

Cover Page for Project/Program Approval Request

1. Country/Region:	Armenia	2. CIF Project ID#:	(Trustee will assign ID)
3. Source of Funding:	<input type="checkbox"/> FIP	<input type="checkbox"/> PPCR	<input checked="" type="checkbox"/> SREP
4. Project/Program Title:	<i>Caucasus Green Economy Financing Facility (GEFF) – SREP Armenia Renewable Energy Grant Support</i>		
5. Type of CIF Investment:	<input type="checkbox"/> Public	<input checked="" type="checkbox"/> Private	<input type="checkbox"/> Mixed
6. Funding Request in million USD equivalent:	Grant: USD3 million		Non-Grant: n/a
7. Implementing MDB(s):	<i>European Bank for Reconstruction and Development (EBRD)</i>		
8. National Implementing Agency:	<i>Private sector</i>		
9. MDB Focal Point and Project/Program Task Team Leader (TTL):	<i>Headquarters- Focal Point: Mr. Andreas Biermann (BiermanA@ebrd.com)</i>		<i>TTL: Mrs. Fani Kallianou de Jong (fani.kallianou@ebrd.com)</i>
10. Project/Program Description (including objectives and expected outcomes):			

This proposal refers to the Component 3 *Development of Distributed Geothermal Heat Pump and Solar-Thermal Projects* of the Armenia SREP Investment Plan (IP) endorsed by the SREP Subcommittee (SC) in April 2014. The programme request is based on the use of SREP funding for all eligible renewable energy technologies that can be financed through the proposed programme. At the same time, the overall investment volume triggered by the USD3 million SREP grant has been increased by over 40%, reflecting the higher leverage that can be achieved by a broader-based programme. This minor change in eligibility has been agreed with the Government of Armenia.

The requested USD3 million SREP grant fund shall be mobilized as additional financing to the Green Economy Financing Facility (GEFF), which will provide about USD 12 million of dedicated financing in Armenia, out of a USD 35 million allocated by the regional facility to Armenia. The finance will be in the form of commercially priced senior unsecured loans to Participating Financial Institutions (PFIs), including banks, microfinance and leasing companies. These loans shall be dedicated to finance private sector sub-borrowers (including buildings) in Armenia for investment in renewable energy heat technologies (RES-H) and services supporting the EBRD’s Green Economy Transition and the objectives of the SREP.

Examples of RE projects to be financed under the Green Economy Financing Facility (GEFF) in Armenia will include the following technologies:

- heat pumps (HPs).
- solar thermal heating (SHWs)
- commercial rooftop or building integrated PV systems. Roof top or building integrated PV systems could support the scaling up of RE in the country;
- biogas – Agribusiness is a key sector in Armenia and there are prospects for biogas projects in the country; SREP grant support could help promoting technology with few show cases since currently biogas has low market penetration.

SREP grant support would be available to all renewable technologies outlined above.

Table 1 below shows the EBRD financing plan and the proposed SREP financing.

Table 1: Proposed Financing Plan

Source	Financing (USD million)
EBRD	12.00
SREP	3.00
Private	2.00
Total	17.00

The new EBRD Green Economy Financing Facility in Armenia also includes grant funding to engage consultants in order to prepare energy and resource audits, review investment proposals, support companies in securing funding from participating financial institutions and implementation support.

The proposed financing project is aligned with 2013-2017 EBRD Country Strategy for Armenia, which emphasizes the importance of higher capital investments among priority sectors including the energy infrastructure as one of the key strategies to achieve economic growth.

11. Consistency with Investment Criteria¹:

Increased RE capacity and increased access to energy via RE:

Armenia’s energy sector has made significant progress in the last two decades. The sector has moved from severe crisis—characterized by crippling supply shortages, and near-financial bankruptcy of the sector—to stability more characteristic of developed countries than emerging markets. The use and development of renewable energy has been an important part of the transition from crisis to stability, and will remain important in the years to come as demand grows and ageing thermal plants are retired. Renewable energy share in the electricity production mix represent 29% and mainly relies on hydro power resources.

Table 2: Indicative breakdown of RES technologies supported and core indicators

Technologies	Investment Amounts	%	Expected annual energy savings/ RE Production	Expected Installed capacity	Expected reduction tonnes CO2/year
Heat pumps	5,950,000	35%	5.8 GWh	7.0 MW	4,000
Solar thermal heating	3,400,000	20%	8.1 GWh	4,600m2	
Rooftop PV	2,550,000	15%	3.5 GWh	2.0 MWp	700
Biogas	5,100,000	30%	12.4 GWh	1.8 MW	2,500
	17,000,000	100%	29.8 GWh	n/a	7,200

Electricity demand grew at an average annual rate of roughly 4% between 2004 and 2013, and is expected to continue to grow (2%/yr). However, barriers to the increased use of renewable sources persist in Armenia which prevents the increased penetration into the market of sustainable technologies such as solar heaters, solar PVs and heat pumps.

In the case of **heat pumps (HPs)** low awareness and lack of suppliers available in Armenia is a major constraint. There are currently no regular suppliers so supporting the suppliers and the end-users could in principal be ready to invest in the promotion of HPs provided the financing conditions are attractive. Looking at **solar thermal heating (SWHs)**, this technology is considered one of the easiest ways to take advantage of the availability of the abundant solar radiation resources in Armenia. However, its widespread utilization is currently hindered due to the high costs and lack of availability of equipment, maintenance, and service infrastructures. Solar water heating is considered an attractive solution with notable potential but would still need attractive financial solutions in order to reach higher levels of implementation. According to local experts, supporting mechanisms such as targeted investment incentive could boost the local market for SWHs and ensure the maturity of the loan is extended to at least 5 years to make economic sense.

For the **commercial rooftop or building integrated PV systems**, there is substantive potential in Armenia which is also in line with the fact that solar energy is a key element of the SREP IP. It is expected that roof top or building integrated PV systems could support the scaling up of RE in Armenia and therefore would be beneficial to be a SREP supported technology under GEF in Armenia. Finally, as agribusiness is a key sector in Armenia there are good prospects for **biogas** projects being realised and scaled-up in the country; SREP support could help promoting technology with few show cases since currently biogas has low market penetration.

Low-emissions development:

The carbon intensity of Armenia is currently 3–4 times greater than the EU–28 average, highlighting the continued dominance of fossil fuels in the energy mix despite some diversification in Armenia from nuclear (20%) and biomass/waste (6%). Inefficiencies in energy use exacerbate the situation with energy intensity of the economies.

Affordability and competitiveness of RE:

Substantial solar thermal and geothermal heat resource potential exists in Armenia, but the use of these technologies is not yet widespread. Absence of long-term and low-cost capital for such projects is cited by Armenian geothermal heating companies as one of the main barriers to the technology's deployment. With the use of the SREP funds as grant progress can be supported.

Productive use of energy:

Armenia has good solar resources, on average about 70% higher than those in Europe. There are 2,500 sunny hours per year on average with average solar radiation 1,720 KWh/m². Geothermal heat pumps do not use country-specific resources, and simply perform as they would elsewhere.

Economic, social, and environmental development impact:

Employment opportunities: The project will create direct and indirect job/employment opportunities. Jobs will be available during construction, operation and maintenance of the small-scale RES-H systems. It is also expected to help build technical skills among locals to operate and maintain the solar power systems. Livelihood and micro enterprise development will create more jobs available at the community

level.

Policy and Regulatory Development: In Armenia, the Bank has engaged consultants to deliver recommendations to the government for specific legal and regulatory changes to the legislation on energy performance of buildings necessary to facilitate private sector investments. The Armenian government has accepted the recommendations for policy and legal reform in the field of energy efficiency in buildings.

The Bank is discussing with the Ministry of Urban Development the scope of support aimed at abolishing the voluntary nature of energy efficiency and introducing mandatory provisions for energy certification of buildings and labelling of household energy consuming equipment (effectively harmonising Armenian legislation with the EU Directives 2010/31/EU and 2010/30/EU). This could be extended to cover solar- and geothermal technologies as well as biomass stoves and boilers.

Economic and financial viability:

The SREP fund will be used to overcome affordability issues in the installation of building integrated RES-H in Armenia. On the supply side, it is expected that the establishment of a scaled-up installation supply to serve the demand stimulated by the SREP grant programme will lead to continued offering of installations following the end of the grant programme. On the demand side, the high visibility of the installations is expected to lead to increased overall demand for these technologies, helping to bring their cost down through economy of scale effects.

Leveraging of other financing:

Private Sector: The SREP USD3 million financing will accelerate development, installation, and operation of at least 3,000 installations of private sector owned renewable heat (RES-H). The project component is expected to leverage private sector equity and commercial debt estimated at around USD2 million.

Green Climate Fund: Caucasus Green Economy Financing Facility (GEFF) is expected to be supported by the Green Climate Fund (GCF) in Armenia through the provision of concessional loans to participating banks under the SEFF Programme Proposal currently under discussion between EBRD and the GCF. A pro-rata allocation of GCF support to count as SREP leverage can be determined following the close of GEFF Armenia.

Bilateral Donors: GEFF Armenia will be supported by bilateral donors, such as the Austrian Government, as well as the EBRD's Shareholder Special Fund, in Armenia through the provision of technical assistance to project implementation to end borrowers and participating banks. A pro-rata allocation of bilateral support to count as SREP leverage can be determined following close of GEFF Armenia.

Co-benefits:

General: The expected positive impacts to poverty, environment and social aspects, will improve the enabling environment and encourage more investments in the energy sector from private sectors thus further increasing SREP fund leverage.

Energy security: The project will help achieve energy security in the country by diversifying energy sources, increasing capacity to meet electricity demand growth, and improving regional power trade.

MRV: The SREP grant programme will provide MRV outcomes to the wider sustainable energy community in Armenia, as well as the government, leading to a better understanding of the impact of investing in RES-H.

Market Analysis: The SREP grant programme will establish a greater understanding of the market and demand for building-integrated RES-E and -H technologies in Armenia.

12. Stakeholder engagement²:

GEFF Armenia shall undergo a full stakeholder assessment in line with EBRD requirements.

13. Gender considerations³:

EBRD is committed to promoting gender equality, as set out in the [EBRD's Strategy for the Promotion of Gender Equality](#). The proposed SREP window under the GEFF will benefit from the comprehensive gender package that will be put in place for the GCF SEFF Programme as a whole.

By putting a strong focus on mainstreaming gender in this Programme, this will ensure alignment with the Gender Policy and the Gender Action Plan of the GCF and the CIFs, which aim to ensure that women and men will equally benefit from loans/investments supported by the funds and build both women and men's resilience to climate change. Mainstreaming gender from the initial assessment and finalisation of the financing schemes will highlight EBRD's added value in this specific sector and domain (financing for energy efficiency and economic infrastructures), where gender equality is poorly addressed in general. This will build on the lessons learned in the CTF-financed gender study in the Turkish market, and the *Woman in Business* lending Programmes.

EBRD will work closely with PFIs in Armenia as well as end beneficiaries to bring gender considerations into their management and operations.

14. Indicators and Targets (consistent with results framework):

Core Indicator	SREP Window
(a) Installed capacity from renewable energy, as a result of SREP interventions	4,600m2 of solar heat capacity 7MW of geothermal capacity 2GWp of solar PV 1.7MW of biogas digesters
(b) Annual heat output from renewable energy as a result of SREP interventions (GWh/yr)	8.1 GWh solar heat 5.8 GWh geothermal (net)
(c) Annual electricity output from from renewable energy as a result of SREP interventions (GWh/yr)	3.5 GWh solar PV 12.4 GWh electricity from biogas
(d) Number of women and men, businesses and community services benefitting from improved access to electricity and fuels, as a result of SREP interventions	About 3,000 households About 5,000 women About 4,000 men About 10 SMEs/MSMEs About 20 businesses in the supply chain

(e) GHG emissions avoided		
i. Annual		i. 7,200 tCO ₂ e
ii. Lifetime (20 years)		ii. 144,000 tCO ₂ e
15. Co-Financing:		
	<i>Amount (in USD million):</i>	<i>Type of contribution:</i>
• Government	n/a	n/a
• EBRD	12	Senior Loan
• Private Sector sub-borrowers	2	Equity and commercial debt
• Bilateral	TBC	Grant
• Others: GCF	TBC	Concessional Loan
GCF	TBC	Grant
Co-Financing Total at launch:	14	
16. Expected Board/MDB Management⁴ approval date:		
Expected EBRD management approval: November 2016		
Expected EBRD board approval: December 2016		

⁴ In some cases activities will not require MDB Board approval.