

**RISK ASSESSMENT AND RISK MANAGEMENT PLAN**

<b>Risk Description</b>	<b>Rating</b>	<b>Mitigation Measures</b>	<b>Responsibility</b>
<b>Technical</b>			
Lack of technical capacity to ensure quality of civil works and sustainable operation and maintenance of solar park	L	Project implementation consultants will assist EDC in the procurement of the EPC contractor and supervise project implementation and management, including installation and operation of the solar park infrastructure.	EDC, PIC
Delays in construction because of poor weather	L	The EPC contractor's construction plan shall include the possibility of delays caused by weather conditions and prioritize undertaking civil works during the dry season	EDC, PIC
Potential difficulties in managing the grid due to instability resulting from integration of intermittent solar generation	L	<p>Solar integration requirements and mitigation measures are addressed by the solar integration study and solar photovoltaic road map prepared under ADB TA. Changes to the grid code are also proposed in the road map for future integration of high solar penetration scenarios.</p> <p>EDC will benefit from the planned TA activity, Support for a Sustainable Power Sector,<sup>a</sup> and the attached TA grant, Capacity Development in the Electric Utility Industry, to further strengthen its skills in power development planning and grid integration of renewable energy.</p>	EDC, ADB
<b>Economic and Financial</b>			
Insufficient cash generation by EDC to fund its operations due to (i) an increased reliance on high-cost coal-fired electricity generation and high-cost imported electricity, (ii) delays in commissioning lower-cost generating capacity	L	Progress on energy sector reforms, including commissioning low-cost generation (such as hydropower, solar and other renewable energy sources), reducing electricity imports, and expansion of transmission infrastructure.	EDC, MEF, MME
Completion and cost overrun risk because of contractor's inexperience or inability to fulfill contract.	L	<p>Use of EPC contract with fixed prices.</p> <p>EPC contractor financial standing and technical and project management capability requirements</p> <p>Use of ADB standard contract</p> <p>PIC closely supervises contract.</p>	EDC, PIC
<b>Governance (comprising financial management, procurement, anticorruption, capacity, and institutional)</b>			

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EDC has no experience with competitive IPP bidding	S	<p>OPPP, through the TAS agreement, is funding legal and transaction advisors to assist EDC.</p> <p>Capacity building will be provided to EDC staff on procurement and contract management of IPP bids, using MME's previous experience with the Bavet bid as an example.</p> <p>Further, project scheduling will be managed such that the solar park will be completed 7 months in advance of the plant's commissioning.</p>	EDC, ADB
Government approval or land acquisition process is delayed	S	<p>Pre-screening and suitability analysis under the feasibility study</p> <p>EDC has procured 92 ha of the required 100 ha and will procure the remaining land prior to loan disbursement.</p>	EDC, MEF, ADB, TRTA consultants
Procurement delay risk	M	<p>Good-quality tender docs, fair tender process</p> <p>Advanced procurement action</p> <p>Master bidding documents ready</p> <p>Close coordination between EDC, PIC, &amp; ADB on tender pipeline</p> <p>Procurement monitoring</p>	EDC, ADB, PIC
Delayed delivery or unrealized construction of the solar power plant	L	<p>OPPP is providing legal and transaction advisors to assist EDC in structuring the tender and contract for the IPP.</p> <p>Structure of IPP transactions, lender due diligence and the simplicity of solar PV technology minimizes the likelihood of delays in the IPP solar plant.</p> <p>The PPA will include liquidated damages to EDC for company's delay.</p>	EDC, ADB, IPP
Financial management risk from lack of an integrated and automated financial management and reporting system covering all of EDC's operations.	L	EDC has planned for the rollout of an accounting software package to all EDC branches and automation of financial statements by the end of 2019	EDC
Persistent risks despite government and EDC initiatives to curb corruption and strengthened internal controls.	L	<p>Application of prior reviews of tender documents for all contracts</p> <p>Capacity development under the PIC</p> <p>General support by ADB and other development partners for EDC and government anti- corruption measures.</p>	EDC, PIC, ADB
Policy support for solar power is not sustained	L	EDC and government commitment to low-cost renewable energy enshrined in national development policy documents and national GHG reduction targets.	EDC, ADB

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		ADB's planned TA activity, Support for a Sustainable Power Sector, and the attached TA grant, Capacity Development in the Electric Utility Industry, will provide additional support for power development planning for greater integration of renewable energy.	
<b>Safeguards</b>			
Environmental safeguards risk: accelerated implementation schedule may cause EDC to start tender prior to finalizing EMP; incorporation of EMP then becomes subject to negotiations.	L	Environmental safeguard documents are prepared in accordance with ADB's Safeguard Policy Statement (2009). IEIA and EIA will be prepared early. Close communication between EDC, ADB and PIC on timeline of IEIA and/or EIA and tender. EPC has to comply with EMP, even if later issued or modified. Capacity development training under PIC	EDC, PIC
Delays due to not meeting social safeguard conditions	L	Social safeguards documents are prepared in accordance with ADB's Safeguard Policy Statement. Regular monitoring and reporting on progress of social safeguards Capacity development training under PIC	EDC, PIC
Potential flood risk due to climate change	M	A climate risk and vulnerability analysis has been carried out and climate change impacts are not anticipated to be significant over the design life of the park; however, site levelling, drainage provisions and access road design will take account of potential flood risks.	EDC, PIC
<b>Overall</b>	<b>L</b>		

ADB = Asian Development Bank; EDC = Electricite du Cambodge; EIA = environmental impact assessment; EPC = engineering, procurement, and construction; EMP = environmental management plan; GHG = greenhouse gas; ha = hectare; IEIA = initial environmental impact assessment; IPP = independent power producer; MEF = Ministry of Economy and Finance; MME = Ministry of Mines and Energy; O&M = operation and maintenance; OPSP = Office of Public-Private Partnership; PIC = project implementation consultants; PPA = power purchase agreement; TA = technical assistance; TAS = transaction advisory services; TRTA = transaction technical assistance.

Note: H = high, S = substantial, M = moderate, L = low

<sup>a</sup> Under ADB. Regional. [Southeast Asia Energy Sector Development, Investment Planning and Capacity Building Facility](#).

Source: Asian Development Bank.