



Regional: Smart Grid Capacity Development

Project Name	Smart Grid Capacity Development		
Project Number	45124-001		
Country / Economy	Regional Bangladesh Bhutan India Maldives Nepal Sri Lanka		
Project Status	Closed		
Project Type / Modality of Assistance	Technical Assistance		
Source of Funding / Amount	TA 7950-REG: Smart Grid Capacity Development		
	Japan Fund for Prosperous and Resilient Asia and the Pacific		US\$ 1.40 million
Strategic Agendas	Environmentally sustainable growth Inclusive economic growth		
Drivers of Change	Governance and capacity development Partnerships Private sector development		
Sector / Subsector	Energy / Energy efficiency and conservation - Renewable energy generation - solar		
Gender	No gender elements		
Description	In facing the challenges of energy security and climate change, some developing member countries (DMCs) have taken the lead in promoting renewable energy. At the same time, expectations are raised for smart grid technology out of concern that unstable output of renewable energy will adversely affect the power systems which the power from renewable energy will be fed into. In this context, during the second meeting of the Asia Solar Energy Forum in Tokyo, Japan, in December 2010, several South Asia DMCs asked the Asian Development Bank (ADB) to provide capacity development technical assistance (TA) for developing the smart grid. The concept paper was approved on 20 May 2011 and further discussed during the Workshop for Solar Energy and Smart Grid in Jodhpur, India, in September 2011.		
Project Rationale and Linkage to Country/Regional Strategy	Promoting the availability and use of clean energy is one of ADB's highest priorities. In 2010, ADB funded nearly \$1.76 billion worth of projects with clean energy components, exceeding its \$1 billion target for the third year in a row. From 2013, ADB will raise the target for clean energy to \$2 billion a year. The Asia and Pacific region, where demand for energy is projected to almost double by 2030, could substantially increase the use of clean power from sustainable solar energy and other renewable sources within the next 3 years. For example, the Government of India launched the Jawaharlal Nehru National Solar Mission in 2010 to (i) create an enabling policy framework for deployment of 20,000 megawatts (MW) of solar power by 2022; and (ii) ramp up the capacity of grid-connected solar power generation to 1,000 MW within 3 years, with an additional 3,000 MW by 2017 through the mandatory use of the renewable purchase obligation by utilities backed with a preferential tariff. Several South Asian DMCs requested TA for applying smart grid technology to their power systems. The smart grid is expected to increase the connectivity, automation, and coordination among suppliers, consumers, and networks that perform either wide-area bulk transmission or local distribution tasks. With the development of a smart grid, the concept of a centralized network shifts toward decentralization of the electricity system, as businesses and homes begin generating more wind and solar electricity, enabling them to sell surplus energy back to their utilities. The modernization of networks is necessary for energy efficiency, real-time management of power flows, and to provide the two-way metering needed to compensate local producers of power. Although transmission networks are already controlled on a real-time basis, most are unable to handle challenges such as those posed by the intermittent nature of alternative electricity generation because of its susceptibility to the weather.		
Impact	Smart grid development for renewable energy development and energy efficiency enhancement to ensure environmentally sound energy supply in South Asia DMCs.		
Project Outcome			
Description of Outcome	Improved greater institutional capacity of South Asian DMCs for smart grid development		
Progress Toward Outcome	Feasibility studies on smart grid development, and knowledge dissemination are currently being undertaken.		
Implementation Progress			
Description of Project Outputs	1. Feasibility studies of the pilot projects for smart grid development conducted. 2. Knowledge management programs formulated.		
Status of Implementation Progress (Outputs, Activities, and Issues)	The technical assistance was closed on 30 June 2018. A consulting firm, to conduct a feasibility study on smart grid development for transmission, distribution, and mini-grid systems implemented the project. Also, individual consultants supported roadmap development and related workshops under the TA.		
Geographical Location	Regional		
Summary of Environmental and Social Aspects			
Environmental Aspects			
Involuntary Resettlement			
Indigenous Peoples			
Stakeholder Communication, Participation, and Consultation			
During Project Design	Consultation with stakeholders - governments and private sector.		

During Project Implementation Continuous consultation with stakeholders to conduct feasibility studies of pilot projects for smart grid development, and knowledge dissemination to achieve the desired outputs.

Business Opportunities

Consulting Services ADB will hire a consulting firm to conduct a feasibility study on smart grid development for transmission, distribution, and mini-grid systems. The consulting work will comprise about 15 person-months of international consulting and 22 person-months of national consulting to provide (i) technical support for identification of the necessary smart grid components for transmission (e.g., a renewable energy operation center), for distribution (e.g., HVDS and smart meter), and for the mini-grid (e.g., an integrated control system for a combination of photovoltaic and conventional thermal power); (ii) capacity development for implementing agencies to formulate technical specifications for smart grid components; and (iii) monitoring of and reporting on TA activities and output. The national consultants will work with the international consultants to provide information on local power systems.

ADB will also hire an individual international consultant as a PPP specialist for 5 person-months and two national consultants as PPP coordinators for 4 person-months each, who will (i) coordinate domestic and foreign private sector and government agencies to assist smart grid development; (ii) coordinate the TA with the partners, e.g., ISGAN and GSEP; and (iii) execute knowledge management programs such as organizing international workshops and supporting publication of the reports of the feasibility study on the pilot projects of the TA.

Two individual international consultants will be hired for 3 person-months each to conduct financial analyses and environmental and social safeguard assessments for pilot projects.

The selection of consultants will be conducted in accordance with ADB's Guidelines on the Use of Consultants (2010, as amended from time to time) and disbursement under the TA will be done in accordance with ADB's Technical Assistance Disbursement Handbook (2010, as amended from time to time). The consulting firm will be chosen using the quality- and cost-based selection method at the standard quality cost ratio of 80:20. All equipment procured under the TA will be turned over to the implementing agencies after TA completion. Advance contracting will be used to expedite the mobilization of the consultants.

Responsible ADB Officer	George, Len V.
Responsible ADB Department	South Asia Department
Responsible ADB Division	Energy Division, SARD
Executing Agencies	Asian Development Bank 6 ADB Avenue, Mandaluyong City 1550, Philippines

Timetable

Concept Clearance	20 May 2011
Fact Finding	-
MRM	-
Approval	07 Dec 2011
Last Review Mission	-
Last PDS Update	25 Sep 2018

TA 7950-REG

Milestones

Approval	Signing Date	Effectivity Date	Closing		
			Original	Revised	Actual
07 Dec 2011	-	07 Dec 2011	31 Dec 2014	30 Jun 2018	24 Oct 2018

Financing Plan/TA Utilization

ADB	Cofinancing	Counterpart				Total	Cumulative Disbursements	
		Gov	Beneficiaries	Project Sponsor	Others		Date	Amount
0.00	1,400,000.00	0.00	0.00	0.00	0.00	1,400,000.00	17 Jun 2022	1,276,174.74

Project Page	https://www.adb.org/projects/45124-001/main
Request for Information	http://www.adb.org/forms/request-information-form?subject=45124-001
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