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R111-18  
11 September 2018

## Proposed Loan for Additional Financing South Asia Subregional Economic Cooperation Power System Expansion Project (Nepal)

1. The Report and Recommendation of the President (RRP: NEP 44219-018) on the proposed loan for additional financing to Nepal for the South Asia Subregional Economic Cooperation Power System Expansion Project is circulated herewith.
2. This Report and Recommendation should be read with *Country Operations Business Plan: Nepal, 2019–2021*, which was circulated to the Board on 29 August 2018 (DOC.IN.272-18).
3. In the absence of any request for discussion and in the absence of a sufficient number of abstentions or oppositions (which should be communicated to The Secretary by the close of business on 2 October 2018), the recommendation in paragraph 32 of the paper will be deemed to have been approved, to be so recorded in the minutes of a subsequent meeting of the Board. Any notified abstentions or oppositions will also be recorded in the minutes.

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# Report and Recommendation of the President to the Board of Directors

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Project Number: 44219-018  
Loan Number: 3139-NEP  
September 2018

## Proposed Loan for Additional Financing Nepal: South Asia Subregional Economic Cooperation Power System Expansion Project

Distribution of this document is restricted until it has been approved by the Board of Directors. Following such approval, ADB will disclose the document to the public in accordance with ADB's Public Communications Policy 2011.

Asian Development Bank

## CURRENCY EQUIVALENTS

(as of 22 August 2018)

Currency unit	=	Nepalese rupee/s (NRe/NRs)
NRe1.00	=	\$0.00895
\$1.00	=	NRs111.74660

## ABBREVIATIONS

ADB	–	Asian Development Bank
AEPC	–	Alternative Energy Promotion Centre
EMP	–	environmental management plan
ERC	–	Energy Regulatory Commission
IEE	–	initial environmental examination
NEA	–	Nepal Electricity Authority
PAM	–	project administration manual
PMD	–	project management directorate
RIPP	–	resettlement and indigenous people plan
SASEC	–	South Asia Subregional Economic Cooperation
SCF	–	Strategic Climate Fund

## NOTES

- (i) The fiscal year (FY) of the Government of Nepal and its agencies ends on 15 July. "FY" before a calendar year denotes the year in which the fiscal year ends, e.g., FY2018 ends on 15 July 2018.
- (ii) In this report, "\$" refers to United States dollars.

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## PROJECT AT A GLANCE

1. Basic Data		Project Number: 44219-018	
Project Name	South Asia Subregional Economic Cooperation Power System Expansion Project-Additional Financing	Department /Division	SARD/SAEN
Country Borrower	Nepal Nepal	Executing Agency	Nepal Electricity Authority (NEA)
2. Sector	Subsector(s)	ADB Financing (\$ million)	
✓ Energy	Electricity transmission and distribution		20.00
		Total	20.00
3. Strategic Agenda	Subcomponents	Climate Change Information	
Inclusive economic growth (IEG)	Pillar 2: Access to economic opportunities, including jobs, made more inclusive	CO <sub>2</sub> reduction (tons per annum)	13,100
Environmentally sustainable growth (ESG)	Global and regional transboundary environmental concerns	Climate Change impact on the Project	Medium
Regional integration (RCI)	Natural resources conservation	ADB Financing	
	Pillar 1: Cross-border infrastructure	Mitigation (\$ million)	20.00
4. Drivers of Change	Components	Gender Equity and Mainstreaming	
Governance and capacity development (GCD)	Organizational development	Effective gender mainstreaming (EGM)	✓
5. Poverty and SDG Targeting		Location Impact	
Geographic Targeting	No	Rural	Medium
Household Targeting	No	Urban	Medium
SDG Targeting	Yes		
SDG Goals	SDG7		
6. Risk Categorization:	Low		
7. Safeguard Categorization	Environment: C Involuntary Resettlement: C Indigenous Peoples: C		
8. Financing			
Modality and Sources		Amount (\$ million)	
ADB		20.00	
Sovereign Project (Concessional Loan): Ordinary capital resources		20.00	
Cofinancing		0.00	
None		0.00	
Counterpart		0.00	
None		0.00	
Total		20.00	

## I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed loan to Nepal for the additional financing of the South Asia Subregional Economic Cooperation (SASEC) Power System Expansion Project.<sup>1</sup>
2. The additional financing will cover a shortfall resulting from a change in the financing amount provided by one of the current project's cofinanciers.

## II. THE PROJECT

### A. Rationale

3. The project will assist Nepal's energy sector development by facilitating (i) expansion of domestic power transmission capacity, (ii) power exchange with India, (iii) augmentation and expansion of the distribution networks, and (iv) mini grid-based renewable energy access in rural areas. The project is prioritized as part of the SASEC Program's Power Generation and Transmission Master Plan and Regional Cooperation Business Plan, 2014–2016.<sup>2</sup>

4. The original project (footnote 1) was approved by the Board of the Asian Development Bank (ADB) on 4 July 2014, signed on 11 July 2014, and became effective on 15 January 2015. At the time of approval, total financing for the project was \$371.2 million, consisting of (i) \$180.0 million from ADB's concessional ordinary capital resources (Loan 3139), (ii) \$60.0 million equivalent from the Government of Norway (Grant 0397), (iii) \$11.2 million from ADB's Strategic Climate Fund (SCF) (Grant 0398), and (iv) a loan of \$120.0 million from the European Investment Bank. Loan 3139, Grant 0397, and Grant 0398 are closing on 30 June 2022. The first additional financing—\$20.0 million (Grant 0520) from ADB's SCF—was approved on 29 November 2016, signed on 18 January 2017, and became effective on 19 May 2017. Grant 0520 is also closing on 30 June 2022. The Nepal Electricity Authority (NEA) is the executing agency for outputs 1, 2 and 5 and Alternative Energy Promotion Centre (AEPC) is the executing agency for output 3 and both are the executing agencies for output 4 of the project.

5. The project has been performing well and is rated *on track* since its approval. Of the net current loan and grants, cumulative contract awards total \$173.56 million (80%) and disbursements \$73.79 million (34%). Under the loan and ADB-administered grant components implemented by NEA, 12 of 13 contract packages have been awarded and the procurement relating to the remaining one contract package (approximately \$6.5 million) is ongoing, and is expected to be awarded within 2018. The components implemented by AEPC are also progressing well and will be completed within the original implementation period. The implementation under all the ongoing contracts are generally satisfactory. The current project is complying with safeguard policy requirements and overall safeguard implementation is rated *satisfactory*.

6. In 2016, Norway decided to reduce its grant contribution from \$60.0 million equivalent to \$22.0 million equivalent following the more critical 2016 refugee crisis in Europe. As a result of this decision, the project now faces a funding gap in the components financed by Norway and implemented by NEA. Based on works undertaken, contracts awarded, revised estimates of

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<sup>1</sup> Asian Development Bank (ADB). Nepal: South Asia Subregional Economic Cooperation Power System Expansion Project. <https://www.adb.org/projects/44219-014/main>

<sup>2</sup> ADB. 2013. *Regional Cooperation Operations Business Plan: South Asia, 2014–2016*. Manila.

contracts still to be awarded, and available allocation from contingencies, NEA estimates the overall funding gap to be approximately \$20 million. The proposed second additional financing will support the transmission of clean energy from hydropower and distribution subprojects that were originally earmarked for cofinancing by Norway, and a prudent contingency allocation to cover possible cost overruns on other subprojects and has been considered as climate change mitigation.

7. The project is accorded high priority by the government, and is consistent with the current country partnership strategy.<sup>3</sup> The government has requested investment support from ADB to cover the shortfall resulting from the change in the financing arrangement with the Government of Norway.<sup>4</sup> The project remains technically feasible, economically viable, and financially sound.

8. The executing and the main implementing agency of the project, NEA has recently undergone significant positive changes in the financial and operational performance which are now evident. A recent (FY2017) tariff increase combined with NEA's efforts to target commercial electricity losses, significantly reduced load-shedding in its distribution area, and a government-backed financial restructuring plan led to the posting of NEA's first net profit in more than 10 years. Another positive development is the enactment of the Electricity Regulatory Commission Bill in 2018, which will lead to the formation of the Electricity Regulatory Commission (ERC), helping to undertake important reform actions such as designing and approval of cost-reflective end-use electricity tariffs.

## **B. Impacts and Outcome**

9. The impacts and outcomes of the overall project will remain unchanged. The impact will be increased electricity access in Nepal and improved power exchange across the border. The project will have the following outcomes: increased capacity of the national power grid and enhanced renewable energy development.<sup>5</sup>

## **C. Outputs**

10. The outputs of the overall project will remain the same as the current project: (i) power transmission capacity increased, (ii) power distribution network improved, (iii) mini grid-based renewable energy systems in off-grid areas increased, (iv) capacity development for NEA and AEPC provided, and (v) a utility-scale solar photovoltaic project developed.<sup>6</sup>

## **D. Investment and Financing Plans**

11. The project is estimated to cost \$466.5 million (Table 1).

<sup>3</sup> ADB. 2013. *Country Partnership Strategy: Nepal, 2013–2017*. Manila.

<sup>4</sup> This lending proposal was not included in ADB. 2017. *Country Operations Business Plan: Nepal, 2018–2020*. Manila. The government requested ADB's financial assistance during the 8–15 May 2016 review mission; the aide memoire was confirmed on 30 August 2016. The government further sent the request for \$20 million additional financing on 22 June 2018. ADB's South Asia Department confirmed that such financial assistance can be accommodated in the 2018 resource envelope by reallocating savings from the Vice-President (Operations 1) pool.

<sup>5</sup> The revised design and monitoring framework is in Appendix 1.

<sup>6</sup> Output (v) was not in the original project, but was added in conjunction with the first additional financing (from ADB's SCF).

**Table 1: Project Investment Plan**  
(\$ million)

Item	Current Amount <sup>a</sup>	Additional Financing <sup>b</sup>	Total
<b>A. Base Cost<sup>c</sup></b>			
1. Power transmission capacity expansion	273.3	2.6	275.9
2. Power distribution network improvement	38.8	16.2	55.0
3. Mini grid-based renewable energy development in off-grid areas	26.4	0.0	26.4
4. Project management and capacity building	8.0	0.0	8.0
5. Utility scale solar photovoltaic project	44.5	0.0	44.5
<b>Subtotal (A)</b>	<b>391.0</b>	<b>18.8</b>	<b>409.8</b>
<b>B. Contingencies<sup>d</sup></b>	<b>28.6</b>	<b>1.1</b>	<b>29.7</b>
<b>C. Financing Charges During Implementation<sup>e</sup></b>	<b>27.0</b>	<b>0.2</b>	<b>27.2</b>
<b>Total (A+B+C)</b>	<b>446.5</b>	<b>20.0</b>	<b>466.5</b>

Note: Numbers may not sum precisely because of rounding.

<sup>a</sup> Refers to the current project amount, including (i) the original financing plus \$20 million in additional financing from the Asian Development Bank Strategic Climate Fund, approved 29 November 2016; less (ii) a \$38 million equivalent reduction in financing from Norway. Includes taxes and duties of \$8.12 million financed from government resources.

<sup>b</sup> Taxes and duties of \$8.12 million to be financed from government resources is already covered under the original project.

<sup>c</sup> In mid-2018 prices.

<sup>d</sup> Physical contingencies computed at 2% of base cost. Price contingency computed using the Asian Development Bank's forecasts of international and domestic inflation; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

<sup>e</sup> Includes interest and commitment charges. Interest during construction for the concessional ordinary capital resources loan has been computed at 1.0% per year with an on-lending margin of 4.0%.

Sources: Nepal Electricity Authority and Asian Development Bank estimates.

12. The government has requested a concessional loan of \$20 million from ADB's ordinary capital resources to help finance the project. The loan will have a 32-year term, including a grace period of 8 years; an interest rate of 1.0% per year during the grace period and 1.5% per year thereafter; and such other terms and conditions set forth in the draft loan and project agreements.

13. The financing plan is in Table 2.

**Table 2: Financing Plan**

Source	Current <sup>a</sup>		Additional Financing		Total	
	Amount (\$ million)	Share of Total (%)	Amount (\$ million)	Share of Total (%)	Amount (\$ million)	Share of Total (%)
Asian Development Bank						
Concessional OCR (loan)	180.00	40.31	20.00	100.00	200.00	42.88
Cofinanciers						
Strategic Climate Fund (grant) <sup>b</sup>	31.20	6.99	0.00	0.00	31.20	6.69
Government of Norway (grant) <sup>c</sup>	22.00	4.93	0.00	0.00	22.00	4.72
European Investment Bank (loan) <sup>d</sup>	120.00	26.87	0.00	0.00	120.00	25.72
Government of Nepal	84.84	19.00	0.00	0.00	84.84	18.19
Communities	8.47	1.90	0.00	0.00	8.47	1.82
<b>Total</b>	<b>446.50</b>	<b>100.00</b>	<b>20.00</b>	<b>100.00</b>	<b>466.50</b>	<b>100.00</b>

OCR = ordinary capital resources.

Notes: Numbers may not sum precisely because of rounding. Percentages may not total 100% because of rounding.

<sup>a</sup> Refers to the original amount plus previous additional financing of \$20 million from the Asian Development Bank (ADB) Strategic Climate Fund, approved 29 November 2016.

<sup>b</sup> Under the Scaling Up Renewable Energy Program in Low-Income Countries, administered by ADB. It also includes \$18.5 million for the viability gap funding (output 5); \$1.5 million for the capacity development of the Nepal Electricity Authority (output 4).

<sup>c</sup> Administered by ADB and reduced in 2016 from the original commitment of \$60.0 million equivalent.

<sup>d</sup> Parallel cofinancing, not administered by ADB.

Sources: Asian Development Bank and Nepal Electricity Authority estimates.



## E. Implementation Arrangements

14. NEA will serve as the executing agency and the existing project management unit for the current project under the project management directorate (PMD) of NEA will implement all activities under this additional financing. The current project managers assigned by NEA project management directorate will continue for this additional financing. The additional financing will be implemented over 4 years from approval with an estimated completion date of 31 December 2021 and closing date of 30 June 2022. All other implementation arrangements will remain the same as for the current project.

15. The implementation arrangements are summarized in Table 3 and described in detail in the project administration manual (PAM).<sup>7</sup>

**Table 3: Implementation Arrangements**

Aspects		Arrangements		
Implementation period		October 2018–December 2021		
Estimated completion date		31 December 2021		
Estimated loan closing date		30 June 2022		
Management				
(i) Oversight body		Steering committee chaired by secretary, Ministry of Energy, Water Resources and Irrigation		
(ii) Executing agency		Nepal Electricity Authority		
(iii) Key implementing agencies		Project Management Directorate, Nepal Electricity Authority		
(iv) Implementation unit		Project Management Directorate, Nepal Electricity Authority		
Procurement		International competitive bidding	14 packages	\$217.0 million
		National competitive bidding	19 packages	\$16.40 million
		Shopping	3 packages	\$0.28 million
Retroactive financing and/or advance contracting		All eligible contract packages and expenditures that ADB and the government agreed upon relating to all outputs		
Disbursement		The loan proceeds will be disbursed in accordance with ADB's <i>Loan Disbursement Handbook</i> (2017, as amended from time to time) and detailed arrangements agreed upon between the government and ADB.		

ADB = Asian Development Bank.

Sources: Asian Development Bank and Nepal Electricity Authority.

## III. DUE DILIGENCE

### A. Technical

16. Technical due diligence undertaken during the processing of the current project remains valid and confirms that the project is still technically feasible. The proposed technologies and design concepts are similar to NEA's existing technologies and practices for transmission system design, construction, and operation, except that NEA had no experience with high-temperature, low-sag conductors. The potential impacts of climate change on electricity transmission and distribution will also be considered. Project supervision consultants are assisting NEA in implementation of the current project.

<sup>7</sup> Project Administration Manual (accessible from the list of linked documents in Appendix 2).

## B. Economic and Financial

17. The financial analysis of the project was updated in accordance with ADB's Financial Management and Analysis of Projects.<sup>8</sup> To reflect the most recently available cost information, all financial costs and benefits were expressed in constant 2018 prices. NEA's weighted average cost of capital was estimated at 1.5% (in pretax real terms). It is anticipated that the ERC (para. 8) will determine the first cost-reflective electricity tariffs for FY 2020 (commencing July 2019.) For the purposes of financial analysis, it was assumed that tariffs would remain at current levels until then and subsequently increase at 2% per year in nominal terms. On this basis, the aggregate project financial internal rate of return is estimated at 1.7%, which is comparable with the overall weighted average cost of capital of 1.5%. The financial internal rate of return is estimated conservatively, in that the ERC is likely to determine tariffs that are higher than used for this analysis. In particular, it is unlikely that the average tariff will decline in real terms over the analysis period. However, the tariff-setting philosophy and methodology that the ERC will adopt are unknown at present.

18. NEA posted a net profit of NRs1.5 billion in FY2016—its first profit in more than 10 years (para. 8). This improved outlook is tempered by the fact that the NEA's balance sheet still contains long-term debt that is unlikely to ever be repaid, financing overvalued fixed assets against which a commercial return is unlikely to ever be earned. Further balance sheet restructuring and reconciliation will be required to ensure that the new sector regulator allows costs to be passed to consumers through electricity tariffs.

19. The project has been analyzed for economic viability using a with- and without-project approach in accordance with ADB's Guidelines for the Economic Analysis of Projects.<sup>9</sup> The economic analysis conducted for the current project has been retained for this additional financing mainly because the original scope remains unchanged, with the additional financing being used to fill financing gaps resulting from a change in the cofinancing arrangement. The economic internal rate of return of the project is 22%. Sensitivity analysis shows that the project returns are robust against changes to critical variables with a minimum economic internal rate of return of 16%.

## C. Governance

20. The procurement capacity assessments of NEA conducted as part of due diligence for the original project remain valid. NEA has sufficient experience in local and foreign procurement, including ADB standard bidding procedures under domestic projects and external assistance from international development partners.

21. ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with the government and the NEA. The specific policy requirements and supplementary measures are described in the PAM (footnote 7).

22. The pre-mitigation financial management risk is rated *substantial* considering the capacity of the NEA, including funds-flow arrangements, staffing, accounting and financial reporting systems, financial information systems, and internal and external auditing arrangements. These financial management shortcomings are being addressed. The NEA has prepared new manuals for internal audit and accounting and updated its internal control policies (all of which are due for

<sup>8</sup> ADB. 2005. *Financial Management and Analysis of Projects*. Manila.

<sup>9</sup> ADB. 2017. *Guidelines for Economic Analysis of Projects*. Manila.

approval by the NEA's board by July 2018). The accounting manual now largely reflects International Financial Reporting Standards accounting requirements, and the NEA plans to start reporting using International Financial Reporting Standards requirements from FY2020. In anticipation of the introduction of a company-wide enterprise resource planning (ERP) solution being supported through World Bank, the NEA is about to complete converting accounting databases that were formerly maintained in Excel to Oracle databases.

23. The financial management assessment of the NEA conducted in September 2016 for the Nepal Power Transmission and Distribution Efficiency Enhancement Project was updated in 2018.<sup>10</sup> The assessment found the key financial management weaknesses or risks to be (i) the current spreadsheet-based accounting system is inflexible, prone to errors, and inadequate for an entity of the NEA's size and complexity; (ii) inflated assets and liabilities should be written down; (iii) resolution of audit issues is inadequate; (iv) implementation of the ERP-based integrated financial management information system has been delayed; and (v) internal controls are weak. A further concern arises from the government's preference that all future loans will involve direct foreign currency borrowing by the NEA from development partners, with a sovereign guarantee. The NEA also had difficulty in complying with financial covenants under previous loans, in particular the debt service coverage ratio. However, the recent improvements in the NEA's financial results are encouraging. The possible delay in operationalization of the recently established ERC is also a potential risk.

#### **D. Poverty and Social**

24. The assessment of the current project's poverty and social dimensions remains valid. The additional financing project is classified as effective gender mainstreaming, and the current project's Gender Equality and Social Inclusion Action Plan will continue to be implemented. Enhanced electricity access, end-user awareness-raising activities, strengthening of mini-grid renewable energy systems, and promotion of productive energy use will all contribute to reducing women's time poverty. The executing agencies and contractors will ensure that priority and preference are given to local workers, including women and marginalized ethnic groups. Employment practices will adhere to national core labor standards.<sup>11</sup>

#### **E. Safeguards**

25. **Environment (Category C).** The additional financing will be used to cover a funding gap within the existing scale and scope. In this regard, the additional financing is classified as environment category C in accordance with ADB's Safeguard Policy Statement (2009). The current project is category B and all environmental safeguards requirements—such as preparation of initial environmental examination (IEE) and environmental management plans (EMPs) for all transmission line packages under the project—have been complied with, approved by both ADB and the government, and disclosed on the ADB website. No additional scope of work has been added under the additional financing, and therefore the IEE and EMP requirements will continue

<sup>10</sup> ADB. Nepal: Power Transmission and Distribution Efficiency Enhancement Project. <https://www.adb.org/projects/50059-001/main>.

<sup>11</sup> The cost for implementation of the Gender Equality and Social Inclusion Action Plan is estimated at \$1.5 million; activities under the plan led by NEA will be financed under ADB. 2014. *Report and Recommendation of the President to the Board of Directors: Proposed Loan, Technical Assistance Grant, and Administration of Grants to Nepal for the South Asia Subregional Economic Cooperation Power System Expansion Project*. Manila (Grant 0397-NEP), in the amount of \$0.5 million; and activities under the AEPC estimated at \$1.0 million, from available technical assistance resources under the Grant 3098-NEP: South Asia Subregional Economic Cooperation Power System Expansion Project.

to be applicable. The tree clearance plan for the transmission line packages has been approved by the government, and will also be applicable for the additional financing.

26. The IEE and EMPs for all components include mitigation measures, monitoring, and budgetary provisions that are adequate to address the environmental impacts of both the current project and the additional financing. The EMP requirements have been incorporated in the bidding documents. The current project requires implementing the EMP, regularly monitoring safeguard compliance, and timely submission of periodic environmental compliance monitoring reports. These compliance requirements will continue under the additional financing. The NEA and AEPC are supervising EMP implementation, including preparation of semiannual monitoring reports with the support of environment consultant. Public consultation and information disclosure requirements have been met, including consultation with the local stakeholders and the district forest offices. Hence, the current project's safeguards implementation, monitoring, and reporting mechanism will continue, along with the inputs of the environmental safeguard consultant in project management consultancy. The services of NEA's environment and social studies department will also support the project in EMP and occupational health and safety assurance.

27. **Social safeguards (category C for both involuntary resettlement and indigenous peoples).** The social safeguard requirements for the current project are unchanged, as the additional financing involves no additional scope or civil works activity other than planned under the original scope of work. The additional financing will cover the shortfall in the loan amount resulting from a change in the agreed cofinancing arrangement to complete the components in the current project. All activities under the additional financing will be implemented using land already acquired under the ongoing loan. No land acquisition or impacts on indigenous people are envisaged for the additional financing. A combined resettlement and indigenous peoples plan (RIPP) was prepared for the current project covering all project components, and has been approved by ADB and the government. The RIPP is being implemented. The involuntary resettlement category for the current project will remain category A, and the indigenous people category will remain category B while this additional financing project is category C for both involuntary resettlement and indigenous peoples.

28. Social safeguards measures will be achieved in line with the provisions stated in the PAM.<sup>12</sup> Social safeguards plan implementation, monitoring, and reporting; the grievance redress mechanism; and the compliance review procedure established for the current project will remain unchanged and will also be applicable to the additional financing. PMD submits social safeguard monitoring reports to ADB and these are reviewed and disclosed in accordance with ADB's Safeguard Policy Statement. PMD is satisfactorily implementing all safeguards requirements, and social safeguard implementation issues arising during implementation are being addressed effectively. The inputs of the safeguard and social development support consultant in project management consultancy will continue to (i) build capacity of the PMD and relevant stakeholders; (ii) support the PMD in the finalization of the updated RIPP following completion of the remaining transmission line surveys; and (iii) ensure that the RIPP is implemented in accordance with social and environmental safeguard requirements, and monitor safeguard compliance.

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<sup>12</sup> Sections VII (safeguards) and VIII (gender and social) of the Project Administration Manual (accessible from the list of linked documents in Appendix 2).

## F. Risks and Mitigating Measures

29. Major risks and mitigating measures are summarized in Table 4 and described in detail in the risk assessment and risk management plan.<sup>13</sup>

**Table 4: Summary of Risks and Mitigating Measures**

<b>Risks</b>	<b>Mitigation Measures</b>
Non-systematic follow-up to external audit observations in relation to NEA's financial statements	NEA will resolve external audit issues relating to receivables, trade debtors, provisions for loans and advances, interest expenses, and government grant with clear action plan and support from the development partners.
Further deterioration in NEA's financial performance due to unpayable debt and delayed operationalization of the Electricity Regulatory Commission	NEA to prepare plan for further financial restructuring of NEA and submit to the government by January 2019. Development partners to provide ongoing technical support as required to ensure timely and satisfactory formation and operationalization of the new regulatory body.
Exposure to currency risk in relation to loans denominated in foreign currency	NEA to prepare foreign exchange risk management policy once the new Electricity Regulatory Commission's policy regarding NEA's foreign exchange exposure has been made clear.
Weak record keeping, accounting, reporting, and internal controls	NEA will ensure that the enterprise report planning-based Integrated Financial Management Information System is implemented successfully by mid-2020, and will transition to full International Financial Reporting Standards-based financial reporting by fiscal year 2021.
Limited financial management capacity in the implementing agencies	NEA will assign experienced and trained accountants to the project, enhance internal audit functions, and help reduce turnover of deputed accountants and who will work closely with Financial Comptrollers General Office.
Lack of decision-making capacity to review and respond to contractors' claims and variations	A vertically integrated Project Management Directorate is set up within NEA headed by a deputy managing director-level officer and is responsible for preparation, procurement, and construction supervision of all new ADB projects and being strengthened through ADB support.

NEA = Nepal Electricity Authority.  
Source: Asian Development Bank.

## IV. ASSURANCES

30. The government and the NEA have assured ADB that implementation of the project shall conform to all applicable ADB policies including those concerning anticorruption measures, safeguards, gender, procurement, consulting services, and disbursement as described in detail in the PAM and loan documents.

31. The government and the NEA have agreed with ADB on certain covenants for the project, which are set forth in the loan agreement and project agreement.

<sup>13</sup> Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2).

## **V. RECOMMENDATION**

32. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve the loan of \$20,000,000 to Nepal for the additional financing of the South Asia Subregional Economic Cooperation Power System Expansion Project, from ADB's ordinary capital resources, in concessional terms, with an interest charge at the rate of 1.0% per year during the grace period and 1.5% per year thereafter; for a term of 32 years, including a grace period of 8 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan and project agreements presented to the Board.

Takehiko Nakao  
President

5 September 2018

## REVISED DESIGN AND MONITORING FRAMEWORK

<b>Impact the Project is Aligned with</b> <b>Current project</b> Electricity access in Nepal increased and power exchange across the border improved (country partnership strategy, 2013–2017 for Nepal) <sup>a</sup> <b>Overall project</b> Unchanged			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
<b>Outcome</b> <b>Current project</b> Capacity of the national power grid increased and renewable energy development enhanced.	<b>Current project</b> By 2023: a. Power evacuation capacity from Kali Gandaki basin and Marsyangdi basin increased to 1,000 MW by 2023 (2013 baseline: 100 MW)  b. Distribution capacities in identified areas increased to 316 MVA (2013 baseline: 100 MVA)  c. 30,500 additional households supplied by renewable energy in rural communities b (Baseline: 0)  d. Carbon dioxide emissions reduced by 59,380 tons per year (Baseline: 0)	AEPC annual reports, NEA annual reports, and SASEC Energy Working Group meeting minutes	Changes in government commitment in NEA financial and management restructuring
<b>Overall project</b> a-c. unchanged d. changed	<b>Overall project</b> a-c. unchanged d. changed		
<b>Outputs</b> <b>Current project</b> 1. Power transmission capacity increased	<b>Current project</b> By 2021: 1a. 45 km of 400 kV and 191.5 km of 220 kV transmission lines and associated substations constructed and/or augmented along Kali Gandaki corridor and Marsyangdi–Kathmandu route (Baseline: 0)  1b. 125 km of 220 kV transmission lines and associated substations at Marsyangdi corridor; and 24 km of 132 kV transmission lines and associated substations at the Samundratar–Trishuli 3B transmission hub constructed (to be financed by the European Investment Bank's parallel cofinancing) (Baseline:0)	1a. NEA annual reports and SASEC Energy Working Group meeting minutes  1b.–c. NEA annual reports	Government counterpart funds are not mobilized in a timely manner.  For AEPC's component, contributions by communities are not realized on time.

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
<p><b>Overall project</b> Unchanged</p> <p><b>Current project</b> 2. Power distribution network improved</p> <p><b>Overall project</b> Unchanged</p> <p><b>Current project</b> 3. Mini grid-based renewable energy systems in off-grid areas increased</p> <p><b>Overall project</b> Unchanged</p> <p><b>Current project</b> 4. Capacity development support to NEA and AEPC provided</p>	<p>By 2020: 1c. 8 grid service substations with aggregate capacity of 393.8 MVA constructed and/or replaced (baseline: 0)</p> <p><b>Overall project</b> Unchanged</p> <p><b>Current project</b> Identified distribution lines (410 km of 33 kV, 545 km of 11 kV, and 725 km of 400 kV), 216 MVA 33kV/11 kV substations and 20 MVA distribution substations constructed and/or upgraded by 2020 (Baseline:0)</p> <p><b>Overall project</b> Unchanged</p> <p><b>Current project</b> Up to an additional 4.8 MW of mini grid-based renewable energy capacity established by 2020 in selected communities where at least 33% of the households are headed by women or are disadvantaged (Baseline: 0)</p> <p><b>Overall project</b> Unchanged</p> <p><b>Current project</b> 4a. Project management monitoring system developed by 2015 (Baseline: 0)</p> <p>By 2018: 4b. 20 persons trained in gender equality and social inclusion-based community participation and management of energy systems (Baseline: 0)</p> <p>4c. A feasibility study of one large-scale wind farm approved by AEPC (Baseline: 0)</p> <p>4d. Draft regulations for implementing Renewable Energy Promotion Board Act accepted by AEPC (Baseline: 0)</p>	<p>NEA annual reports</p> <p>AEPC annual reports</p> <p>4a.–b. Project quarterly progress report</p> <p>4c.–d. AEPC annual reports</p>	<p>Government support for accelerated solar development is not maintained.</p>



Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
<p><b>Overall project</b> Unchanged</p> <p><b>Current project</b> 5. Utility scale solar photovoltaic projects developed</p> <p><b>Overall project</b> Unchanged</p>	<p>4e. An updated distribution system and rural electrification master plan adopted by NEA by 2019 (Baseline: 0)</p> <p>4f. Solar project sites identified, prepared, and implementation plan developed. (Baseline: 0)</p> <p><b>Overall project</b> 4a.–f. Unchanged</p> <p><b>Current project</b> At least 25 MW solar capacity will be installed and in operation by 2018, producing 32,850 MWh per year of electricity. (Baseline: 0)</p> <p><b>Overall project</b> Unchanged</p>	<p>4e. NEA annual reports, distribution system master plan</p> <p>4f. NEA annual reports</p> <p>NEA annual reports</p>	<p>Project sites cannot be identified in a timely manner.</p>
<p><b>Key Activities with Milestones</b></p> <p><b>1. Power transmission capacity increased</b></p> <p>1.1 Acquire land for substations and tower footings (June 2015) (unchanged).</p> <p>1.2 Construct transmission lines (July 2015–June 2021) (unchanged).</p> <p>1.3 Implement environment management plan (July 2015) (unchanged).</p> <p><b>2. Power distribution network improved</b></p> <p>2.1 Acquire land (if any required) (December 2016) (unchanged).</p> <p>2.2 Extend the identified distribution networks (January 2017–December 2018) (unchanged).</p> <p><b>3. Mini grid-based renewable energy systems in off-grid areas increased</b></p> <p>3.1 Contribute land by communities for sample mini hydroelectric subprojects (September 2015) (unchanged).</p> <p>3.2 Construct sample mini hydro subprojects (December 2015–November 2017) (unchanged).</p> <p>3.3 Construct subsequent mini hydro subprojects (July 2017–June 2020) (unchanged).</p> <p>3.4 Contribute land by communities for sample mini grid solar and solar–wind hybrid subprojects (June 2015) (unchanged).</p> <p>3.5 Install sample mini grid solar and solar–wind hybrid subprojects (January 2016–June 2017) (unchanged).</p> <p>3.6 Install subsequent mini grid solar and solar–wind hybrid subprojects (September 2017–February 2019) (unchanged).</p> <p><b>4. Capacity development support to NEA and AEPC provided</b></p> <p>4.1 Support NEA in supervising the implementation of outputs 1 and 2, through the project supervision consultant (January 2016–December 2021) (unchanged).</p> <p>4.2 Support AEPC in procuring and implementing output 3, through the project implementation consultant and social mobilizers (January 2015–June 2020) (unchanged).</p> <p>4.3 Train NEA, AEPC, and identified stakeholders (May 2015–April 2017) (unchanged).</p> <p>4.4 Accept feasibility study of one large-scale wind farm (minimum 1 MW) by AEPC (December 2017) (unchanged).</p> <p>4.5 Accept draft regulations for implementing Renewable Energy Promotion Board Act by AEPC (June 2018) (unchanged).</p> <p>4.6 Adopt distribution system and rural electrification master plan by NEA (December 2019) (unchanged).</p>			

**Key Activities with Milestones**

4.7 Provide consulting service to NEA to facilitate new utility-scale solar development (January 2017–December 2018) (unchanged).

**5. Utility scale solar photovoltaic projects developed**

5.1 Issue request for proposal documents, power purchase agreement awards (January 2017–April 2018) (unchanged).

5.2 Commission the project (December 2017–December 2018) (unchanged).

5.3 Monitor, report, and verify outputs (December 2017–June 2022) (unchanged).

**Inputs**

<b>Asian Development Bank</b>	
<b>Loan</b>	<b>Technical Assistance Grant</b>
\$180,000,000 (current)	\$500,000 (current)
\$20,000,000 (additional)	\$0 (additional)
\$200,000,000 (overall)	\$500,000 (overall)

<b>Government</b>	<b>Beneficiaries (Communities)</b>
\$84,840,000 (current)	\$8,460,000 (current)
\$0 (additional)	\$0 (additional)
\$84,840,000 (overall)	\$8,460,000 (overall)

<b>European Investment Bank</b>	<b>Strategic Climate Fund</b>	<b>Government of Norway</b>
<b>Loan</b>	<b>Grant</b>	<b>Grant</b>
\$120,000,000 (current)	\$31,200,000 (current)	\$22,000,000 (current)
\$0 (additional)	\$0 (additional)	\$0 (additional)
\$120,000,000 (overall)	\$31,200,000 (overall)	\$22,000,000 (overall)

**Assumptions for Partner Financing**

EIB will have parallel cofinancing of \$120 million as part of Output 1 (Marsyangdi corridor and Samundratar-Trishuli 3B transmission lines)

AEPC = Alternative Energy Promotion Centre, km = kilometer, kV = kilovolt, MVA = megavolt-ampere, MW = megawatt, MWh = megawatt-hour, NEA = Nepal Electricity Authority, SASEC = South Asia Subregional Economic Cooperation.

<sup>a</sup> ADB. 2013. *Country Partnership Strategy: Nepal, 2013–2017*. Manila.

Source: Asian Development Bank.

### **LIST OF LINKED DOCUMENTS**

<http://www.adb.org/Documents/RRPs/?id=44219-018-3>

1. Loan Agreement
2. Project Agreement
3. Sector Assessment (Summary): Energy
4. Project Administration Manual
5. Summary of Project Performance
6. Contribution to the ADB Results Framework
7. Development Coordination
8. Financial Analysis
9. Economic Analysis
10. Country Economic Indicators
11. Summary Poverty Reduction and Social Strategy
12. Gender Equality and Social Inclusion: Gender Action Plan
13. Risk Assessment and Risk Management Plan

### **Supplementary Document**

14. Financial Management Assessment