RISK ASSESSMENT AND RISK MANAGEMENT PLAN

Summary of Risks and Mitigating Measures

Risks	Assessment without Mitigation	Management Plan or Measures	Assessment with Mitigation
Possible uncoordinated development of renewable energy plants and the transmission system	High	A state empowered committee has been established with representatives of the Government of Rajasthan, RRVPNL, RREC, and other stakeholders to ensure that generation projects are developed in coordination with the transmission facility. The Asia Solar Energy Forum and Regional Task Force will facilitate communication among government agencies and private developers. Land allotment applications for over 16,000 MW in western Rajasthan assessed by RRVPNL before the preparation of the investment plan. The investment plan has been reviewed by central government agencies, including the Central Electricity Authority and the Ministry of New and Renewable Energy. ADB's MFF modality would help ensure that the transmission system will be developed in stages and in response to growth in renewable energy generation capacity. If load growth is faster than anticipated, design changes in the investment plan for tranches 2 and 3 can be considered. 220 kV and 132 kV systems are being developed in advance by RRVPNL under the MFF to handle unexpected load growth.	Low
Low capacity utilization in and around Bhadla solar park	Medium	Bidding under the Government of Rajasthan solar policy commenced in the first quarter of 2013. ADB capacity development TA supports the development of the master plan for phase 1 of the Bhadla solar park. Water allocation from a nearby canal, good soil composition and level land, high solar radiation, and proximity to a transmission station will encourage developers to locate at this site.	Low
Low capacity to manage potential grid instability because of large-scale solar and wind generation	High	RRVPNL will implement a roadmap for renewable energy integration with ADB support from 2014. Existing regional TA supports planning studies, the identification of required components, and training. Required investments including for information systems for forecasting will be undertaken under subsequent tranches.	Medium

		Changes in regulatory codes and commercial arrangements are being reviewed by RRVPNL to manage high renewable energy penetration.	
Weak financial position of RRVPNL	High	A financial restructuring plan for RRVPNL has been submitted by RRVPNL to the Government. Loan covenant related to decision and implementation on FRP by 30 September 2014. Assurance is sought on the implementation of the financial restructuring plan. Asset mapping using geographic information systems will address regulatory dis-allowances. Changes in accounting procedures will be supported by the TA.	Medium
Evacuation bottlenecks to purchasers outside the state	Medium	RRVPNL is coordinating with PGCIL, the central transmission utility. PGCIL will strengthen the inter-state transmission system to ensure that power from RRVPNL can be successfully evacuated.	Low
Limited demand for higher-cost renewable energy in India	High	The National Electricity Policy of the Government of India mandates minimum offtake from solar and other renewable energy sources by 2022. Regulatory commissions across most states have set renewable procurement obligations. The trading of solar RECs has commenced while policy measures to strengthen the REC market and reduce risks to financiers are under development. Renewable energy is expected to reach grid parity well before 2020.	Medium
Social issues in the project-affected area and renewable parks in general in Rajasthan	Medium	Baseline social studies were conducted by ADB consultants in and around the area of the Bhadla solar park. Community development framework for Bhadla and other wind and solar parks will be developed by RREC under TA. TA will support studies and pilots to provide clean drinking water in areas affected by high fluoride. TA will support livelihood opportunities for communities in the project-affected area.	Low
Overall	High–Medium		Medium–Low

ADB = Asian Development Bank, kV = kilovolt, MMF = multitranche financing facility, PGCIL = Power Grid Corporation of India Limited, REC = renewable energy certificate, RREC = Rajasthan Renewable Energy Corporation, RRVPNL = Rajasthan Rajya Vidyut Prasaran Nigam Limited, TA = technical assistance.
Source: Asian Development Bank.