### BASIC INFORMATION

**A. Basic Project Data**

<table>
<thead>
<tr>
<th>Country</th>
<th>Project ID</th>
<th>Parent Project ID (if any)</th>
<th>Project Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armenia</td>
<td>P155662</td>
<td></td>
<td>Utility-Scale Solar Power Project</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Region</th>
<th>Estimated Appraisal Date</th>
<th>Estimated Board Date</th>
<th>Practice Area (Lead)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECA</td>
<td></td>
<td>July 5, 2018</td>
<td>Energy and Extractives</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Financing Instrument</th>
<th>Borrower(s)</th>
<th>Implementing Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guarantee</td>
<td>Republic of Armenia</td>
<td>Renewable Resources and Energy Efficiency Fund</td>
</tr>
</tbody>
</table>

**Proposed Development Objective(s):** The project development objective is to increase privately owned and operated solar electricity generation capacity in Armenia.

**Financing (in USD Million):**

<table>
<thead>
<tr>
<th>Financing Instrument</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Equity</td>
<td>30.00</td>
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<tr>
<td>Debt Financing</td>
<td>90.00</td>
</tr>
<tr>
<td><strong>Total Project Cost</strong></td>
<td><strong>120.00</strong></td>
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<tr>
<td>IBRD Guarantee</td>
<td>4.00</td>
</tr>
<tr>
<td>SREP Guarantee</td>
<td>26.00</td>
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</tbody>
</table>

**Environmental Assessment Category:** B

**Concept Review Decision:**

- **June 5, 2017**

Have the Safeguards oversight and clearance functions been transferred to the Practice Manager? (Will not be disclosed)

- No

Other Decision (as needed)
B. Introduction and Context

Country Context

1. Armenia’s macroeconomic and fiscal stance deteriorated in 2016-2017. A combination of low commodity prices, declining remittances, weak domestic demand, and increased political uncertainty undermined Armenia’s growth and fiscal position. The economy grew by only 0.2 percent in 2016, which was the country’s worst performance in the past two decades following the deep contraction in 2009. Moreover, the negative impact of this shock on household income reversed the recent trend in poverty reduction. Facing deflation, weak domestic fiscal revenue collection, and protracted external economic shocks, the authorities sought to revive economic activity through a high fiscal deficit and growing the debt.

2. The economy displayed, however, significant dynamism during the first few months of 2017, hinting at an incipient rebound. The country’s Economic Activity Index (EAI) grew by 6.2 percent year-on-year during the first two months of the year, supported by growth in both the tradable and non-tradable sectors. Deflationary pressures slowly subsided, as seasonality for agricultural products pushed up headline consumer prices. The improving tax revenue collection also eased pressures on the fiscal deficit, although existing limits to the pace at which financing for public investment projects is disbursed are posing some challenges. The authorities continue to adhere to a flexible exchange rate policy with limited interventions in the foreign exchange market, while monetary policy has remained broadly accommodative to soften the shock.

3. The economic outlook remains modest considering persistent regional risks and some lingering domestic political uncertainties. The economy is expected to recover modestly over the medium term, including following the recent restatement of the Cabinet in May 2017 (following the elections). However, the political calendar—including the upcoming presidential elections in the spring of 2018—provide a relative narrow window for pushing ahead with the reform agenda for the economic team; hesitance to take advantage of it could delay implementation progress and undermine prospects for consolidating the path of economic recovery and further poverty reduction. The medium-term growth projections remain at around 3 percent per annum. Restoring macroeconomic stability and pursuing fiscal consolidation are key objectives to pursue in the current context of moderate economic growth outlook. Although the financial sector is being buffed up through capital increases, the backlog of non-performing loans (NPLs) pose challenges and risks to the banking sector.

Sectoral and Institutional Context

4. The country has 100 percent electrification rate and all residential, commercial and other consumers have overall reliable 24-hour supply of electricity. The power sector consists of a unified network with all electricity consumers connected to the centralized service. There are no off-grid generators in the country.

5. Armenia’s electricity system has 3,238 MW of installed capacity, and 2,729 MW of available generating capacity. The electricity generation mix includes 40 percent nuclear, 30 percent thermal, and 30 percent hydropower. There are
over 130 privately-owned small renewable plants (below 30MW), which primarily include small hydropower plants (SHPs), supplying electricity to electricity distribution company, Electrical Networks of Armenia (ENA), under standardized contracts, approved by PSRC. There is a PSRC regulation for mandatory 20-year off-take requirement for electricity generated by the small renewable plants at feed-in tariffs (FITs) approved by PSRC.

7. Except for small renewable energy plants, which have feed-in tariffs, the tariffs for all other generation companies are set following the “rate of return” methodology. Under this regime, companies are allowed: (a) to recover eligible costs related to licensed activities such as fuel, operation and maintenance, repairs; (b) asset depreciation expenses; (c) taxes and other fees; and (d) an allowed return on invested capital. The allowed returns for existing power sector companies are in the range of 10-15 percent on pre-tax basis. The tariffs are computed in local currency. The large power generation companies, the transmission company, and the power distribution company file tariff revision requests to PSRC at least once a year.

Relationship to CPF

8. The proposed program is consistent with the findings of Systemic Country Diagnostics conducted for Armenia in 2016 and the next Country Partnership Framework (CPF) for 2018-2022 currently under preparation. The next CPF aims to reduce poverty and increase shared prosperity in the country. The project will contribute to Focus Area 1 of the CPF on improving access to key connective infrastructure (energy, transport and digital) and Focus Area 3 of the CPF on enhancing energy efficiency and sustainability (more efficient energy consumption, investment in renewable energy resources. Power supply adequacy and reliability, energy security and affordability have been identified as the energy sector challenges. The World Bank is committed to support the Government in addressing those challenges by introducing new generation capacity, investing in renewable energy supply and energy efficiency, and improving the electricity tariff structure.

C. Proposed Development Objective(s)

9. The development objective of the proposed program is to increase privately owned and operated solar electricity generation capacity in Armenia. The achievement of the PDO will be assessed using the following key PDO Level Outcome Indicators:

   • Indicator One (Corporate Results Indicator): Generation capacity of energy constructed or rehabilitated (MW).
   • Indicator Two (Custom): Utility-scale solar PV generation added to the grid (GWh).
   • Indicator Three (Corporate Results Indicator): Private capital mobilized (US$).
   • Indicator Four (Custom): Reduction in carbon dioxide emissions (mtCO2 equivalent).

D. Concept Description

10. The proposed program aims to increase privately owned and operated solar electricity generation in Armenia by supporting, through the provision of guarantees, the first renewable energy auction in the country, which aims to attract private sector developers to construct, finance, own and operate in total around 100 MW of greenfield solar capacity in the next 24 months. Two rounds of auctions are planned for up to six solar power plants. The winning bidders will be selected through international competitive bidding processes.

11. The six sub-projects will be publicly tendered in two phases. The first phase consisting of the Masrik-1 sub-project is in an advanced preparation stage. The Government and the Renewable Resources and Energy Efficiency Fund
(R2E2 Fund) officially launched the tendering process for this sub-project with the issuance of the Request for Proposals (RFP) on December 27, 2017. The second phase, which will be informed by the results of the Masrik-1 auction, particularly regarding the tariff level of the winning bid, will consist of up to 5 sub-projects\(^1\). These 5 additional sites have been identified and prepared to the same standard of the Masrik-1 sub-project and are ready for market launch. The team expects that the Government will announce the timing of launch of the second bidding phase before the final submission of the proposed program for approval by the World Bank Board of Directors.

12. Financed by the SREP PPG, feasibility studies, as well as draft Environmental and Social Impact Assessments (ESIA) and a Resettlement Policy Framework (RPF) have been prepared by R2E2 Fund’s consultants for the six solar sites. The PPG has also financed the purchase and installation of four ground-mounted solar measurement stations, including one full year of data collection and analysis and the preparation of an updated solar resource map of Armenia, as well as capacity building activities. All the stations have been recording data since May 2016.

13. Sub-project 1: Masrik-1. The sub-project is estimated to have an installed capacity of 46 MW\(^2\), a capacity factor of 22 percent, and projected average annual generation of 89 million kWh. It is located in the Masrik valley in the Gegharkunik Marz (administrative unit), close to the south-eastern border of lake Sevan. The sub-project will be connected to the distribution network through an 8-10 km 110kV OTL to be linked to the existing Kaputak and Akung distribution lines, which are owned by ENA.

14. This will be the first competitively tendered IPP in the Armenian power sector. The winning bidder is expected to sign, inter alia, a PPA with ENA, a Government Support Agreement (GSA) with the Government of Armenia, and a License Agreement with the PSRC. The PPA will govern the purchase and sale of electricity, while the GSA will primarily define the government support for the transaction.

15. The draft key project agreements (PPA, GSA, License Agreement) and indicative terms and conditions of the IBRD and SREP Guarantee Agreements have been included as part of the RFP package issued on December 27, 2017. Subsequently 10 pre-qualified bidders were invited to participate in field visit and pre-bid conference in the week of January 29, 2018. The pre-bid conference was well attended by eight out of ten pre-qualified bidders as well as Development Finance Institutions (DFIs) and local commercial banks as potential financing partners. At the request of the Government, the World Bank team presented the IBRD/SREP guarantees to the participating bidders and explained in detail the objective, structure and pricing of the proposed support. The deadline of bid submission is scheduled on March 21, 2018. The winning bidder will be selected based on the lowest tariff among bidders meeting minimum technical requirements. The winning bidder is expected to set up a special purpose vehicle as the Project Company to own, operate and finance the sub-project. The draft project agreements prepared for the Masrik-1 sub-project are expected to be replicated for the 5 sub-projects in the second auction phase.

Application of Guarantees

16. The primary objective of the guarantees for the proposed series of sub-projects is to mobilize commercial debt and facilitate competitive tariff submissions. For this purpose, the Government is mainly considering applying the available guarantees in the form of loan guarantees to attract commercial lenders.

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\(^1\) The additional 5 sub-projects are: Dahstadem (10.5 MW), Gagarin (12.8 MW), Masrik-2 (16.3 MW), Merdzavan (4.7 MW), and Talin (10.5 MW)

\(^2\) The RFP for selection of the IPP allows bidders to propose a Project Installed Capacity between 46 MW up to 55 MW.
17. The loan guarantees offered by the IBRD and SREP are being considered to back-stop the Government’s payment obligations under the GSA to pay the termination cost as well as scheduled debt service payments. The commercial lenders under the “covered debt tranche” will be the main beneficiaries of the guarantees and could claim under the guarantees to recover any outstanding principal and interest due and not paid by the Government following an early termination of the GSA.

18. Subject to the requirements of the winning bidder for IPP developer, the IBRD and SREP guarantees can be applied proportionate to the size of its commercial borrowings.

19. The proposed combined IBRD/SREP guarantee of up to USD30 million will be first made available to the first phase of the program (Masrik-1 sub-project). It is estimated that the guarantee can mobilize a debt tranche up to USD20 million with full coverage of debt principal and interest. If the guarantee is not fully utilized by the project developer for the first phase of the project (e.g. due to equity funding and/or DFI financing), the remaining guarantee will be in principle applied to the second phase of the program. The remaining guarantee, depending on the amount available, will be allocated to sub-projects proportionate to their size or be offered based on the specific sub-project requirements.

E. Implementation

20. The R2E2 Fund has been responsible for preparation activities since effectiveness of the SREP-financed Project Preparation Grant in June 2015. R2E2 Fund will also be responsible for the selection, in accordance with the RFP, of the IPP developer(s) that will build, own and operate the sub-projects and for monitoring sub-project implementation during construction. It will also assume the oversight of the compliance of the program activities with the World Bank Performance Standards.

F. Safeguard Policies

21. The proposed program falls under OP4.03, Performance Standards for Private Sector Activities.

<table>
<thead>
<tr>
<th>Performance Standards</th>
<th>Triggered? (Yes/No/TBD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS 1: Assessment and Management of Environmental and Social Risks and Impacts</td>
<td>Yes</td>
</tr>
<tr>
<td>PS 2: Labor and Working Conditions</td>
<td>Yes</td>
</tr>
<tr>
<td>PS 3: Resource Efficiency and Pollution Prevention</td>
<td>Yes</td>
</tr>
<tr>
<td>PS 4: Community Health, Safety, and Security</td>
<td>Yes</td>
</tr>
<tr>
<td>PS 5: Land Acquisition and Involuntary Resettlement</td>
<td>Yes</td>
</tr>
<tr>
<td>PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources</td>
<td>Yes</td>
</tr>
<tr>
<td>PS 7: Indigenous Peoples</td>
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<tr>
<td>PS 8: Cultural Heritage</td>
<td>Yes</td>
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<tr>
<td>Project on International Waterways OP/BP 7.50</td>
<td>No</td>
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Performance Standards | Triggered? (Yes/No/TBD)
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Projects in Disputed Areas OP/BP 7.60 | No

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