



TERMS OF REFERENCE

Scaling-up Renewable Energy in Low Income Countries Program (SREP)

Joint Programming Mission

15 – 17 April 2015

Mongolia



CONTEXT OF THE MISSION

The Climate Investment Funds (CIF) was established in 2008 with the goal of promoting international cooperation on climate change issues, and supporting the mitigation and adaptation efforts of low income countries. The Scaling Up Renewable Energy in Low Income Countries Program (SREP) was developed under the CIF umbrella that was approved in 2009 to demonstrate the social, economic, and environmental viability of low carbon development pathways in the energy sector. It seeks to create new economic opportunities and increase energy access through the production and use of renewable energy.

In March 2012, the SREP Subcommittee invited Mongolia to prepare an SREP Investment Plan (IP). The Government confirmed its interest by submitting the Confirmation of Interest Form on 31 October 2013. In July 2014, the SREP subcommittee approved funding allocation of US\$300,000 to support the development of the country's IP. Mongolia is expected to receive up to US\$30 million to support the IP should additional funding become available.

Phase I of the SREP implementation is the pre-investment support for the development of an IP. The Asian Development Bank (ADB), the World Bank (WB), the European Bank for Reconstruction and Development (EBRD), the International Finance Corporation (IFC) and other relevant stakeholders - United Nations Organizations, bilateral partners, private sector companies, non-governmental organizations and civil society organizations – have been supporting the Government of Mongolia (GoM) in developing the SREP IP. The finalization and endorsement of the IP by the SREP Sub-Committee will mark the beginning of Phase II which is the implementation stage. It was agreed that ADB will be the “lead MDB” and would therefore coordinate the joint efforts of the MDBs in the country.

COUNTRY CONTEXT

Mongolia has experienced rapid economic growth (11.5% in 2013) led by mining development.¹ Electricity and heating demand has also been growing in Ulaanbaatar due to rapid urbanization and more economic and commercial activities.² But due to the unavailability of new power and heat plants, this demand is largely unmet and suppressed. As a result, electricity consumption in the central energy system, which covers Ulaanbaatar, other major cities, and mining development areas, grew modestly to 3,542 gigawatt-hours (GWh) in 2012, about 34% more than in 2003.³ It is projected that electricity consumption in the central energy system will increase to 4,422 GWh in 2015 and by 2025 reach 8,189 GWh, more than double the 2012 rate.⁴ The reserve margin of heat and power supply has become close to zero.

Mongolia is rich in renewable energy (RE) sources. It has wind resources equivalent to 1,100 GW of wind electric potential. On solar resources, the country has 270-300 sunny days per year

¹ *The World Bank. 2013. Mongolia Economic Update. Washington, DC.*

² *The population of Ulaanbaatar grew by 32.5% during 2003–2011 (1.2 million in 2011) and is expected to grow by about 26.9% during 2012–2020.*

³ *Major mining activities are supported through captive power plants, which are not part of the central grid.*

⁴ *ADB. 2010. Technical Assistance to Mongolia for Updating the Energy Sector Development Plan. Manila.*

with average sunlight duration of 2,250-3,300 hours. The annual average amount of solar energy is 1,400 kilowatt-hours per square meter (Kwh/m²) per year with solar intensity of 4.3-4.7 kWh/m² per day.

The GoM has taken the following actions to support energy sector development in the country. Legal frameworks include: Energy Law (updated in 2011), Renewable Energy (RE) Law of Mongolia in 2007, which stipulates the attractive feed-in-tariff by different renewable sources and Concession Law in 2010 to promote the private sector participation. It has also approved a number of development programs such as: Program on Integrated Energy System of Mongolia, National Renewable Energy Program (RE capacity target: 20% of total generation capacity by 2020), and Comprehensive Policy on National Development which contains concrete short-term and long-term strategies for the development of the energy sector. From 2000 to 2012 GoM implemented the successful 100,000 Solar Ger Electrification Program, which provided access to modern energy to over half a million nomadic herders through Solar Home Systems. The first grid connected mega-watt scale wind farm (50 MW Salkhit wind farm developed by independent power producer and financed by the European Bank for Reconstruction and Development (EBRD) was put into operation in 2013 and generates about 170 GWh per annum.

Although the GoM has issued the policies for supporting RE development, actual progress has been slow, mainly due to the difficulty of access to long term commercial financing by RE developers, as well as weak institutional and technical capacity of the grid company and regulators. Given the rich renewable sources endowment in Mongolia, there is a huge potential to scale up the renewable based heat and/or power supply sources, which could contribute significantly to meeting the growing energy demand with minimum carbon and pollutants footprint.

The GoM is committed to promoting the development of RE in the country and to that end expressed its interest to be one of the pilot countries under SREP and was included in the reserve list. It also seeks to build on the existing collaboration with multilateral and bilateral development partners, including EBRD, ADB, WB, IFC, etc. These institutions are currently supporting Mongolia in several energy sector development initiatives in the country.

GoM has confirmed its interest to start the preparation of the SREP investment plan. However, with the structural reforms in the government, these series of events have slowed down the process of implementing SREP in the country and has only revived its momentum recently.

PREPARATORY ACTIVITIES

The GoM has already undertaken a number of preparatory activities including:

- a. A Scoping Mission was conducted by the joint MDB team from 28 April to 02 May 2014 to identify the key development partners, undertake stock taking of existing activities and documentation available on a range of analytical, strategic and programming activities related to renewable energy in Mongolia;

- b. Investment plan preparation grant request of \$300,000 submitted and approved by the MDB Committee as of 17 July 2014;
- c. Hiring and mobilizing of consultants who will support Mongolia with SREP Phase 1 activities. The consultants are: Mike Emmerton (Team Leader/RE Specialist), Sakari Oksanen (International RE economist), Bavuudorj Ovgor (Deputy Team Leader/National RE Specialist), and Burmaa Chadraaval (National RE Specialist);
- d. Inception report prepared by the consultants; and
- e. An Inception Workshop was organized on 05 March 2015 to discuss the approach and methodologies for the IP preparation, preliminary findings on opportunities and constraints in renewable energy development, ongoing issues and bottlenecks for sustainable investment in renewable energy development, and necessary policy and regulatory reforms. Representatives from government agencies, private investors and donor agencies participated in the workshop.

JOINT MISSION AGENDA

The main objective of the joint programming mission is to collaborate with GoM in developing the SREP IP for submission to and approval by the SREP sub-committee in the November meeting. During the joint mission, the team will meet with concerned government agencies to:

- (i) discuss key issues that would be critical for the IP preparation, including key policies and regulatory issues for renewable energy development;
- (ii) discuss priorities in renewable energy investment that the government would implement with SREP financing support;
- (iii) provide inputs in formulating project concepts; and
- (iv) agree on next steps for the finalization of the IP.

Expected outputs

The expected outputs of the mission are:

- a. An Aide Memoire describing the process, key findings and recommendations of the Joint Mission, including next steps for finalization of the investment plan and submission to SREP sub-committee.

Table I: Tentative Agenda and Timetable

Date	Morning	Afternoon
April 14 (Tue)	Joint Mission team arrives in Ulaanbaatar, Mongolia	
April 15 (Wed)	Internal MDB team meeting	Meeting with Ministry of Energy (MOE), Energy Regulatory Commission (ERC), and National Renewable Energy Center (NREC)
April 16 (Thu)	Meetings with government agencies	Meetings with government agencies
April 17 (Fri)	Meetings with government agencies	Wrap-up Meeting with MOE
April 18 (Sat)	Departure of Joint Mission Team	

COMPOSITION OF THE MISSION

The Joint Mission will be coordinated by the Government of Mongolia. The government focal point is: Mr. Makhbal Tumenjargal (Specialist for Renewable Energy Policy, Strategic Policy and Planning, Ministry for Energy; m.tumenjargal@energy.gov.mn, m.tumee@ymail.com).

The MDBs' focal points for SREP are:

- ADB: Jiwan Acharya (jacharya@adb.org);
- WB: Gevorg Sargsyan (gsargsyan@worldbank.org);
- IFC: Joyita M. Mukherjee (jmukherjee1@ifc.org);
- EBRD: Andreas Biermann (BiermanA@ebrd.com).

The SREP joint mission team is composed of the following MDB representatives:

MDB	Representative/s
ADB	<p>Mr. Jiwan Acharya Senior Climate Change Specialist, Clean Energy E-mail: jacharya@adb.org Phone: +63 2 632 6207</p> <p>Mr. Shigeru Yamamura Senior Energy Specialist E-mail : syamamura@adb.org Phone : +63 2 632 6501</p>
World Bank	<p>Mr. Peter Johansen Senior Energy Specialist E-mail: pjohansen@worldbank.org Phone: +1 202 458 1919</p>
IFC	<p>Ms. Joyita M. Mukherjee Senior Operations Officer E-mail: jmukherjee1@ifc.org Phone:</p> <p>Mr. Tuyen Nguyen Resident Representative E-mail: Ntuyen@ifc.org Phone: +(976) 7007 8280</p> <p>Mr. Hemant Mandal Senior Energy Specialist E-mail: hmandal@ifc.org Phone: +91 11 4111 1001</p>

MDB	Representative/s
EBRD	<p>Mr. Remon Zakaria Principal Manager, Energy Efficiency and Climate Change E-mail: zakariar@ebrd.com Phone: +90 212 386 1100</p> <p>Mr. Daniel Climent Associate Banker, Power and Energy E-mail: ClimentD@ebrd.com Phone: 0044 207 338 7715</p>

Representatives from other bilateral agencies (e.g. Japan and Germany) may also join the mission.

Annex 2: Criteria for the Sub-Committee to Assess the Investment Plan

- a) **Increased installed capacity from renewable energy sources:** A high priority for most low income countries is expanding their generation capacity in order to ramp up modern energy use and energy access. Therefore, SREP-funded investments should result in increased MW from renewable energy, as well as increased energy (GWh) per capita in the country.
- b) **Increased access to energy through renewable energy sources:** SREP may support grid extensions and decentralized energy systems with a view to expanding the percentage of the population with access to non-fossil-fueled electricity. Investment proposals should demonstrate how the investments are part of the Government's long term commitment to increasing energy access.
- c) **Low Emission Development:** SREP may support the use of renewable energy technologies for electricity generation and services to replace fossil fuel technologies that would be deployed in a business-as-usual scenario aimed at substantially increasing commercial energy use in low income countries. In particular, benefits from SREP investments will often arise from "leap-frogging" technologies, in which low income countries will be assisted to mainstream renewable energy technologies into the overall energy system.
- d) **Affordability and competitiveness of renewable sources:** Affordability is essential for increasing access and for ensuring the long term renewable energy market development. SREP funding should address clearly-defined cost barriers to adoption of renewable energy technologies, such as connection costs for rural consumers, higher capital costs of new technologies, transmission costs related to grid-connected renewables, and risk adjusted rates of return sought by investors.
- e) **Productive use of energy:** SREP programs should promote the generation and productive use of energy.
- f) **Economic, social and environmental development impact:** Investment proposals for SREP financing should demonstrate the generation of economic, social and environmental benefits.
- g) **Economic and financial viability:** Investment proposals should demonstrate the economic viability of investments and the financial viability with the inclusion of time bound SREP resources.
- h) **Leveraging of additional resources:** Activities should maximize the leverage of funds from other partners.
- i) **Gender:** SREP investments should seek to strengthen the capacity of women to be active participants in the economic sector and avoid negative impacts on women.
- j) **Co-benefits of renewable energy scale-up:** SREP investments should include decreased air pollutants from energy production and consumption as well as the potential to reduce stress on forest resources. Investments and activities should elaborate on the potential positive effects on air quality and natural resource management through the adoption of renewable energy technologies.

Annex 3: Suggested Structure for the Investment Plan

I. Proposal Summary (10 pages)

- The Role of Renewable Energy in Mongolia
- SREP's Role in Removing the Barriers to Renewable Energy in Mongolia
- The proposed investment program for Mongolia

II. Country Context (5-6pages)

- Energy sector description (market structure, demand supply, and dispatch composition, electricity cost and pricing) incl. renewable energy status
- Experience of RE developers in Mongolia
- Gap/barrier analysis; needs assessment

III. Renewable Energy Sector Context (10-15 pages)

- Analysis of renewable energy options (technology, cost, mitigation potential, barriers)
- Assessment on the electrical network in the country to identify the areas where additional RE capacity can be installed without compromising the grid stability and functionality.
- Government plans or strategy for the sector (willingness to move towards renewable energy investments, existing or envisioned policy, regulation, plans, and resource allocation)
- Institutional structure and capacity (technical, operational, financial, equipment supply, information)
- Role of private sector and leverage of resources
- Ongoing/planned investment by other development partners

IV. Contribution to National Energy Roadmap (2 pages)

- Likely development impacts and co-benefits of SREP investment
- How SREP investment will initiate a process leading towards transformational low carbon growth

V. Program Description (6-8 pages)

- Description of the proposed investments
- Investment preparation activities
- Parallel activities to be funded by other development partners

VI. Financing Plan and Instruments (3-4 pages)

- Budget envelop for investments
- Costs and sources of funding
- SREP assistance (grant, concessional debt, etc.)
- Recipients of funding

VII. Additional Development Activities (2-3 pages)

- Leverage complementary co-financing with other development partners such as bilaterals, private sector, and financial institutions

VIII. Implementation Potential with Risk Assessment (2 pages)

- Country/regional risks - institutional, technology, environmental, social, financial
- Absorptive capacity for SREP and leveraged resources

IX. Monitoring and Evaluation (1/2 page)

- Results framework table

Annexes

Information should be included in annexes on the following areas:

- assessment of country's absorptive capacity
- stakeholder consultations
- co benefits
- existing activities in the field of renewable energy, particularly activities of other development partners

For each project to be implemented under the Investment Plan, an investment concept brief (maximum two pages) will be prepared as part of the Annex to the Investment Plan.

A suggested outline of an Investment Concept Brief includes:

- Problem statement (1-2 paragraphs)
- Proposed contribution to initiating transformation (1-2 paragraphs)
- Implementation readiness (1-2 paragraphs)
- Rationale for SREP financing (1-2 paragraphs)
- Results indicators
- Financing plan
- Project preparation timetable
- Requests, if any, for investment preparation funding