Nepal: Grid Solar and Energy Efficiency (P146344)

SOUTH ASIA | Nepal | Energy and Mining Global Practice |
IBRD/IDA | Investment Project Financing | FY 2015 | Seq No: 1 | ARCHIVED on 30-Apr-2015 | ISR18842 |

Implementing Agencies: Nepal Electricity Authority

Key Dates

Key Project Dates

Board Approval date:22-Dec-2014
Effectiveness Date:--
Planned Mid Term Review Date:30-Jun-2017
Actual Mid-Term Review Date:--
Original Closing Date:31-Dec-2020
Revised Closing Date:31-Dec-2020

Project Development Objectives

Project Development Objective (from Project Appraisal Document)
The project development objectives (PDOs) are to: (i) increase solar photovoltaic generated electricity to supply to the NEA grid; and (ii) reduce NEA's distribution losses in selected distribution centers.

Has the Project Development Objective been changed since Board Approval of the Project Objective?
No

Components

Name
Component 1: Grid-connected Solar PV Farms Development:(Cost $54.00 M)
Component 2: Distribution System Planning Loss Reduction:(Cost $88.00 M)

Overall Ratings

Name	Previous Rating	Current Rating
Progress towards achievement of PDO	--	Satisfactory
Overall Implementation Progress (IP)	--	Moderately Satisfactory
Overall Risk Rating	--	Substantial

Implementation Status and Key Decisions

The project consists of two components: (a) Grid-connected Solar PV Farms Development; and (b) Distribution System Planning and Loss Reduction.
Grid-connected Solar PV Farms Development. This component will support: (a) Design, supply, construction, commissioning, and operation and maintenance of grid connected solar farms to supply electricity directly to NEA's distribution network, (b) Provision of technical advisory services to assist NEA with, *inter alia*, the procurement and supervision of the engineering, procurement, and construction contract for the solar farms, and (c) Provision of capacity building activities to assist NEA with, *inter alia*, independent bid evaluation, Project management, contract execution, and operation and maintenance of the solar farms.
Bid notice for Design Supply and Installation of 25 MW grid connected solar PV is issued on April 13, 2015, with submission date of June 11, 2015 and Expression of Interest for supervision engineer is also called on April 13, 2015.
Distribution System Planning and Loss Reduction. This component will support: (a) preparation of a distribution master plan, (b) preparation of a system loss reduction master plan, (c) carrying out a set of activities in system loss reduction in selected NEA's distribution centers, including: (i) replacing conductors of distribution feeders or building distributions lines to reduce line losses; (ii) adding or replacing distribution transformers to maintain voltage levels and reduce transformer losses; and (iii) adding capacitor banks to compensate reactive power to manage voltage levels, and (d) building the capacity of NEA in distribution system planning and management, including: (i) provision of equipment, software, and training for distribution system loss identification and reduction planning; and (ii) development of a geographic information system database.
TOR for loss reduction master plan is under review by bank team.

Risks

Systematic Operations Risk-rating Tool

Risk Category	Rating at Approval	Previous Rating	Current Rating
Political and Governance	--	--	High
Macroeconomic	--	--	Substantial
Sector Strategies and Policies	--	--	Substantial
Technical Design of Project or Program	--	--	Moderate
Institutional Capacity for Implementation and Sustainability	--	--	High

Fiduciary	--	--	Substantial
Environment and Social	--	--	Low
Stakeholders	--	--	Moderate
Other	--	--	--
Overall	--	--	Substantial

Results

Project Development Objective Indicators

▸ Average annual solar PV generated electricity supplied to the NEA grid (Gigawatt-hour (GWh), Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	--	0.00	31.70
Date	17-Oct-2014	--	--	30-Jun-2020

Comments
The target value of average electricity generation is based on average annual solar irradiance on horizontal plane and performance ratio of 0.8. As there is no site specific data on solar irradiance a reference value of 1650 kWh/m2/year is assumed. The target electricity generation will change if the actual (measured) solar irradiance at site is different to this assumed value. The target electricity generation will be derived using the formula, electricity generation (GWh) = measured average annual measured irradiance (kWh/m2) x 0.8 x 25 MWp. The electricity generation target is reduced annually taking in account the efficiency deterioration of solar panels by 1% per year.

▸ Distribution Loss Reduction in Selected Distribution Centers (Percentage, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	--	0.00	15.00
Date	17-Oct-2014	--	13-Apr-2015	31-Jul-2020

Overall Comments

Intermediate Results Indicators

▸ Distribution lines constructed or rehabilitated under the project (Kilometers, Core)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	--	0.00	100.00
Date	17-Oct-2014	--	13-Apr-2015	31-Jul-2020

◢ Distribution lines constructed under the project (Kilometers, Core Breakdown)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	--	0.00	100.00
Date	17-Oct-2014	--	13-Apr-2015	31-Jul-2020

▸ Generation Capacity of Renewable Energy (other than hydropower) constructed (Megawatt, Core)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	--	0.00	25.00
Date	17-Oct-2014	--	13-Apr-2015	31-Jul-2016

◢ Generation Capacity of Renewable Energy constructed-Solar (Megawatt, Core Breakdown)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	--	0.00	25.00
Date	17-Oct-2014	--	13-Apr-2015	31-Jul-2016

▸ Distribution Master Plan developed (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	--	N	Y
Date	17-Oct-2014	--	13-Apr-2015	31-Jul-2016

▸ Distribution Loss Reduction Master Plan developed (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	--	N	Y
Date	17-Oct-2014	--	13-Apr-2015	31-Jul-2016

Overall Comments

Data on Financial Performance

Disbursements (by loan)

Project	Loan/Credit/TF	Status	Currency	Original	Revised	Cancelled	Disbursed	Undisbursed	Disbursed
P146344	IDA-55660	Not Effective	XDR	88.00	88.00	0.00	0.00	88.00	0%

Key Dates (by loan)

Project	Loan/Credit/TF	Status	Approval Date	Signing Date	Effectiveness Date	Orig. Closing Date	Rev. Closing Date
P146344	IDA-55660	Not Effective	22-Dec-2014	20-Feb-2015	--	31-Dec-2020	31-Dec-2020

Cumulative Disbursements

Restructuring History

There has been no restructuring to date.

Related Project(s)

There are no related projects.