBLTL is committed to providing safe and healthy working conditions for staff and contractors. Operational risks are identified and appropriate mitigation measures, including an emergency response and disaster management plan, are in place.

29. Due diligence confirmed the adequacy of the institutional capacity and commitment of the borrowers to manage the project's environmental and social impacts. RPL conducted meaningful consultations with relevant stakeholders at the project sites, and the ESIA report was disclosed on the ADB website on 16 March 2017. Community liaison officers will be deployed to develop, implement and manage stakeholder engagement and grievance redress mechanisms for the project. The borrowers are committed to implementing the necessary mitigation measures, with submission of semiannual progress reports, to comply with ADB's SPS requirements.

30. The project is classified Category B for involuntary resettlement and Category C for indigenous peoples under ADB's SPS. The CCPP will not require any land acquisition as it will be located on government land. Impact on seasonal grazing activity at the site is expected to be insignificant since this will continue undisrupted in vacant areas belonging to BPDB. Further, RBLPL has committed to providing assistance to cattle owners as part of its community engagement activities. RBLPL will locate transmission towers, connecting the CCPP to the transmission network, within BPDB land, avoiding any land utilized for seasonal cultivation and also avoiding impact on standing crops and assets. At the LNG Terminal site, exclusion zones or restriction of movement of fishing communities are not anticipated during the construction and operation of the subsea pipeline. Involuntary resettlement impacts are expected from land acquisition for the gas pipeline connecting the FSRU to the metering station. The land acquisition and resettlement for the pipeline will be undertaken by Petrobangla and is expected to be completed in 2018. RBLTL will bear the cost of resettlement activites. Preparation of resettlement plans for the pipeline, in line with ADB's SPS, is not possible at this stage since the alignment has not been finalized and therefore there is limited preparedness for land acquisition. Based on the assessment of the preliminary pipeline alignment, involuntary resettlement impacts are not expected to be significant given that (i) all land acquired for the pipeline will be compensated at replacement costs and will also be available to land owners for continued use after construction of the pipeline, and (ii) permanent impact related to land acquisition will be limited to about 23 households who cultivate a four acre plot proposed for the valve station. To address involuntary resettlement impacts, Petrobangla will prepare and implement a Resettlement Plan (RP) following the Resettlement Framework, consistent with World Bank Operational Policies and ADB's SPS.[20]

31. The borrowers will report to ADB on compliance with SPS, including implementation of the RP. Due diligence and stakeholder consultations confirmed that there are no outstanding grievances or complaints associated with the ownership or use of land at project locations. No indigenous peoples reside in or around the project areas, or are expected to be affected by the project. The project is not expected to affect territories or natural and cultural resources owned, used, occupied, or claimed by indigenous peoples as their ancestral domain.

32. During construction phase, civil works contractors are expected to provide work opportunities for the local community. The borrowers will comply with national labor laws and, pursuant to ADB's Social Protection Strategy, will take measures to comply with the internationally recognized core labor standards. The project is classified as having some gender elements. The borrowers commit to preferential engagement of women in all project related employment, target

[20] Resettlement Framework (accessible from the list of linked documents in Appendix 2).

the hiring of women in the unskilled workforce for the CCPP, and ensure women's participation in stakeholder and community engagement initiatives. Information disclosure and consultations with affected people are conducted in accordance with ADB requirements.[21]

B. Anticorruption Policy

33. RPL, as the ultimate owner of RBLPL and RBLTL, was advised of ADB's policy of implementing best international practice relating to combating corruption, money laundering, and the financing of terrorism. ADB will ensure that the investment documentation includes appropriate provisions prohibiting corruption, money laundering, and the financing of terrorism, and remedies for ADB in the event of noncompliance.

C. Investment Limitations

34. The proposed loans and guarantees are within the medium-term, country, industry, group, and single-project exposure limits for nonsovereign investments.

D. Assurances

35. Consistent with the Agreement Establishing the Asian Development Bank (the Charter),[22] ADB will proceed with the proposed assistance upon establishing that the Government of Bangladesh has no objection to the proposed assistance to the project. ADB will enter into suitable finance documentation, in form and substance satisfactory to ADB, following approval of the proposed assistance by the ADB Board of Directors.

V. RECOMMENDATION

36. I am satisfied that the proposed loans and partial risk guarantees (PRGs) would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve

(i) the loan of up to $182,000,000; the PRG for commercial bank loans of up to $180,000,000 covering principal, interest, and PRG fees; and the PRG of up to $60,000,000 covering breakage costs of interest rate swaps for swap counterparties in connection with the commercial bank loans for Reliance Bangladesh LNG and Power Limited; and

(ii) the loan of up to $71,000,000; the PRG for commercial bank loans of up to $70,000,000 covering principal, interest, and PRG fees; and the PRG of up to $20,000,000 covering breakage costs of interest rate swaps for swap counterparties in connection with the commercial bank loans for Reliance Bangladesh LNG Terminal Limited,

all from ADB's ordinary capital resources for the Reliance Bangladesh Liquefied Natural Gas and Power Project in Bangladesh, with such terms and conditions as are substantially in accordance with those set forth in this report, and as may be reported to the Board.

Takehiko Nakao
President

8 November 2017

[21] Summary Poverty Reduction and Social Strategy; Safeguards and Social Dimensions Summary (accessible from the list of linked documents in Appendix 2).

[22] ADB. 1966. *Agreement Establishing the Asian Development Bank.* Manila.

DESIGN AND MONITORING FRAMEWORK

Impacts the Project is Aligned with

Plan 1 : Enhancement of imported energy infrastructure and its flexible operation [a]
Plan 3: Construction of a robust, high quality power network [a]

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
Outcome Ability of Bangladesh's electricity and gas systems to respond to demand improved	By 2021 a. Electricity generated and delivered to offtaker increased to 5,300GWh per year (2017 baseline: 0) b. 1,016,962 tons of CO_2 avoided annually (2017 baseline: 0)[b] c. 185 million mmBtu of gas processed per year (2017 baseline: 0)[c] d. Number of jobs provided during operation (2017 baseline: 0) amount to: (i) at least 160 by the combined cycle power plant (ii) at least 70 by the LNG terminal e. Total payments to government provided during operations at least US$8 million by the LNG terminal (2017 baseline: 0)[d]	a-e. RBLPL and RBLTL annual monitoring reports	Changes in regulatory environment or feed-in tariffs Price of LNG causes cost increases
Outputs 1. CCPP installed and commissioned 2. LNG terminal installed and commissioned 3. Local employment generated 4. Confidential information deleted	By 2020 1. Total installed electricity generation capacity of project increased to 745MW (2017 baseline: 0) 2. Total installed LNG regasification capacity increased to 500 mmscfd (2017 baseline: 0) 3a. Number of jobs provided during construction phase (2017 baseline: zero) amount to (i) at least 500 by the power plant (ii) at least 500 by the LNG terminal 3b. Percentage of women engaged as unskilled workers during construction of the CCPP amount to 30% (2017 baseline: 0) 4 Confidential information deleted	1-5. RBLPL and RBLTL annual monitoring reports	Construction delays due to force majeure events Cost overruns

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
5. Gender responsive stakeholder consultations and community engagement carried out	5. Employees and consultants with gender expertise deployed to ensure women's participation in stakeholder and community engagement activities. (2017 baseline: 0)		

Key Activities with Milestones

Outputs 1-5. Power plants installed; Local employment generated; Growth of local economy supported; Gender responsive stakeholder consultations and community engagement carried out.

1. ADB executes loan agreement with RBLPL and RBLTL by December 2017
2. Construction of CCPP and LNG Terminal commences by January 2018
3. CCPP commissioned by July 2020 and LNG Terminal by April 2019

Inputs

ADB: $253 million (Direct Loan) and $330 million (PRG for commercial lenders)
Commercial lenders: $250 million (with ADB's PRG)
Other lenders and equity: $509 million

Assumptions for Partner Financing

Not Applicable

ADB= Asian Development Bank, CO_2 = Carbon Dioxide, CCPP = combined cycle power plant; GWh = Gigawatt Hour, LNG = Liquefied Natural Gas, mmBtu = million British thermal unit, mmscfd = million standard cubic feet per day, MW = Megawatt, RBLPL = Reliance Bangladesh LNG and Power Limited, RBLTL = Reliance Bangladesh LNG Terminal Limited.

[a] Government of Bangladesh, Ministry of Power. 2016. *Power System Master Plan 2016*. Dhaka.

[b] See Contribution to the ADB Results Framework (accessible from the list of linked documents in Appendix 2).

[c] Based on the following assumptions: (i) LNG terminal runs at 90% of maximum capacity per year, (ii) gross calorific value (GCV) of gas of 10,000 kilocalories per standard cubic meter; and (iii) conversion factors of (i) 1 standard cubic meter (scm) = 35.31 standard cubic feet (scf) , and (ii) 1 million British thermal unit (mmBtu) = 252 kilocalories. Calculation: 90% x (500 million scf per day / 35.31 scf per scm) x 365 days x GCV / 252 kilocalories per mmBtu = 185,000,000 mmBtu.

[d] The power plant's contributions to government revenues are not considered because it will only start generating taxes in 2030.

Source: Asian Development Bank.

LIST OF LINKED DOCUMENTS

http://www.adb.org/Documents/RRPs/?id=50253-001-4

1. Sector Overview
2. Client Information
3. Details of Implementation Arrangements
4. Contribution to the ADB Results Framework
5. Financial Analysis
6. Economic Analysis
7. Country Economic Indicators
8. Summary Poverty Reduction and Social Strategy
9. Safeguards and Social Dimensions Summary
10. Environmental and Social Impact Assessment: Reliance Bangladesh LNG and Power Limited
11. Environmental and Social Impact Assessment: Reliance Bangladesh LNG Terminal Limited
12. Resettlement Framework

Supplementary Document

13. Integrity and Tax Due Diligence