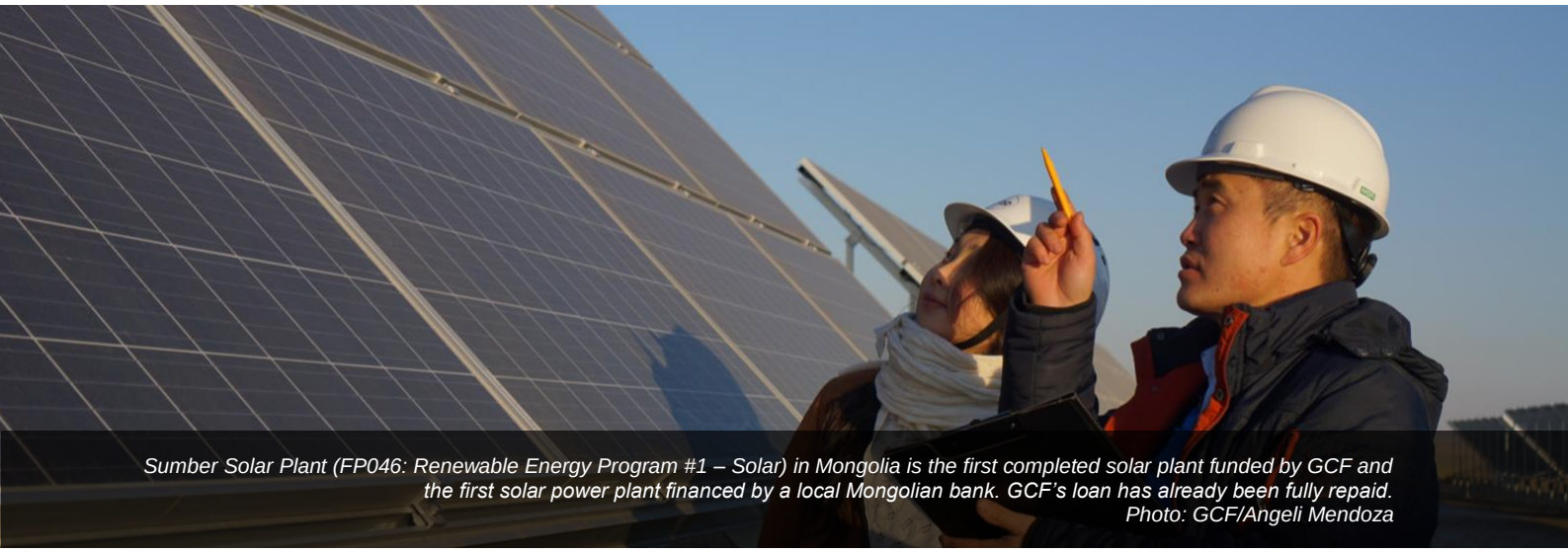
THEMATIC BRIEFS
RENEWABLE ENERGY

GREEN CLIMATE FUND



Sumber Solar Plant (FP046: Renewable Energy Program #1 – Solar) in Mongolia is the first completed solar plant funded by GCF and the first solar power plant financed by a local Mongolian bank. GCF's loan has already been fully repaid. Photo: GCF/Angeli Mendoza

The context

The energy sector is one of the largest contributors to greenhouse gas emissions given the world's reliance on fossil fuels. At the same time, hundreds of millions of people still lack access to electricity, and a third of the world's population lack access to clean energy sources for cooking. According to the International Panel on Climate Change (IPCC), this means that renewable energy must supply 70 to 85 per cent of all electricity by 2050 for the world to meet the goals of the Paris Agreement and limit warming to well below 2°C. Investments in renewable energy also increase energy access to under-served people, creates jobs, and bolsters economic growth.

Developing countries have a unique opportunity to leapfrog straight to low emissions energy generation from renewable sources, which are now cheaper than new fossil fuel power in many parts of the world.

However, despite increasingly competitive costs for renewable energy technologies, policy, regulatory and institutional barriers coupled with a lack of depth in local capital markets in developing countries prevents the mobilisation of investments at scale and at competitive rates. Action is needed to address these barriers in order to attract global financial flows and crowd in private investment shift to renewable energy-based power systems and meet national climate, economic and social goals.

GCF's unique role

The Green Climate Fund (GCF) is the world's largest dedicated fund helping developing countries to reduce their greenhouse gas emissions and enhance their ability to respond to climate change in line with the Paris Agreement. GCF invests across 4 transition areas: the built environment; energy and industry; human security, livelihoods and wellbeing; and land-use, forests and ecosystems. Under the energy transition, GCF scales up investment in renewable energy and energy efficiency. In order to promote renewable energy, GCF focuses on three main areas: energy generation from renewable sources such as wind, solar, geothermal, hydro, and sustainable bioenergy; efficient and reliable energy transmission, distribution, and storage; and promoting access to clean energy in a way that promotes sustainable development and climate resilience while reducing emissions.

In each of these areas, GCF achieves results by:

1) **Supporting transformational planning and programming**. This includes the development of long-term clean energy planning and budgeting that integrates climate externalities and socio-economic co-benefits;
2) **Catalysing climate innovation** through innovative business models and employing high-impact innovative technologies;
3) **Mobilising funds at scale** through de-risking investments, and unlocking local capital; and

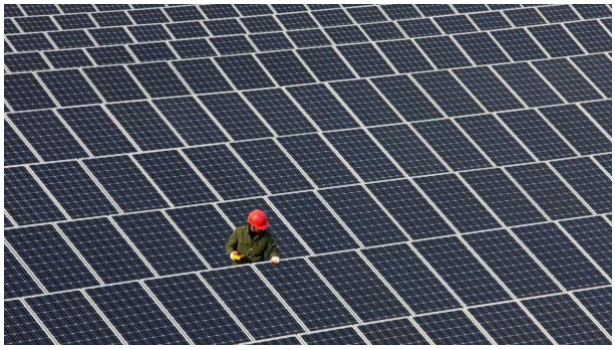
4) **Sharing knowledge of successful innovations** and funding mobilisation efforts at scale and developing climate expertise of financial institutions to replicate them. This can include enabling the adoption of best practices in grid capacity, storage and flexibility for higher penetration renewable; increasing the national and sub-national energy service buyers' green procurement capacity; and strengthening the scientific verification of causality between access to electricity and increased climate resilience.

GCF's investments are anchored in our core principle of country ownership and are aligned with existing national planning processes (e.g. Nationally Determined Contributions (NDCs), Technology Need Assessments (TNAs) and National Adaptation Plans (NAPs). GCF supports countries through its Readiness programme by providing grants to help countries develop bankable investment plans based upon their NDCs.

GCF leverages its range of financing instruments (grants, concessional loans, guarantee funds, equity investment) to meet country-specific needs and reduce risks for investors. By doing so, GCF mobilises capital at scale for investments where risk may otherwise be considered too high. This accelerates the transition to renewable energy, as well as providing energy access and affordability for millions of people, including marginalised groups.

Partnerships have formed the basis of GCF's business model since it was established. Leveraging existing sectoral initiatives, coalitions and platforms when planning interventions is critical to creating multiplier effects at scale and promoting joint learning and knowledge transfer in the renewable energy sector.

Case studies



Transforming the renewable energy market in Chile

The Espejo de Tarapacá project in Chile combines solar energy with an innovative pumped-storage hydroelectric system to offer a continuous and stable supply of low-carbon electricity, reducing Chile's dependence on fossil fuels and transforming the country's energy market. The initiative exemplifies GCF's support for financial and technical innovations and willingness to accept higher risks. By investing equity in the early development stage, prior to having a Power Purchase Agreement (PPA) in place, GCF de-risks the project, enabling the renewable energy developer to complete the development stage and win a PPA. GCF's anchor investment also helps attract and catalyse much larger private sector financing.

- **Total project value:** USD 1.1bn
- **GCF financing:** USD 60.0m (equity)
- **Tonnes of emissions avoided:** 35.0m

Solar microgrids bring affordable electricity to rural Haiti

Solar-powered microgrids are the lowest-cost, most resilient, and most climate-friendly method of quickly delivering quality energy services in rural areas. In Haiti, GCF and the Nordic Environment Finance Corporation are building 22 community-scale solar plus battery storage micro-grids in areas where no grid power exists. Taking a woman-led approach to microgrid operations, the project provides affordable and reliable 24/7 access to energy services, and technical assistance for building the capacity of women as microgrid entrepreneurs and customers. GCF support crowds in the necessary levels of project debt and equity which enables this innovative clean energy project to be replicated.

- **Total project value:** USD 45.7m
- **GCF financing:** USD 8.4m (loan), USD 1.5m (grant)
- **Tonnes of emissions avoided:** 214.4k

Catalysing an innovative financing model for renewable energy

Energy transition in developing countries is hindered by obstacles such as scarcity of early-stage financing and lack of equity financing. In partnership with FMO, the Dutch entrepreneurial development bank, GCF is supporting Climate Investor One (CIO), an innovative blended finance facility. CIO provides integrated, full project life cycle financing to support the development and commissioning of renewable energy projects in 11 developing countries. This leads to faster and more cost-effective project development and delivery vis-à-vis conventional financing. By providing a reimbursable grant, GCF catalyses institutional private sector co-financing – demonstrating a novel financing model with paradigm-shifting potential and scope for replication across other areas of climate finance.

- **Total project value:** USD 1.034b
- **GCF financing:** USD 60.0m (equity)
- **Tonnes of emissions avoided:** 35.0m

Multiplying access to solar roof-top generation in India

This project enables access to long-term, affordable finance for solar rooftop installation projects in commercial, industrial and residential housing sectors in India, including vulnerable communities. In its Nationally Determined Contribution (NDC), the Government of India has stated its ambition to achieve 40 per cent cumulative electric power capacity from non-fossil fuel-based energy resources by 2030 - with a target of 40 GW of rooftop solar power by 2022.

The programme will enable access to long-term and affordable financing for the construction of 250 MW of rooftop solar capacity in India, and thereby reduce emissions by 5.2 million tonnes of CO2 equivalent over 20 years. This pioneering private sector-driven initiative will unlock private sector investment in the rooftop solar market and pave the way towards a sustainable bankable model in India and beyond. The project has an estimated lifespan of 20 years.

- **Total project value:** USD 250m
- **GCF financing:** USD 100.0m (loan)
- **Tonnes of emissions avoided:** 5.2m

De-risking local renewable energy projects for local ownership

The GCF-DBSA Embedded Generation Investment Programme (“EGIP”) supports the implementation of renewable energy projects in South Africa with a capacity of 330 MW, which is comprised of 280 MW Solar PV and 50 MW wind.

This is done through two separate and innovative components. The first component provides credit support to private sector solar and wind Independent Power Producers established as special purpose vehicles that are backed by non-sovereign off-takers in order to enhance bankability of such renewable energy projects. The second component provides credit support to special purpose vehicles, which are established and owned by Local Community Trusts (LCTs) and/or, Small, Medium and Micro-sized enterprises (SMMEs) to support such LCTs and SMMEs in obtaining and managing an equity ownership in local renewable energy sub-projects.

- **Total project value:** USD 537m
- **GCF financing:** USD 60.0m (equity)
- **Tonnes of emissions avoided:** 14.4m

Sustainable renewables risk mitigation initiative (SRMI) facility

The need for a low emission, climate resilient economic recovery post COVID19 is crucial in shaping the long-term development pathways and determining whether NDC targets can be achieved. SRMI is helping seven target countries including Botswana, Central African Republic, Democratic Republic of Congo, Kenya, Mali, Namibia and Uzbekistan ensure that they continue on low-emission sustainable development pathways and increase access to affordable, reliable, sustainable and modern energy – providing critical support for new solar and wind projects. To do this, the programme supports the use of technical assistance and help unlock the large amounts of private finance needed to complement the limited public funding available. GCF’s USD 280 million will be complemented by an expected USD 1.3 billion in World Bank financing which in turn is expected to leverage around USD 3 billion in private investments.

- **Total project value:** USD 1,563m
- **GCF financing:** USD 280m
- **Tonnes of emissions avoided:** 89m