

Project Administration Manual

Project Number: 49214-002
Loan Number: TBD
March 2017

India: Solar Transmission Sector Project

ABBREVIATIONS

ADB	=	Asian Development Bank
CSS	=	country safeguard systems
CTF	=	Clean Technology Fund
CPTD	=	Compensation Plan for Temporary Damages
EAMP	=	Environmental Assessment Management Plan
EMP	=	Environmental Management Plan
ESPP	=	Environment & Social Policy and Procedures
HVDC	=	High Voltage Direct Current
ICB	=	International Competitive Bidding
IEAR	=	Initial Environment Assessment Report
IEE	=	Initial Environmental Examination
IPP	=	Indigenous Peoples Plan
OCR	=	Ordinary Capital Resources
PAM	=	Project Administration Manual
PMU	=	Project Management Unit
RAP	=	Rehabilitation Action Plan
RRP	=	Report and Recommendation of the President to the Board
RVPN	=	Rajasthan Rajya Vidyut Prasaran Nigam Limited
SAMP	=	Social Assessment and Management Plan
SOE	=	Statement of Expenditures
SPS	=	Safeguard Policy Statement
TPDP	=	Tribal People Development Plan

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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.

The Power Grid Corporation of India Limited (POWERGRID) are 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 POWERGRID of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At loan negotiations, the borrower and ADB agreed to the PAM and ensured consistency with the loan agreement. Such agreement was 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

1. **The Project.** The project will finance high voltage transmission systems to evacuate electricity generated from the new mega solar parks to the inter-state grid, and improve reliability of the national grid system. The project will be based on the sector loan approach, which will include subprojects in various locations throughout India. The project will be implemented by the Power Grid of India Corporation, Limited (POWERGRID).

2. **Impact and Outcome.** The impact will be the increased share of clean energy in the power mix, increased overall efficiency of the power system, and enhanced energy security in India. The outcome will be the expanded supply of clean power to the national transmission system.

3. **Outputs.** The project's output will be (i) the improved capacity of interstate transmission network, particularly to transmit the increased supply of electricity generated from new solar parks to the national grid, and (ii) POWERGRID's improved autonomous management of its safeguard and procurement systems, based on its own policies and procedures satisfactory to ADB.

4. **Subprojects.** The sector lending approach sets out the selection criteria for subprojects that will be financed by ADB. They are as follows:

- (i) The subproject shall be technically feasible for grid improvement and expansion, including to areas where solar parks are being developed.
- (ii) The subproject shall be financially and economically viable.
- (iii) The subproject shall not have environmentally or socially significant impacts warranting an ADB safeguard category A.¹

5. The transmission subprojects will mainly include equipment and its related work for inter-state transmission lines and grid substations. The physical output will include the procurement, installation and commissioning of the following two advance subprojects to meet the selection criteria under the sector loan:

- (i) Grid systems for solar parks at Bhadla, Rajasthan (to help power supply up to 2,500 MW):²
 - 765kV double circuit transmission line from Bhadla to Bikaner (175 km)
 - 400kV double circuit (quad) transmission line from Bhadla (POWERGRID) – Bhadla (Rajasthan Rajya Vidyut Prasaran Nigam Limited (RVPN)) (26 km)
 - 765/400/220kV substation with 3x1500 MVA 765/400kV transformers, 3x240 MVAR 765kV reactors, 3x500 MVA 400/220kV transformers, 1x125 MVAR reactor at Bhadla and 2x240 MVAR reactors at Bikaner.
 - Extensions of the existing Bikaner and Bhadla substations
- (ii) Grid systems for solar parks at Banaskantha, Gujarat (to help power supply up to 700 MW):

¹ The safeguard category's definition can be referred to the POWERGRID's Environmental and Social Policy and Procedures, and the ADB's Safeguard Policy statement (2009).

² The transmission systems will be used to evacuate power from three solar parks at Bhadla (1,500 MW in total), and to help evacuate a solar park at Fatehgarh (1,000 MW).

- 400kV double circuit (twin) transmission line from Banaskantha Pooling station to Banaskantha (POWERGRID) (95km)
- Extensions of the existing Banaskantha (POWERGRID)

6. Based on these eligibility criteria, ADB and POWERGRID have jointly appraised the following core subprojects of transmission systems: (i) at Bhadla in Rajasthan (to help supply solar power up to 2,500 MW); and (ii) at Banaskantha in Gujarat (to help supply solar power up to 700 MW). The subsequent subprojects will be reviewed based on their readiness, and will need to satisfy the eligibility criteria. These include (i) transmission systems at Tumkur (phase II) in Karnataka (to help supply solar power up to 1,000 MW), and (ii) upgrading an existing high voltage direct current (HVDC) system between Rihand and Dadri in Uttar Pradesh to improve grid stability. POWERGRID's immediate investment plans consist of constructing the high voltage transmission network to connect the solar parks, and improve overall efficiency of the national grid system.

II. IMPLEMENTATION PLANS

A. Project Readiness Activities

Figure 1: Project Readiness Activities

Indicative Activities	2016												2017				Responsibility
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	
Advance contracting actions	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	POWERGRID
Retroactive financing actions									X	X	X	X	X	X	X		ADB
Establish project implementation arrangements	X																POWERGRID
ADB Board approval																X	ADB
Loan signing															X		GOI, POWERGRID & ADB
Government legal opinion provided																X	GOI
POWERGRID budget inclusion				X													POWERGRID
Loan effectiveness																X	ADB

ADB = Asian Development Bank, GOI = Government of India, POWERGRID = Power Grid Corporation of India Limited.

Source: Asian Development Bank.

B. Overall Project Implementation Plan

Figure 2: Overall Implementation Plan

Description	2016				2017				2018				2019				2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1. Bhadla subproject (Rajasthan)																												
Tendering and Award		■	■	■																								
Preparatory works and mobilization					■	■	■	■																				
Civil works, supply and erection of equipment									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Testing and Commissioning																												
2. Banaskantha subproject (Gujarat)																												
Tendering and Award		■	■	■	■																							
Preparatory works and mobilization					■	■	■	■																				
Civil works, supply and erection of equipment									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Testing and Commissioning																												
3. Tumkur subproject (Karnataka)																												
Tendering and Award		■	■	■	■																							
Preparatory works and mobilization					■	■	■	■																				
Civil works, supply and erection of equipment									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Testing and Commissioning																												
4. Rihand-Dadri subproject (Uttar Pradesh)																												
Tendering and Award					■	■	■	■	■																			
Preparatory works and mobilization										■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Civil works, supply and erection of equipment										■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Testing and Commissioning																												
Reviews									■		■		■		■		■		■		■		■		■		■	
Project Completion Report																												

Source: Power Grid Corporation of India Limited and Asian Development Bank estimates.

III. PROJECT MANAGEMENT ARRANGEMENTS

A. Project Implementation Organizations – Roles and Responsibilities

Project implementation organizations	Management Roles and Responsibilities
<ul style="list-style-type: none"> • Power Grid Corporation of India Ltd. (POWERGRID) 	<ul style="list-style-type: none"> ➤ Overall responsibility for implementation of the Project
<ul style="list-style-type: none"> • Project Management Unit (PMU) 	<ul style="list-style-type: none"> ➤ Responsible for coordination, implementation, and administration of the project. ➤ Headed by Executive Director (Corporate Planning) at its headquarters.
<ul style="list-style-type: none"> • ADB 	<ul style="list-style-type: none"> ➤ Will undertake regular project review and facilitate in project implementation

B. Key Persons Involved in Implementation

Executing Agency

POWERGRID
Head Office

Officer's Name: Mr. U. Pande
Position: General Manager (Corporate Planning)
Telephone: +91 124-2571960
Email address: upande@powergridindia.com
Office Address: 'SAUDAMINI', Plat No. 2, Sector 29,
Gurgaon 122 001, Haryana, India

ADB

South Asia Energy Division

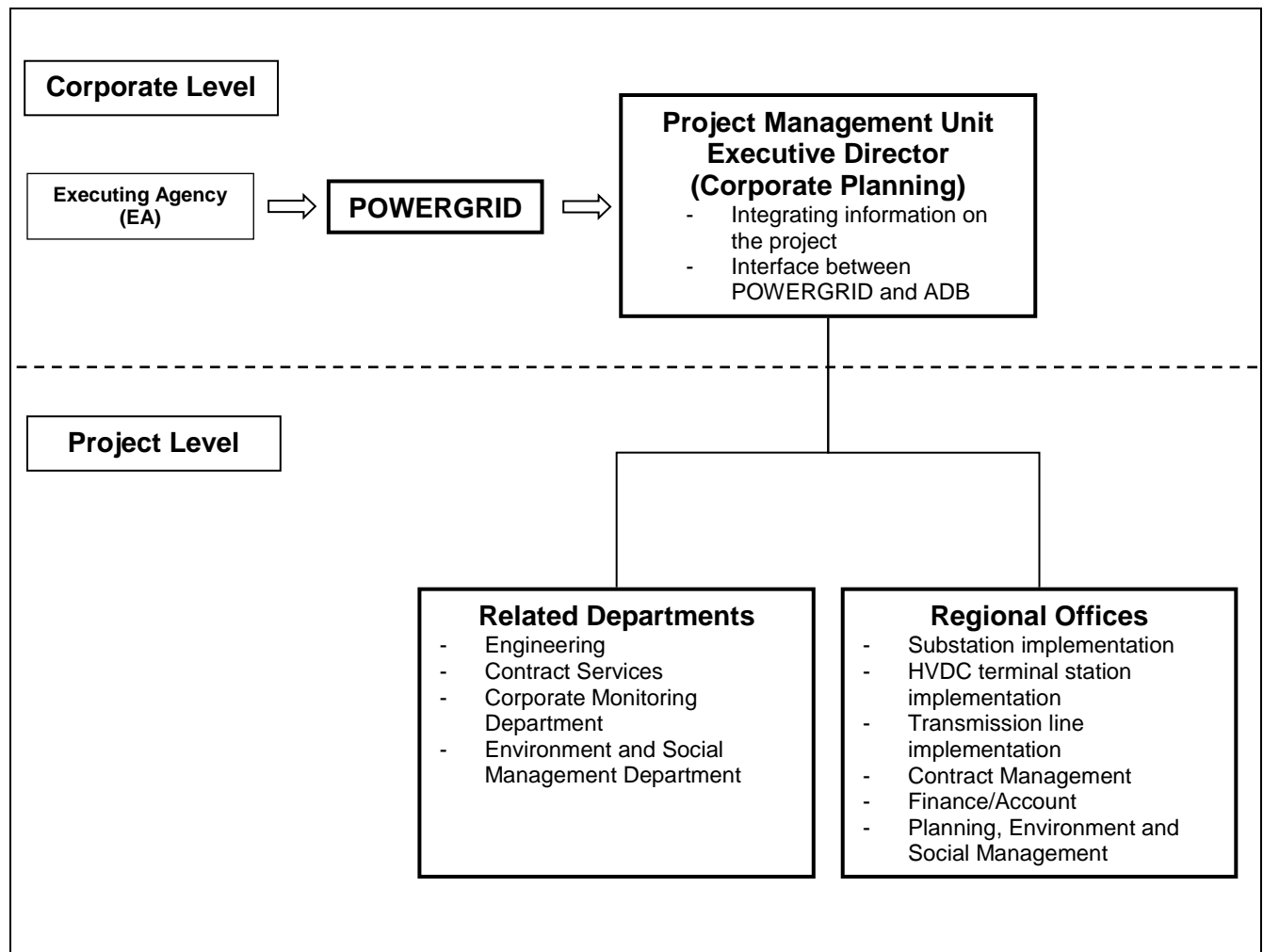
Staff Name: Mr. Priyantha Wijayatunga
Position: Director (SAEN)
Telephone No.: +63 2 632 6301
Email address: pwijayatunga@adb.org

Mission Leader

Staff Name: Mr. Kaoru Ogino
Position: Principal Energy Specialist (SAEN)
Telephone No.: +63 2 632 5479
Email address: kogino@adb.org

C. Project Organization Structure

Figure 3: Project Organization Structure



ADB = Asian Development Bank; HVDC = high voltage direct current; POWERGRID = Power Grid Corporation of India Limited.

IV. COSTS AND FINANCING

7. The project is estimated to cost \$450 million, including contingencies and financing charges, of which ADB will finance \$225 million, comprising (i) \$175 million from the ADB ordinary capital resources (OCR), and (ii) \$50 million from the Clean technology Fund (CTF) to be administered by ADB.

A. Cost Estimates Preparation and Revisions

8. The cost estimates were prepared by ADB based on the information provided by POWRGRID. The hard cost estimates of each of the subprojects is based on the detailed project report with the contingencies and the financial charges during implementation computed based on ADB norms.

B. Key Assumptions

9. The cost estimates is based in 2016 prices, and includes estimated taxes and duties of the equivalent of \$32 million to be financed from POWERGRID resources. The contingencies comprise physical and price contingencies and foreign exchange variation. Physical contingencies computed at 3% for substations and equipment, civil works and environmental and social safeguards. Price contingencies computed at 1.5% on foreign exchange costs and 5.5% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate. The financing plan Includes interest and commitment charges. Interest during construction for ADB sovereign loan is computed at the 5-year forward London interbank offered rate plus a spread of 0.5%, and a sovereign guarantee fee (payable by Power Grid Corporation of India Limited to the Government of India) of 1.2%. Commitment charges for an ADB OCR loan are 0.15% per year to be charged on the undisbursed loan amount. Interest during construction for ADB CTF loan has been computed at an interest rate of 0.25%, a multilateral development banks fee of 0.18%, and a sovereign guarantee fee (payable by Power Grid Corporation of India Limited to the Government of India) of 1.2%. Applicable rates for additional debt funds are included.

Table 1: Summary Cost Estimates

Item	Amount
A. Base Cost	
1. Bhadla subproject (Rajasthan)	199.0
2. Banaskantha subproject (Gujarat)	27.4
3. Tumkur subproject (Karnataka)	82.9
4. Rihand–Dadri subproject (Uttar Pradesh)	76.7
Subtotal (A)	386.0
B. Contingencies	43.0
C. Financing Charges During Implementation	21.0
Total (A+B+C)	450.0

Source: Power Grid Corporation of India Limited and Asian Development Bank estimates.

C. Detailed Cost Estimates by Expenditure Category

Table 2: Detailed Cost Estimates by Expenditure Category

Item	(US \$ Million)			Total Cost	% of Base Costs
	Foreign Exchange	Local Currency			
A. Investment Costs					
1 Civil Works	0.0	5.3	5.3	1.2	
2 Equipment	0.0	326.8	326.8	72.6	
3 Environment and Social Mitigation	0.0	34.4	34.4	7.6	
Subtotal (A)	0.0	366.5	366.5	81.4	
B. Recurrent Cost					
1 Overheads	0.0	19.5	19.5	4.3	
Total Base Cost	0.0	19.5	19.5	4.3	
C. Contingencies					
1 Physical	0.0	11.1	11.1	2.5	
2 Price	0.0	32.0	32.0	7.1	
Subtotal (C)	0.0	43.1	43.1	9.6	
D. Financing Charges During Implementation	5.8	15.1	20.9	4.6	
Total Project Cost (A+B+C+D)	5.8	444.2	450.0	100.0	

Source: Power Grid Corporation of India Limited and Asian Development Bank estimates.

D. Allocation and Withdrawal of Loan Proceeds

Table 3: Allocation and Withdrawal of Loan Proceeds (ADB OCR)

Number	Item	Total Amount Amount Allocated For ADB Financing Category (\$ million)	ADB Financing Percentage and basis for withdrawal from the Loan Account
1	Goods and Works	151.4	100% of total expenditure*
2	Unallocated	23.6	
	Total	175.0	

*Exclusive of local taxes and duties imposed within the territory of the Guarantor.

Table 4: Allocation and Withdrawal of Loan Proceeds (CTF)

Number	Item	Total Amount Amount Allocated for ADB Financing Category (\$ million)	ADB Financing Percentage and basis for withdrawal from the Loan Account
1	Goods and Works	43.4	100% of total expenditure*
2	Unallocated	6.6	
	Total	50.0	

*Exclusive of local taxes and duties imposed within the territory of the Guarantor.

E. Detailed Cost Estimates by Financier

Table 5: Detailed Cost Estimates by Financier

Item	(\$ million)								
	ADB		CTF		Domestic Loans/Bonds		POWERGRID Equity		Total Cost
	Amount	% of Cost	Amount	% of Cost	Amount	% of Cost	Amount ¹	% of Cost	
		Category		Category		Category		Category	
A. Investment costs									
1 Civil Works	0.0	0.0	0.0	0.0	0.0	0.0	5.3	100.0	5.3
2 Equipment	151.4	46.3	43.4	13.3	69.8	21.3	62.2	19.0	326.8
3 Environment and Social Mitigation	0.0	0.0	0.0	0.0	0.0	0.0	34.4	100.0	34.4
Subtotal (A)	151.4	41.3	43.4	11.8	69.8	19.0	101.9	27.8	366.5
B. Recurrent Costs									
1 Overheads	0.0	0.0	0.0	0.0	0.0	0.0	19.5	100.0	19.5
Subtotal (B)	0.0	0.0	0.0	0.0	0.0	0.0	19.5	100.0	19.5
Total Base Cost	151.4	39.2	43.4	11.2	69.8	18.1	121.4	31.4	386.0
C. Contingencies	23.6	54.7	6.6	15.5	7.8	18.0	5.1	11.8	43.1
D. Financing Charges during implementation	0.0	0.0	0.0	0.0	12.4	59.4	8.5	40.6	20.9
Total Project Cost (A+B+C+D)	175.0	38.9	50.0	11.1	90.0	20.0	135.0	30.0	450.0
% Total Project Cost		38.9		11.1		20.0		30.0	100.0

ADB = Asian Development Bank. POWERGRID = Power Grid Corporation of India Limited.

¹ Includes taxes and duties of the equivalent of \$ 32 million estimated.

Sources: Power Grid Corporation of India Limited and Asian Development Bank estimates.

F. Detailed Cost Estimates by Components

Table 6: Detailed Cost Estimates by Components
(\$ million)

Item	(\$ million)								
	Total Cost	Bhadla Transmission Amount	% of cost category	Banaskantha Transmission Amount	% of cost category	Tumkur Transmission Amount	% of cost category	Rihand–Dadri Transmission Amount	% of cost category
A. Investment Costs									
1 Civil Works	5.3	5.1	96.2	0.0	0.0	0.2	3.8	0.0	0.0
2 Equipment	326.8	172.8	52.9	15.5	4.7	61.8	18.9	76.7	23.5
3 Environment and Social Mitigation	34.4	9.5	27.6	9.6	27.9	15.3	44.5	0.0	0.0
Subtotal (A)	366.5	187.4	51.1	25.1	6.8	77.3	21.1	76.7	20.9
B. Recurrent Costs									
1 Overheads	19.5	11.6	59.5	2.3	11.8	5.6	28.7	0.0	0.0
Subtotal (B)	19.5	11.6	59.5	2.3	11.8	5.6	28.7	0.0	0.0
Total Base Cost	386.0	199.0	51.6	27.4	7.1	82.9	21.5	76.7	19.9
C. Contingencies									
1 Physical	11.1	5.7	51.4	0.8	7.2	2.3	20.7	2.3	20.7
2 Price	32.0	10.0	31.3	1.0	3.1	6.6	20.6	14.4	45.0
Subtotal (C)	43.1	15.7	36.4	1.8	4.2	8.9	20.6	16.7	38.7
D. Financing Charges During Implementation	20.9	11.6	55.5	0.8	3.8	3.3	15.8	5.2	24.9
Total Project Cost (A+B+C+D)	450.0	226.3	50.3	30.0	6.7	95.1	21.1	98.6	21.9

ADB = Asian Development Bank. POWERGRID = Power Grid Corporation of India Limited.

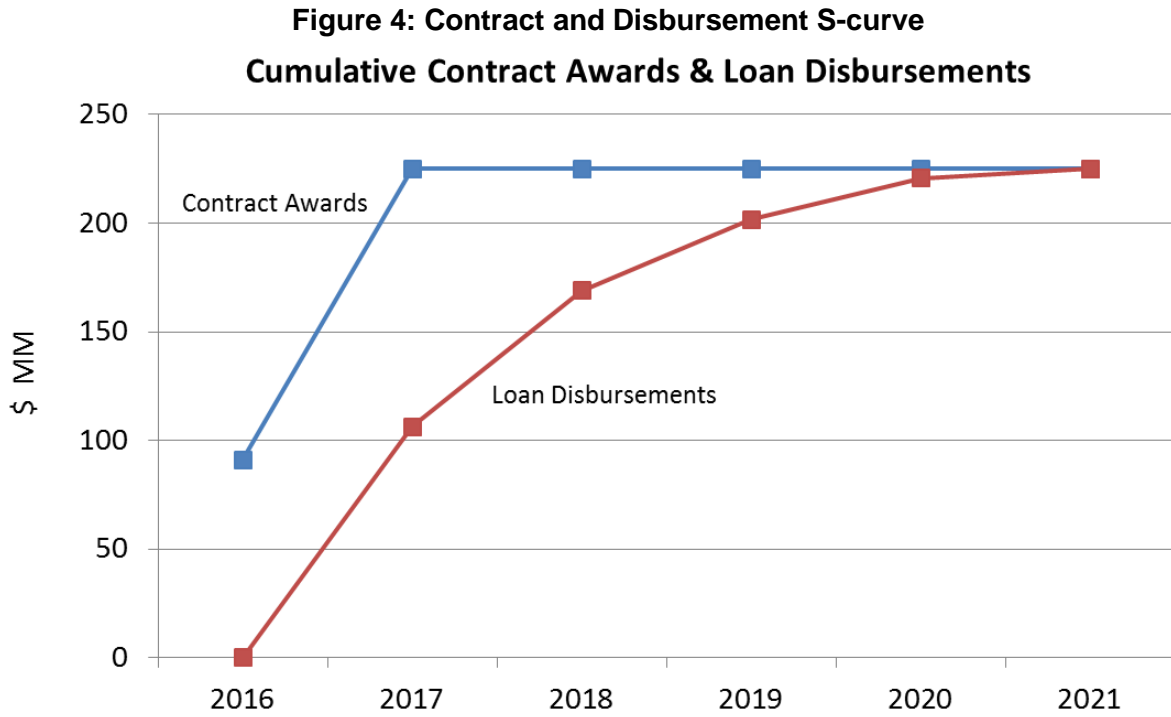
Sources: Power Grid Corporation of India Limited and Asian Development Bank estimates.

G. Detailed Cost Estimates by Year**Table 7: Detailed Cost Estimates by Year**
(\$ million)

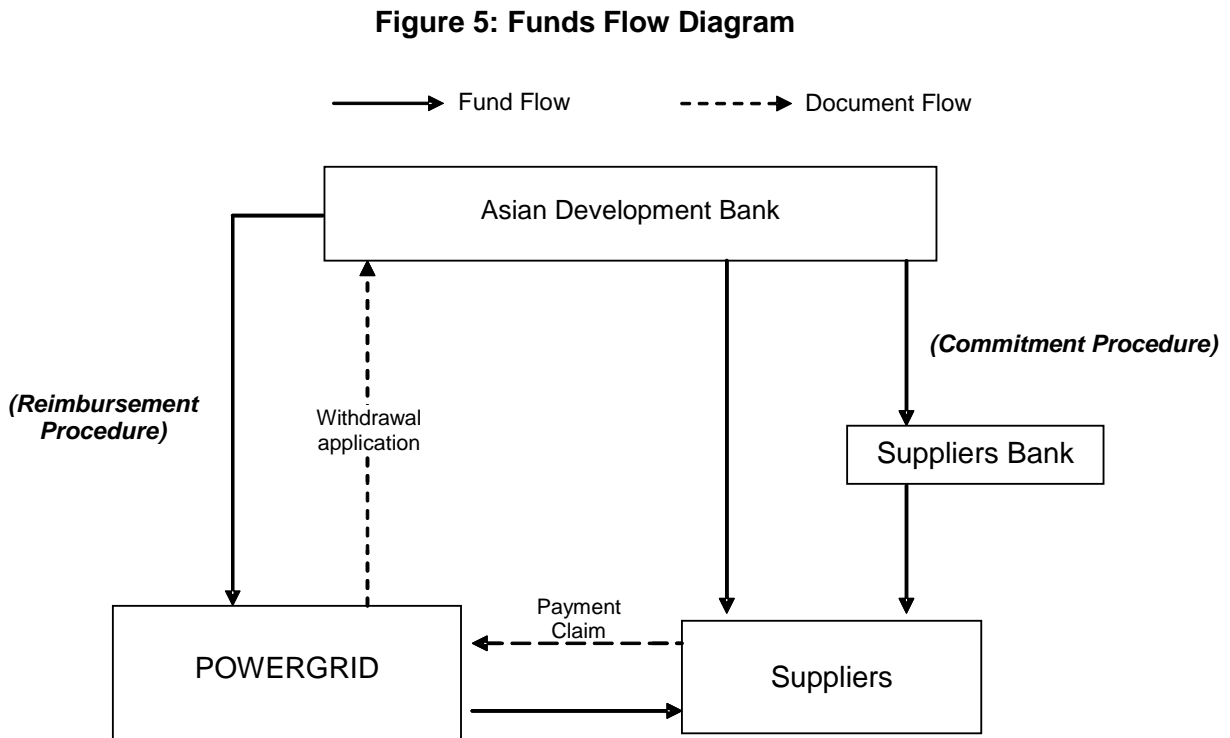
Item	Total Cost	2017	2018	2019	2020	2021
A. Investment costs						
1 Civil Works	5.3	3.5	1.5	0.3	0.0	0.0
2 Equipment	326.8	152.2	89.3	48.9	29.7	6.7
3 Environment and Social Mitigation	34.4	20.1	11.7	2.6	0.0	0.0
Subtotal (A)	366.5	175.8	102.5	51.8	29.7	6.7
B. Recurrent Costs						
1 Overheads	19.5	11.7	6.4	1.4	0.0	0.0
Subtotal (B)	19.5	11.7	6.4	1.4	0.0	0.0
Total Base Cost	386.0	187.5	108.9	53.2	29.7	6.7
C. Contingencies						
1 Physical	11.1	5.3	3.1	1.6	0.9	0.2
2 Price	32.0	10.0	7.8	7.3	5.6	1.3
Subtotal (C)	43.1	15.3	10.9	8.9	6.5	1.5
D. Financing Charges during implementation	20.9	9.6	5.6	3.2	2.0	0.5
Total Project Cost (A+B+C+D)	450.0	212.4	125.4	65.3	38.2	8.7
% Total Project Cost	100.0	47.2	27.9	14.5	8.5	1.9

Sources: Power Grid Corporation of India Limited and Asian Development Bank estimates.

H. Contract and Disbursement S-curve



I. Fund Flow Diagram



V. FINANCIAL MANAGEMENT

A. Financial Management Assessment

10. ADB conducted POWERGRID's financial management assessments. While the financial management structure of POWERGRID was assessed and found to be adequate during the processing of the past ADB loans, it was reconfirmed with POWERGRID regarding their current ability to fulfill ADB's fiduciary requirements under the project. The POWERGRID's financial management risk is considered low.

11. As was previously determined in past loans, the financial accounting system of POWERGRID is advanced, utilizing computerization with confidentiality and integrity at various levels, and well-defined charts of accounts enabling proper recording of financial transactions. Accounting practices and preparation of financial statements are based on the accounting standards notified by the Government of India. Accounting and financial reporting responsibilities are carried out as per the delegation of powers defined and approved by POWERGRID's board of directors. POWERGRID's Finance Department has developed procedures and guidelines for this reporting. As a publicly listed company, POWERGRID is subject to several strong governance measures imposed by the Securities and Exchange Board of India which enhance accountability, transparency, and predictability of its financial governance through disclosure of information to shareholders, investment professionals, and the general public. POWERGRID issued its first foreign currency, offshore bond of US\$500 million in January 2013. POWERGRID maintains an international long-term issue credit rating of BBB- (Outlook: Stable) from both Standard & Poor's and Fitch, and enjoys the highest domestic credit rating of AAA.

12. POWERGRID's structure for a board of directors comprises full-time directors, part-time directors from the Ministry of Power, and independent directors. POWERGRID is audited by the Comptroller and Auditor General of India, in addition to the audit by one or more independent chartered accountant firms appointed by the Comptroller and Auditor General of India. Further, the internal audit department and vigilance departments provide continuing in-house monitoring and oversight of operations. In addition, the board has an audit subcommittee, which meets at least four times a year, and oversees the company's financial management in its entirety.

B. Disbursement

13. The loan proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2015, as amended from time to time),³ and detailed arrangements agreed upon among POWERGRID, the government and ADB. Online training for project staff on disbursement policies and procedures is available.⁴ Project staff are encouraged to avail of this training to help ensure efficient disbursement and fiduciary control.

14. ADB's commitment letter, and reimbursement procedures including statement of expenditures (SOE) procedures will be followed. Regarding SOE procedure, it may be used for reimbursement for eligible expenditures. SOE records should be maintained and made readily available for review by ADB's disbursement and review mission or upon ADB's request for submission of supporting documents on a sampling basis, and for independent audit. Each contract package under the project is expected to be financed and disbursed 100% from the

³ Available at: http://www.adb.org/Documents/Handbooks/Loan_Disbursement/loan-disbursement-final.pdf

⁴ Disbursement eLearning. http://wpqr4.adb.org/disbursement_elearning

loan(s) of ADB and/or CTF as requested by POWERGRID.⁵ POWERGRID will be responsible to maintain contract ledger(s) including payments by fund sources (ADB, CTF, other loans and POWERGRID) and their balances. Each disbursement request under the loan will not be less than \$100,000, or will be equal to the remaining amount of the Loans if the undisbursed balance is less than \$100,000. POWERGRID has sufficient financial management capacity and the control mechanisms in place to properly manage and monitor the funds flow, and has the ability to readily raise the additional debt funds in the domestic market required to complete the project.

Risks	Control Mechanism
Additional local currency debt funding as well as POWERGRID counterpart equity funding are required to complete the project.	POWERGRID routinely raises local currency financing to fund its capital expenditure program. POWERGRID maintains an international long-term issue credit rating of BBB- (Outlook: Stable) from both Standard & Poor's and Fitch, and enjoys the highest domestic credit rating of AAA. Based on the cost-plus nature of the tariff setting process and POWERGRID's superior operating efficiency, it has increased revenues and net profits consistently, maintaining a robust financial position with stable cash flows to cover its costs, capital investment, and debt payments.
This mechanism requires financial management capacity.	POWERGRID has the capacity to properly maintain contract ledger's) including payments by fund sources and their balances. (Please see Financial Management Assessment in Section V. A. above.)

15. Before the submission of the first withdrawal application, POWERGRID should submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the borrower, together with the authenticated specimen signatures of each authorized person. The minimum value per withdrawal application is US\$100,000, unless otherwise approved by ADB. POWERGRID is to consolidate claims to meet this limit for reimbursement and imprest account claims.

C. Accounting

16. POWERGRID will maintain separate books and records by funding source for all expenditures incurred on the project following the government's financial regulations. POWERGRID will prepare consolidated project financial statements in accordance with the government's accounting laws and regulations prevailing in India.

D. Auditing

17. POWERGRID will cause the detailed consolidated project financial statements to be audited in accordance with audit regulations prevailing in India by an auditor acceptable to ADB. The project financial statements will show separate accounts for ADB and CTF loan proceeds. POWERGRID will submit the audited financial statements in the English language to ADB within 1 month after approval of relevant authority. The annual audit report for the project financial statements will include audit opinions which cover (i) whether the project financial statements present a true and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting framework; (ii) whether loan proceeds were used only for the

⁵ 100% is based on each withdrawal application. The use of any loan saving may be considered for change in scope in accordance with the ADB Project Administration Instructions.

purposes of the project or not; and (iii) the level of compliance for each financial covenant contained in the legal agreements for the project. If the auditor issues a management letter, a copy will also be submitted to ADB.

18. POWERGRID will also cause its entity-level financial statements to be audited in accordance with audit regulations prevailing in India, by an independent auditor acceptable to ADB. The audited entity-level financial statements, together with the auditors' report, will be submitted in the English language to ADB within one month after their approval by the competent authority. The government and POWERGRID have been made aware of ADB's policy on delayed submission, and the requirements for satisfactory and acceptable quality of the audited accounts. 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.⁶ 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.

19. Public disclosure of the project financial statements, including the auditor's report on the project financial statements, will be guided by ADB's Public Communications Policy (2011).⁷ After review, ADB will disclose the project financial statements for the project and the opinion of the auditors on the financial statements within 14 days of the date of their receipt by posting them on ADB's website. The entity financial statements and management letter will not be disclosed.

VI. PROCUREMENT AND CONSULTING SERVICES

A. Advance Contracting and Retroactive Financing

20. All advance contracting and retroactive financing will be undertaken in conformity with ADB's *Procurement Guidelines* (2015, as amended from time to time)⁸ and ADB's *Guidelines on the Use of Consultants* (2013, as amended from time to time).⁹ The issuance of invitations to bid under advance contracting and retroactive financing will be subject to ADB approval. POWERGRID has been advised that approval of advance contracting and retroactive financing does not commit ADB to finance the project.

21. **Advance contracting.** In order to expedite project implementation, POWERGRID has requested advance contracting for the procurement of the equipment, goods and works. The

⁶ ADB Policy on delayed submission of audited project financial statements:

- When audited project financial statements are not received by the due date, ADB will write to the executing agency advising that (i) the audit documents are overdue; and (ii) if they are not received within the next six 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.
- When audited project financial statements have not been received within 1 month after approval by relevant authority, 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 (i) inform the executing agency of ADB's actions; and (ii) advise that the loan may be suspended if the audit documents are not received within the next six months.
- When audited project financial statements have not been received within 12 months after the due date, ADB may suspend the loan.

⁷ Available from <http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications>.

⁸ Available at: <http://www.adb.org/Documents/Guidelines/Procurement/Guidelines-Procurement.pdf>.

⁹ Available at: <http://www.adb.org/Documents/Guidelines/Consulting/Guidelines-Consultants.pdf>.

steps to be concluded in advance include preparation of bidding documents, bidding, and bid evaluation for all the eligible contract packages to be agreed between ADB and POWERGRID.

22. **Retroactive financing.** Withdrawals from the loan account may be made for reimbursement of eligible expenditures incurred under the project before the loan effective date, but not earlier than 12 months before the date of signing the loan agreement, subject to a maximum amount equivalent to 20% of the loan amount.

B. Procurement of Goods, Works and Consulting Services

23. POWERGRID will process any procurement packages as per its own procurement systems and the loan agreement once ADB accepts to use POWERGRID's systems. POWERGRID has been undertaking advance procurement action and requested retroactive financing for the project as required. Before the ADB approval to adopt the POWERGRID's systems, the packages will follow the ADB Procurement Guidelines (2015, amended from time to time). The HVDC equipment is proposed to be replaced with a new one from the original supplier, and these contract packages (i.e., three packages of around \$40 million in total) are expected to be procured through direct contracting method (single tender proprietary article certificate) on account of technical compatibility with existing HVDC system.

24. Upon ADB adoption of the POWERGRID's procurement systems, any subsequent procurement packages will follow **Annex 1** (Action Plan for Procurement), and the loan agreement.

25. 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.

C. Procurement Plan

26. The Procurement Plan is provided in **Annex 2**.

D. Consultant's Terms of Reference

27. There are no consulting services in the loans.

VII. SAFEGUARDS

28. **Prohibited investment activities.** Pursuant to ADB's Safeguard Policy Statement (2009) (SPS),¹⁰ ADB funds may not be applied to the activities described on the ADB Prohibited Investment Activities List set forth at Appendix 5 of the SPS.

29. Based on the country safeguards systems (CSS) at the agency level for POWERGRID under SPS, POWERGRID will be responsible for undertaking each subproject in accordance with (i) an Initial Environment Assessment Report (IEAR) analogous to Initial Environmental Examination (IEE); (ii) an Environmental Assessment Management Plan (EAMP)/an Environmental Management Plan (EMP);¹¹ corrective action plan (if applicable); (iii) a Social

¹⁰ Available at: <http://www.adb.org/Documents/Policies/Safeguards/Safeguard-Policy-Statement-June2009.pdf>.

¹¹ EAMP and EMP are understood as being equivalent terms; with EAMP being used in the ESPP and EMP used in the SPS.

Assessment and Management Plan (SAMP) (a Compensation Plan for Temporary Damages (CPTD), and a Rehabilitation Action Plan (RAP), analogous collectively to resettlement plan (RP);¹² and a Tribal People Development Plan (TPDP), analogous to Indigenous Peoples Plan (IPP), if applicable), in accordance with the POWERGRID's Environment and Social Policy & Procedures (ESPP), the agreed action plan for safeguards (**Annex 3**), and the loan agreement.¹³

30. A project management unit (PMU) will be responsible for coordinating and implementing all social and environmental activities. The PMU will coordinate responsible managers in charge at various construction sites for the right of way clearances including environmental, social and safety issues. The construction of transmission lines will not require any permanent land acquisition, however, impact on crop and livelihood sources will be mitigated and/or appropriately compensated. During project implementation, POWERGRID will be responsible for reflecting the occurrence of new and significant impacts resulting from project activities and designing and integrating sound mitigation measures into the IEAR, EAMP, SAMP (CPTD, RAP, and/or TPDP, as applicable). Environmental and social grievances will be handled in accordance to the project grievance redress mechanism. Open and transparent dialogue will be maintained with project affected persons as and when needed, in compliance with ESPP and the agreed action plan for safeguards. Where relevant, POWERGRID will ensure that contractor agreements include sufficient safeguard measures to ensure the continuity of the project's compliance with the IAER, EAMP, SAMP (CPTD, RAP, and/or TPDP, as applicable), including occupational health, safety and applicable labor standards. See Section IX.B for safeguards monitoring.

VIII. GENDER AND SOCIAL DIMENSIONS

31. The loan agreements include a standard assurance related to the compliance with host country labor standards for contractors, including provisions to ensure equal pay for equal work (where women are concerned), and the provision of awareness training on HIV and sexually transmitted diseases and human trafficking (where relevant). Dialogue and communication (both written and verbal) with stakeholders will be carried out in a culturally sensitive manner and in the local language spoken (Hindi) as required. See Section IX.B to describe how the gender and social dimensions will be monitored.

32. Beyond the safeguard provision, POWERGRID has provided local communities with various activities on rural development, skill development, health, education, and environment under corporate social responsibility (CSR).¹⁴ POWERGRID will conduct (i) additional assistance for affected vulnerable households under CSR, and (ii) safety plans and checklists to provide adequate personal protection equipment to employees including women.¹⁵ ADB will provide gender mainstreaming training programs for POWERGRID. ADB will also extend the separate training programs to contractors under the projects. The programs will be implemented with preparation of POWERGRID's and contractor's training manuals, which include (i) gender equality and social inclusion in workplace, (ii) gender features into the project design and CSR

¹² CPTDs will be required for compensation for transmission lines. An RAP will be required whenever a project involves involuntary land acquisition.

¹³ The four subprojects proposed have not identified any land acquisition and IP requirements; RAP and TPTD are unnecessary besides IEAR, EAMP and CPTD.

¹⁴ POWERGRID spent more than \$18 million equivalent for corporate social responsibility activities in 2015–2016.

¹⁵ Vulnerable households include scheduled tribes, scheduled caste, or households headed by women, physically handicapped, disabled families as certified by state governments. POWERGRID has experience in undertaking vulnerable group focused activities such as vocal training to women and supporting self-help group of women through its CSR and the gender focus can be one of the key areas of the CSR program.

program for communities, (iii) sexual harassment prevention and awareness, (iv) equal access for employment opportunities and equal pay for men and women, (v) preventive programs of sexually transmitted infections, (vi) safety equipment and hygiene facilities suitable for women at construction sites, and (vii) institutional gender audit.¹⁶

IX. PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION

A. Project Design and Monitoring Framework

33. The Design and Monitoring Framework of the Project will be included in **Annex 4**.

B. Monitoring

34. **Project performance monitoring.** Overall monitoring of the project in terms of progress and performance will be undertaken in a timely manner by POWERGRID. The PMU headed by the executive director (corporate planning) has been set up at POWERGRID's headquarters. The unit, through the related functional departments of POWERGRID, will be responsible for monitoring the implementation of the project, including outcomes, outputs and activities in relation to the targets and milestones set for the project.

35. POWERGRID has regional offices headed by an executive director or general manager to implement the projects under their respective jurisdictions. The additional general manager or deputy general managers in the region responsible for construction and commissioning of the projects will report to their respective regional heads. The regional heads will facilitate submission of the implementation progress reports. The management of POWERGRID will receive monthly progress reports and review each project in quarterly review meetings. POWERGRID will provide annual power supply transmitted in million/billion units to monitor and report CO₂ saving size to ADB once each subproject commissions in the context of the yearly assessment of progress in implementing the project.

36. POWERGRID will prepare monitoring reports in the format covering all essential aspects of the Project and submits them to ADB at the agreed frequency for each type of report.

37. **Compliance monitoring.** Compliance with covenants in the loan agreement will be monitored through ADB's project administration missions – including project inception mission to discuss and confirm the timetable for compliance with the loan covenants; project review missions to review the borrower's compliance with particular loan covenants and, where there is any noncompliance or delay, discuss proposed remedial measures with the government; and midterm review mission if necessary to review covenants to assess whether they are still relevant or need to be changed, or waived due to changing circumstances.

38. **Safeguards monitoring.** Compliance with environmental requirements, including implementation of the EAMP, the corrective action plan (if applicable), and with social safeguard requirements, including implementation of the SAMP (CPTD, RAP and/or TPDP, as applicable), will be monitored internally by the PMU. POWERGRID will submit the safeguards monitoring report to ADB on semi-annual basis which will be disclosed on the POWERGRID's and ADB's

¹⁶ ADB will support training programs on the gender equality and social inclusion widely for project management staff and contractors. Eventually, CSR activities can be reflected in the gender equality and social inclusion design. The training module can also be integrated in POWERGRID's annual training programs along with overall safeguard training modules.

website. In case of any compliance issues identified during monitoring, a corrective action plan will be developed and implemented to resume compliance.

39. **Procurement monitoring.** Within 30 days after each fiscal year, POWERGRID will submit to ADB all procurement related documents including but not limited to invitations for bids, bid documents issued, and bid evaluation reports of the project for the overall performance and compliance monitoring. ADB will not exercise oversight through the usual post or prior review of such procurement. Instead, ADB will spot-check bid documents, bid evaluations, and contract awards annually (at least) and as part of a midterm audit to verify that the procurement was undertaken in a manner agreed with ADB.¹⁷ In the case of any major deviation (equivalent to misprocurement) from the procurement arrangements agreed with ADB, including those set out in action plan for procurement (**Annex 1**) is identified, ADB may refuse to finance the relevant contract package(s) and will draw POWERGRID's immediate attention for remedial measures to be developed and implemented for compliance.

40. **Gender and social dimensions monitoring.** Compliance will be monitored by the PMU.

C. Evaluation

41. ADB will field regular review missions every six months at the minimum to review status of contract awards, disbursements, physical progress and implementation of IEAR, EAMP, SAMP (CPTD, RAP, and/or TPDP, as applicable). There may be a mid-term review of project implementation in 2019 to determine if any corrective measures need to be taken in consultation with POWERGRID. Within six months of physical completion of the Project, POWERGRID will submit a project completion report to ADB.¹⁸ Subsequently, ADB will field a mission to finalize the project completion report.

Evaluation Methodology

Evaluation Activity	Purpose	Methodology	Who responsible and involved
Review Mission	Review the progress of the project and provide guidance to facilitate implementation	Site visits and meetings with POWERGRID officials, contractors, consultants at least twice a year	ADB/ POWERGRID
Mid Term Review	Comprehensive review of the project	Two years after the loan effectiveness (i.e., not later than 30 June 2019), reviews of performance and compliance, focusing on action plans for procurement and safeguards.	ADB/ POWERGRID
Project completion report	Evaluate the overall output of the project and its relevance and suitability	Site visit and meetings with POWERGRID officials, contractors, consultants to assess overall performance and compliance as per the ADB's requirements for project completion reports.	ADB/ POWERGRID

ADB = Asian Development Bank, POWERGRID = Power Grid Corporation of India.

¹⁷ POWERGRID may voluntarily request ADB prior review in any particular cases due to the complex nature of any issues involved.

¹⁸ Project completion report format is available at: <http://www.adb.org/Consulting/consultants-toolkits/PCR-Public-Sector-Landscape.rar>.

D. Reporting

42. POWERGRID 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 next 12 months; and (iii) a project completion report within six months of physical completion of the Project. To ensure projects continue to be both viable and sustainable, audited project accounts and POWERGRID's financial statements, together with the associated auditor's report, should be adequately reviewed.

43. For subsequent subprojects, POWERGRID will be requested to follow the procedures that include (i) carrying out a technical feasibility study for each subproject; (ii) undertaking financial and economic analyses for each subproject; (ii) conducting an IEAR/EAMP, analogous to IEE; (iii) preparing a SAMP (CPTD, RAP, or TPDP, as applicable).¹⁹ The technical feasibility study will include a detailed engineering design of the subproject, cost estimates, contract packages, and implementation schedule. The financial and economic analyses for each subproject will include each of financial and economic rates of return with their sensitivity tests compared to the weighted average cost of capital, following the same methodologies used for the two advance subprojects identified as project output. The safeguard documents will be in accordance with POWERGRID's ESPP, **Annex 3** (Action Plan for Safeguards), and the loan agreement once ADB accepts to adopt ESPP and the agreed action plan for the sector loan. POWERGRID will submit a set of these appraisal reports to ADB for consideration and approval of each additional subproject prior to the finance. ADB will not be able to consider any subproject that does not satisfy all of the eligibility criteria or where the above procedures have not been followed.

44. The safeguard documents (draft, final, and any updated IEAR/EAMP/SAMP(CPTD, RAP, or TPDP as applicable) will be disclosed on the Borrower's and ADB's websites in accordance with the ADB's Public Communications Policy (2011) and the loan agreement; before the finance for each subproject.

E. Stakeholder Communication Strategy

45. POWERGRID will post all relevant information on its website. The website will include at minimum information regarding the bidding process, bidders, contract awards, use of funds disbursed under the Project and physical progress. The Stakeholder Communications Strategy is described in the following table.

Stakeholder Communication Strategy

Project information to be communicated	Means of Communication	Responsibility	Audience	Frequency
ADB's RRP with linked documents (including safeguards plans)	ADB website	ADB	All stakeholders including the general public	Once
Project information	Discussions and	POWERGRID	Project beneficiaries	Regular

¹⁹ The project is categorized as environment B, resettlement B and indigenous peoples C. No indigenous peoples impacts have been identified.

Project information to be communicated	Means of Communication	Responsibility	Audience	Frequency
while planning/ designing	stakeholder consultations			intervals during planning and design
Draft safeguards documents (e.g., IEAR and CPTD) and any update during implementation	Websites of ADB and POWERGRID	POWERGRID and ADB	All stakeholders including the general public	Once before implementation and as needed, during implementation
Status of implementation during construction	Information boards at site	POWERGRID	Project beneficiaries	All the time at construction sites
Project performance reports and project information documents	ADB website	ADB	All stakeholders including the general public	Quarterly
Safeguards monitoring during implementation (i.e., environmental and social monitoring report)	ADB website	ADB and POWERGRID	All stakeholders including the general public	Semi-annually
Quarterly progress reports	ADB website	POWERGRID	All stakeholders including the general public	Quarterly
Project completion report	ADB website	ADB	All stakeholders including the general public	Once

ADB = Asian Development Bank, CPTD = compensation plan for temporary damages, IEAR = initial environment assessment report, POWERGRID = Power Grid Corporation of India Limited, RRP = Report and Recommendation of the President.

X. ANTICORRUPTION POLICY

46. POWERGRID is advised of ADB's Anticorruption Policy (1998, as amended to date).²⁰ Consistent with its commitment to good governance, accountability and transparency, implementation of the project shall adhere to ADB's Anticorruption Policy.²¹ ADB reserves the right to review and examine, directly or through its agents, any alleged corrupt, fraudulent, collusive, or coercive practices relating to the Project. In this regard, investigation of government officials, if any, would be requested by ADB to be undertaken by the government.

47. To support these efforts, relevant provisions of ADB's Anticorruption Policy are included in the Loan Regulations and the bidding documents. In particular, all contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of POWERGRID, and all contractors, suppliers, consultants, and other service providers as they relate to the Project. Individuals and entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activities and may not be awarded any contract under the Project.²²

48. ADB's Anticorruption Policy designates the Office of Anticorruption and Integrity as the point of contact to report allegations of fraud or corruption among ADB-financed projects or its

²⁰ Available at: <http://www.adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf>.

²¹ Available at: <http://www.adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf>.

²² ADB's Integrity Office web site is available at: <http://www.adb.org/integrity/unit.asp>.

staff.²³ Office of Anticorruption and Integrity is responsible for all matters related to allegations of fraud and corruption. For a more detailed explanation refer to the Anticorruption Policy and Procedures. Anyone coming across evidence of corruption associated with the project may contact the Anticorruption Unit by telephone, facsimile, mail, or email at the following numbers/addresses:

- by email at integrity@adb.org or anticorruption@adb.org
- by phone at +63 2 632 5004
- by fax to +6326362152
- by mail at the following address (**Please mark correspondence Strictly Confidential**):
 Office of Anticorruption and Integrity
 Asian Development Bank
 6 ADB Avenue
 Mandaluyong City 1550
 Metro Manila, Philippines

XI. ACCOUNTABILITY MECHANISM

49. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism.²⁴ 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 a good faith effort 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.²⁵

XII. RECORD OF PAM CHANGES

50. All revisions/updates during course of implementation should be retained in this Section to provide a chronological history of changes to implemented arrangements recorded in the PAM.

²³ ADB's Integrity Office web site is available at: <http://www.adb.org/integrity/unit.asp>.

²⁴ POWERGRID will inform affected people about the Accountability Mechanism.

²⁵ For further information see: <http://www.adb.org/Accountability-Mechanism/default.asp>.

Action Plan for Procurement

1. If the estimated value of a contract package is \$40 million equivalent or less, POWERGRID will follow its own policy and procedures, except the following requirements under the ADB financing bid packages:

- (i) Procurement plan and invitation for bid shall be submitted to ADB for prior approval.
- (ii) The procurement plan shall be updated annually or as needed throughout the duration of the project.
- (iii) All Invitation for Bids (IFB) and bidding documents shall indicate the reference to ADB financing for the project as well as contract.
- (iv) Bid evaluation shall indicate separate taxes and duties and exclude them for comparing the evaluated bid prices of responsive bidders.
- (v) Domestic Preference as admissible under ADB's Procurement Guidelines may be applied in evaluation and comparison of bids.
- (vi) E-Reverse Auction (e-RA) to obtain best and final offer shall not be applied in evaluation and comparison of bids.
- (vii) No additional performance security(ies) beyond 10% of the overall contract amount shall be requested from the bidders.
- (viii) Advance payment shall be provided free of interest.
- (ix) The time period that will be considered prior to the date of bid submission, during which change in any law, regulation, ordinance, order or by-law having the force of law is enacted, promulgated, abrogated, or changed, which shall be deemed to include any change in interpretation or application by the competent authorities, that subsequently affects the costs and expenses of the Contractor and/or the Time for Completion, the Contract Price and/or shall be correspondingly adjusted, shall be 28 days.
- (x) If the parties fail to resolve any dispute or difference by mutual consultation at the execution site level or Project Manager level, disputes shall be referred to a Dispute Board for decision, prior to initiating arbitration proceedings.
- (xi) For foreign bidders, the arbitration proceedings shall be conducted under the Rules of Arbitration of the United Nations Commission on International Trade Law (UNCITRAL) as agreeable to POWERGRID.
- (xii) ADB's Anticorruption Policy and Integrity Principles and Guidelines (both as amended from time to time) shall be applied.

2. In the estimated value of the contract package shall be beyond \$40 million equivalent, POWERGRID will follow the ADB Procurement Guidelines (amended from time to time).

Procurement Plan

Basic Data

Project Name: Solar Power Transmission Sector Project	
Project Number: 49214-002	Approval Number:
Country: India	Executing Agency: Power Grid Corporation of India Limited
Project Procurement Classification: Category B	Implementing Agency: N/A
Project Procurement Risk: Low	
Project Financing Amount: US\$ 450 million ADB Financing: US\$ 175 million Cofinancing (ADB Administered): US\$ 50 million Non-ADB Financing: US\$ 225 million	Project Closing Date: 31 December 2021
Date of First Procurement Plan: 15 Jul 2016	Date of this Procurement Plan: 20 Feb 2017

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

1. Procurement and Consulting Methods and Thresholds

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 Works*	US\$ 40,000,000	
International Competitive Bidding for Goods	US\$ 3,000,000 and Above	

* Includes plants/turnkey contracts.

Consulting Services – Not applicable	
Method	Comments
Quality- and Cost-Based Selection for Consulting Firm	QCBS will be used for consulting services from firms
Individual Consultants Selection for Individual Consultant	Biodata

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

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 (\$ million)	Procurement Method	Review	Bidding Procedure	Advertisement Date (quarter/year)	Comments
TW0102	Transmission Line Tower Package: TW01: 765kV D/C Bhadla - Bikaner (Part-I) TW02: 765kV D/C Bhadla - Bikaner (Part-II)	Lot1:27 Lot2:27	ICB	*	1S2E	Q1 / 2016	Prequalification of Bidders: N Domestic Preference Applicable: Y
SS0102	Substation package: SS01: A) Supply cum erection of 400/220kV Bhadla (New) Substation (400 & 220kV bays) B) Supply cum erection of tower & supply cum installation of 400kV D/C (Quad) Bhadla – Bhadla (RVPN) SS02: Supply cum erection (including 765 kV CB) for 1. Extn. of 765kV Bhadla Substation 2. Extn. of 765kV Bikaner Substation	Lot1:29 Lot2:24	ICB	*	1S2E	Q1 / 2016	Advanced Contracting: Y Bidding Document: Plant
TR01	TR-01-Transformer package : 10X500MVA, 765/400/33kV, 1-Ph Auto Transformer at Bhadla Substation.	16	ICB	*	1S2E	Q1 / 2016	
RT01	RT-01-Reactor Package : (i)7x80MVAR, 765kV line at Bhadla Substation (ii)7x80MVAR, 765kV Bus at Bikaner Substation (iii)4x80 MVAR, 765kV Line Bhadla Substation	13	ICB	*	1S2E	Q1 / 2016	
2TW01	TW01: 400kV D/C (Twin) Banaskantha (Radhanesda) – Bansakantha & Extension of 400kV Banaskantha substation	10	ICB	*	1S2E	Q2 / 2016	
3TW01	TW01: Transmission Line Tower Package for 400kV D/C Hiriyur - Mysore Transmission Line	26	ICB	*	1S2E	Q3 / 2016	
3TW02	TW02: Transmission Line Tower Package for 400kV D/C (Quad) Tumkur Pooling Station - Devanahalli Transmission Line (includes 2 nos. 400kV line bays at each end for termination of line)	24	ICB	*	1S2E	Q4 / 2016	
3SS01	SS (I) -I : i) Extension of 400kV Tumkur Pooling Station including supply of 2x500 MVA, 400/220kV Autotransformer and 1x125 MVAR Bus Reactor	15	ICB	*	1S2E	Q2 / 2016	

Package Number	General Description	Estimated Value (\$ million)	Procurement Method	Review	Bidding Procedure	Advertisement Date (quarter/year)	Comments
	ii) Extension of 400/220kV Mysore Substation including supply of 2x80 MVAR line Reactor						
HVDC01	Control & Protection System Upgrade at Rihand and Dadri HVDC terminals	37	ICB	*	1S2E	Q3 / 2017	
HVDC02	Replacement of Valve Cooling System at Rihand and Dadri HVDC terminals	5	ICB	*	1S2E	Q3 / 2017	
HVDC03	Replacement of Valve Hall Equipment at Rihand and Dadri HVDC terminals	19	Direct Contracting***	**	N/A	Q3 / 2017	
HVDC04	Supply of Bushings for Converter Transformers & Smoothing Reactors at Rihand and Dadri HVDC terminals	8	Direct Contracting***	**	N/A	Q3 / 2017	
HVDC05	Refurbishment/Replacement of Switchyard Equipment at Rihand and Dadri HVDC terminals	10	Direct Contracting***	**	N/A	Q3 / 2017	
CD010203	CD01, CD02, CD03: ACSR ZEBRA Conductor	Lot1:10 Lot2:10 Lot3:10	ICB	*	1S2E	Q2 / 2016	Prequalification of Bidders: N
CIS01	CIS01: Composite Insulator Package	2	ICB	*	1S2E	Q2 / 2016	Domestic Preference Applicable: Y
2CD01	CD01: ACSR MOOSE Conductor	5	ICB	*	1S2E	Q4 / 2016	Bidding Document: Goods

*/ Post review will have been used until the agency procurement system is applied.

**/ Prior review will have been used until the agency procurement system is applied.

***/ Direct contracting method (single tender proprietary article certificate) will be used on account of technical compatibility with existing HVDC system.

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

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

Goods and Works								
Package Number	General Description	Estimated Value	Number of Contracts	Procurement Method	Review (Prior/ Post/Post (Sample))	Bidding Procedure	Advertisement Date (quarter/year)	Comments
None								

B. Indicative List of Packages Required Under the Project

The following table provides an indicative list of goods, works and consulting services contracts over the life of the project, other than those mentioned in previous sections (i.e., those expected beyond the current period).

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

C. List of Awarded and On-going, and Completed Contracts

The following tables list the awarded and on-going contracts, and completed contracts.

1. Awarded and Ongoing Contracts

Goods and Works							
Package Number	General Description	Estimated Value	Awarded Contract Value	Procurement Method	Advertisement Date (quarter/ year)	Date of ADB Approval of Contract Award	Comments
None							

2. Completed Contracts

Goods and Works								
Package Number	General Description	Estimated Value	Contract Value	Procurement Method	Advertisement Date (quarter/ year)	Date of ADB Approval of Contract Award	Date of Completion	Comments
None								

D. Non- ADB Financing

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
None				

Action Plan for Safeguards

1. Based on the Equivalence and Acceptability Assessments, ADB and POWERGRID agreed to implement the following Action Plan for bringing POWERGRID project implementation into full equivalence with SPS policy principles and attaining fully effective implementation of the ESPP and other components of its environmental and social management system.

2. POWERGRID has been updating its ESPP periodically to reflect changes in legal, policy and international best practices. POWERGRID agreed to update the ESPP as needed whenever there are policy and legislative changes related to environment and social safeguards. To ensure equivalence with the SPS, ADB proposes that covenants be included in the loan agreement for all ADB-financed projects to undertake the following equivalence and acceptability actions.

A. Equivalence Actions

3. As described above, ADB and POWERGRID agreed to incorporate the following requirements:

(i) Environment

Action Plan	Project Specific Action Plan
a) Assess potential cumulative impacts of power transmission projects and include in the environmental assessment process, where appropriate.	Environmental assessments for the subprojects appraised show no potential cumulative impacts. While subsequent subprojects are likely to have no potential cumulative impacts, their detailed assessment will be undertaken as well.
b) Provide data for any Government strategic environmental assessments that are relevant to POWERGRID business and operations.	Environmental assessments for the subprojects appraised had no relevance to Government's strategic environmental assessments. While subsequent subprojects are likely to be the same, their assessments will be undertaken as well.
c) Include cost estimates for project-specific environmental management measures into the Environmental Assessment Management Plan (EAMP).	Environmental assessments for the subprojects appraised include cost estimates in their environmental management plans. Cost estimates will be included in subsequent subprojects' EAMPs.
d) Disclose revisions and updates of the Initial Environmental Assessment Report if any, on the POWERGRID website, and provide relevant environmental information to affected people and other stakeholders, in a timely manner and in a form and language understandable to the affected people.	Environmental assessments for the subprojects appraised include disclosure requirements that conform with this specific action. The project's loan agreements stipulate them as well. POWERGRID ensured that the disclosure requirements will be implemented, and that subsequent subprojects will follow the same disclosure requirements.

(ii) Involuntary Resettlement

Action Plan	Project Specific Action Plan
a) Monitor each of the three methods of obtaining land (voluntary donation, negotiated purchase, involuntary acquisition). For negotiated purchase the monitoring is to include an assessment of the transparency of the process, confirmation that the agreed price was paid and confirmation by the seller that they were satisfied with the process. For	Actions with regard to obtaining land are not applicable to the subprojects appraised. The subprojects have been subject to due diligence by ADB, and do not involve involuntary land acquisition. For compensation, the compensation plan for temporary damages (CPTD) for each of the subprojects appraised includes monitoring

Action Plan	Project Specific Action Plan
involuntary acquisition the existing monitoring requirements are maintained.	procedures and requirements. If subsequent subprojects involve land acquisition, monitoring procedures will be included in the safeguard documents (i.e., rehabilitation action plans) based on the agreement between ADB and POWERGRID.
b) Disclose annual monitoring reports for individual projects in a timely manner and in Hindi and English to the affected people.	CPTDs for the subprojects appraised include disclosure requirements for monitoring reports. POWERGRID ensured that the disclosure requirements will be implemented, and that subsequent subprojects will identify and implement disclosure requirements as well.

(iii) **Indigenous Peoples**

Action Plan	Project Specific Action Plan
a) Design (i) socioeconomic benefit and, (ii) capacity development for Indigenous Peoples so that they are culturally appropriate, and gender and intergenerationally inclusive.	Actions with regard to Indigenous Peoples (IPs) are not applicable to the subprojects appraised. The subprojects have been subject to due diligence by ADB, and do not have impacts on IPs. If subsequent subprojects have impacts on IPs, the specific action will be finalized based on agreement between ADB and POWERGRID.
b) Disclose (i) draft and final Tribal People Development Plan; and (ii) monitoring reports in a timely manner and in a form of language understandable to the affected Indigenous Peoples.	Actions with regard to Indigenous Peoples (IPs) are not applicable to the subprojects appraised. The subprojects have been subject to due diligence by ADB, and do not have impacts on IPs. If subsequent subprojects have impacts on IPs, the specific action will be finalized based on agreement between ADB and POWERGRID.
c) Obtain consent from Indigenous Peoples in the case of commercial development of natural resources within tribal lands.	Actions with regard to Indigenous Peoples (IPs) are not applicable to the subprojects appraised. The subprojects have been subject to due diligence by ADB, and do not have impacts on IPs. If subsequent subprojects have impacts on IPs, the specific action will be finalized based on agreement between ADB and POWERGRID.

B. Acceptability Actions

4. ADB and POWERGRID agreed to implement the following practices in all projects supported by ADB under POWERGRID's ESPP in lieu of ADB safeguards.

(i) **Environment**

Action Plan	Project Specific Action Plan
a) Assign environmental specialist(s) (staff or consultants) to each project for project implementation and monitoring during construction.	The IEARs of the subprojects appraised ensured that environment specialists from POWERGRID will be assigned during project construction to each project site. POWERGRID also assured that subsequent subprojects will follow the same requirement.
b) Undertake stakeholder consultations with representation of women.	Environmental assessments for the subprojects appraised document stakeholder consultations which emphasize women's representation. POWERGRID ensured that subsequent subprojects will follow the same requirement. To ensure the meaningful and

Action Plan	Project Specific Action Plan
	inclusive consultation, ADB also provided POWERGRID with an external training program (from the International Association of Impact Assessment) in 2017. Also, the capacity enhancement programs will be continued under ADB supported programs (Annex 5).
c) Document disclosure and availability of project information in a timely manner and in a form and languages understandable to affected people.	Environmental assessments for the subprojects appraised include disclosure requirements consistent with this specific action. POWERGRID ensured that subsequent subprojects will follow the same requirement.
d) Document where EAMP requirements were not met and status of associated corrective actions in site visit reports by environmental specialists.	Environmental assessments for the subprojects appraised include procedures for review, monitoring, and corrective actions. The IEARs ensured that environment specialists of POWERGRID will undertake reporting requirements. The assessment of any requirements will be undertaken for subsequent subprojects as well.

(ii) Involuntary Resettlement

Action Plan	Project Specific Action Plan
a) Develop procedures on monitoring livelihood impacts of land acquisition.	While land acquisition is not applicable to the subproject appraised, POWERGRID agreed to develop the annual training module for monitoring livelihood impacts. ADB has provided materials on monitoring livelihood impacts for incorporation in POWERGRID's training, and external training programs (from the International Association of Impact Assessment) to POWERGRID in 2017.
b) Use recording and tracking systems in the Grievance Redress Mechanism.	CPTDs of the subprojects appraised reflect procedures and requirements for grievance redress mechanism with recording and tracking systems. POWERGRID ensured that subsequent subprojects will follow the same requirement.
c) Conduct meaningful consultation ²⁶ with affected people.	CPTDs of the subprojects appraised include procedures and requirements of meaningful consultation. POWERGRID ensured that subsequent subprojects will follow the same requirement. ADB has provided materials on meaningful consultation for incorporation in POWERGRID's training, and external training programs (from the International Association of Impact Assessment) to POWERGRID in 2017.
d) Disclose monitoring reports, in a timely manner and in Hindi and English to the affected people.	CPTDs of the subprojects appraised include disclosure requirements for monitoring reports.

²⁶ Meaningful consultation is defined as a process that (i) begins early in the project preparation stage and is carried out on an ongoing basis throughout the project cycle; (ii) provides timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people; (iii) is undertaken in an atmosphere free of intimidation or coercion; (iv) is gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and (v) enables the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issues.

Action Plan	Project Specific Action Plan
	POWERGRID ensured that subsequent subprojects will follow the same requirement.

(iii) Indigenous Peoples

Action Plan	Project Specific Action Plan
<p>Provisions for acceptability actions with respect to safeguards of Indigenous Peoples are not applicable at this stage. While ESPP requires that a project affecting Indigenous Peoples prepare and implement a TPDP, there are currently no POWERGRID projects triggering Indigenous Peoples safeguards under implementation that are mature enough to assess.</p>	<p>Actions with regard to IPs are not applicable to the subprojects appraised. The subprojects have been subject to due diligence by ADB, and do not have impacts on IPs. If subsequent subprojects have impacts on IPs, the specific action will be finalized based on agreement between ADB and POWERGRID.</p> <p>For capacity development POWERGRID will develop an IP training module for monitoring and meaningful consultation. For this purpose, the capacity enhancement programs will be provided under ADB supported programs (Annex 5).</p>

DESIGN AND MONITORING FRAMEWORK

Impacts the Project is Aligned with			
Share of clean energy in the power mix increased, overall efficiency of the power system increased, and energy security in India enhanced (Jawaharlal Nehru National Solar Mission ^a and India's Intended Nationally Determined Contribution to the United Nations Framework Convention on Climate Change ^b)			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
<p>Outcome</p> <p>Supply of clean power to the national transmission system expanded</p>	<p>By 2022:</p> <p>a. Grid-connected solar power increased by 4.2 GW through public and private investment (2016 baseline: 7.8 GW)</p> <p>b. An additional 7,060,273 tons equivalent of carbon dioxide emissions avoided per year through solar parks and their transmission systems</p>	<p>a. Ministry of New and Renewable Energy annual report</p> <p>b. POWERGRID monitoring report</p>	<p>Natural hazards cause the failure of the solar parks.</p> <p>Regulatory changes will impair full cost recovery tariff mechanisms.</p>
<p>Outputs</p> <p>1. Capacity of the interstate transmission network improved</p>	<p>By 2021:</p> <p>1a. 201 km of transmission systems (765 kV and 400 kV) constructed to help evacuate 2,500 MW of power from solar parks in Bhadla, Rajasthan (2016 baseline: 0)</p> <p>1b. 95 km of transmission systems (400 kV) constructed to help evacuate 700 MW of power from solar parks in Banaskantha, Gujarat (2016 baseline: 0)</p> <p>1c. 195 km of transmission systems (400 kV) constructed to help evacuate 1,000 MW of power from solar parks in Tumkur, Karnataka (2016 baseline: 0)</p> <p>1d. HVDC terminals (500 kV) between Rihand and Dadri rehabilitated to provide an efficient power supply with a capacity of 1,500 MW</p>	<p>1a–d. POWERGRID project progress report</p>	<p>Rights-of-way issues cause delays.</p> <p>Increases in the bid prices of equipment and materials exceed contingency and inflation forecasts.</p>

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
2. POWERGRID's autonomous management of safeguard and procurement systems improved	<p>2a. POWERGRID's Environment and Social Policy and Procedures adopted by ADB, and additional actions implemented by POWERGRID from 2016 onward</p> <p>2b. POWERGRID's Works and Procurement Policy and Procedures adopted by ADB, and additional actions implemented by POWERGRID from 2017 onward</p>	2a–b. POWERGRID project progress report	
<p>Key Activities with Milestones</p> <p>1. Capacity of the interstate transmission network improved</p> <p>1.1 Install 765 kV and 400 kV transmission systems to connect solar parks in Bhadla, Rajasthan</p> <p>1.1.1 Prepare bid documents (Q1–Q2 2016)</p> <p>1.1.2 Award contracts for goods, works, and services (Q3–Q4 2016)</p> <p>1.1.3 Construct assets (Q4 2016–Q1 2019)</p> <p>1.1.4 Make assets operational (Q1 2019)</p> <p>1.2 Install 400 kV transmission systems to connect solar parks in Banaskantha, Gujarat</p> <p>1.2.1 Prepare bid documents (Q2 2016–Q1 2017)</p> <p>1.2.2 Award contracts for goods, works, and services (Q1–Q2 2017)</p> <p>1.2.3 Construct assets (Q2 2017–Q1 2019)</p> <p>1.2.4 Make assets operational (Q1 2019)</p> <p>1.3 Install 400 kV transmission systems to connect solar parks at Tumkur, Karnataka</p> <p>1.3.1 Prepare bid documents (Q3 2016–Q1 2017)</p> <p>1.3.2 Award contracts for goods, works, and services (Q4 2016–Q2 2017)</p> <p>1.3.3 Construct assets (Q2 2017–Q1 2019)</p> <p>1.3.4 Make assets operational (Q1 2019)</p> <p>1.4 Refurbish and/or replace equipment at the Rihand and Dadri HVDC terminals</p> <p>1.4.1 Prepare bid documents (Q1–Q2 2017)</p> <p>1.4.2 Award contracts for goods, works, and services (Q3 2017–Q1 2018)</p> <p>1.4.3 Construct assets (Q2 2018–Q4 2021)</p> <p>1.4.4 Make assets operational (Q1 2022)</p> <p>2. POWERGRID's autonomous management of safeguard and procurement systems improved</p> <p>2.1 Assess POWERGRID's agency procurement and safeguard system (Q3–Q4 2016).</p> <p>2.2 Adopt POWERGRID's agency safeguard system on the basis of ADB approval (Q1 2017).</p> <p>2.3 Adopt POWERGRID's agency procurement system on the basis of ADB approval (Q1 2017).</p> <p>2.4 Provide ADB safeguard training programs for POWERGRID (Q1 2017).^c</p> <p>2.5 Monitor POWERGRID's agency procurement and safeguard system implementation (Q1 2017–Q2 2022).</p>			

Inputs

ADB: \$175 million (regular loan) (ordinary capital resources)

Clean Technology Fund: \$50 million (loan)

POWERGRID: \$135 million (equity from internal sources) and \$90 million (other sources)^d

Assumptions for Partner Financing

Not applicable

ADB = Asian Development Bank, GW = gigawatt, HVDC = high-voltage direct current, km = kilometer, kV = kilovolt, MW = megawatt, POWERGRID = Power Grid Corporation of India Limited.

^a Government of India, Ministry of New and Renewable Energy. 2009. Jawaharlal Nehru National Solar Mission. Targets increased as reported in the 2015 government press release.

^b Government of India, Ministry of Environment and Forests. 2015. *India Intended Nationally Determined Contribution to the United Nations Framework Convention on Climate Change*.

^c The following ongoing technical assistance projects are expected to provide and support safeguard training programs: ADB. 2013. *Technical Assistance for Improving Safeguard Policy Applications in South Asia Developing Member Countries*. Manila; and ADB. 2010. *Technical Assistance for Strengthening and Use of Country Safeguard Systems*. Manila.

^d Expected to be POWERGRID's domestic bond issuance and/or parallel financing from the commercial banking sector and/or other financial institutions.

Source: Asian Development Bank.

Outline Terms of Reference for IP and Gender Consultants

Objective/Scope of Work (Indigenous Peoples)

A detailed training module on likely impact on Indigenous Peoples (IP) shall be prepared by POWERGRID in association with ADB for safeguard due diligence and monitoring. The module shall be used for providing necessary trainings to POWERGRID staff for proper and effective management of IPs.

Detailed Tasks and Expected Outputs to be funded by ADB

The task/activity shall consider following while designing/developing such module:

1. Review environmental and social policy and procedures (ESPP) of POWERGRID and the Action Plan for IP safeguard and assess the POWERGRID existing safeguard manuals and training materials to identify necessary module and training materials to be developed and integrated into the POWERGRID annual training plan/calendar;
2. Develop training module and materials, including (i) country context- cultural- gender-, and inter-generational sensitive IP assessment, (ii) culturally appropriate and gender inclusive meaningful consultation with IP, (iii) planning/designing social and economic benefits for IP and (iv) monitoring implementation of IP Plans, through presentations, short videos etc. on various case studies;
3. Facilitate POWERGRID through the module to organize/conduct culturally appropriate and gender inclusive meaningful consultation and safeguard due diligence for IP and disseminate relevant project information including grievance redress mechanism (GRM).

Objective/Scope of Work (Gender)

To assess requirement of gender issues including its inclusiveness during different stages of project execution; and develop required training module/management strategies/procedures to effectively address the gender issue, which will be implemented during consultation and project execution and shall be integrated as a gender training module into POWERGRID's annual training plan/calendar.

Detailed Tasks and Expected Outputs to be funded by ADB

The task/activity shall consider following while designing/developing such module:

1. Carry out a gender auditing/assessment through surveys and focus group discussions;
2. Develop training module and materials, including (i) gender equality and social inclusion in workplace, (ii) gender features for the project design and CSR program, (iii) sexual harassment prevention and awareness, (iv) equal access for employment opportunities and equal pay for men and women, (v) prevention of sexually transmitted infections, (vi) safety equipment and hygiene facilities suitable for women both for POWERGRID and its contractors, through presentations, short video's etc. on various case studies;
3. Facilitate trainings through the module to POWERGRID staff on important/necessity of gender awareness, how to incorporate gender issues in project and safeguards documents, and organize/conduct gender inclusive meaningful consultation and safeguard due diligence for environment, resettlement and indigenous peoples.