

Bangladesh's Financing Need For Achieving NDC Targets: Role Of IDCOL

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Bangladesh is especially vulnerable to the impacts of climate change with 80% of its land consisting of coastline and deltaic floodplains. The country is globally ranked 7th for extreme disaster risk. The Global Climate Risk Index forecasts a 15-inch sea level rise by 2080, which will disproportionately affect low-income populations. According to the World Bank's 2022 Country Climate and Development Report (CCDR) for Bangladesh, tropical cyclones already cost the nation around USD 1 billion annually, with potential GDP losses in agriculture reaching one-third by 2050.

Bangladesh urgently needs a substantial amount of climate financing to confront these growing challenges. The CCDR 2022 recommends a minimum of USD 12.5 billion, around 3% of its GDP, for mitigation and adaptation initiatives. Additionally, the Bangladesh Climate Change Strategy and Action Plan (BCC-SAP) and other policy frameworks have set ambitious climate goals, requiring an estimated USD 545.4 billion by 2030.

Bangladesh, although a low emitter of carbon—responsible for less than 0.5% of total global emissions—is committed to ambitious climate actions in line with its vulnerability to climate change impacts. In its latest Nationally Determined Contribution (NDC) submission to the United Nations Framework Convention on Climate Change (UNFCCC), Bangladesh outlined its greenhouse gas (GHG) emissions status and reduction targets.

Bangladesh's total GHG emission accounts for 169.05 million tonnes of

CO₂ equivalent (MtCO₂e). The Energy sector contributes more than 55% of the GHG emissions. Within the Energy sector, the five major sub-sectors contributing the highest to GHG emissions are power, transport, industry, household, and agriculture. The updated NDC aims to reduce GHG emissions by 6.73% unconditionally (i.e., without external financial support) by 2030, relative to the business-as-usual (BAU) scenario. Additionally, with international assistance, Bangladesh pledges to achieve an additional 15.12% reduction in emissions across sectors including energy, transportation, and industry. These targets reflect Bangladesh's commitment to contributing to global climate mitigation efforts while balancing its development needs.

As part of its GHG emission reduction in the energy sector, Bangladesh intends to shift towards implementing renewable energy projects such as solar grid-tied, solar rooftop, solar irrigation, wind, hydro, biogas, and biomass-based projects.

Under Renewable Energy Policy, 2008 the country emphasized achieving 10% supply from renewable sources by 2020. However, so far, our installed capacity of renewables is 1,379 MW which is only 5% of the total installed capacity. Electricity generation from renewables is much lower than this figure. As per the Energy Efficiency and Conservation Master Plan, Bangladesh also intends to improve its energy efficiency by 15% in the energy sector implementing various energy efficiency measures by 2030.

Apart from the GHG mitigating agenda of Bangladesh, its planned renewable energy and energy efficiency measures also inherit other macro-level benefits. Currently, the country's energy mix remains heavily dependent on fossil fuels, primarily natural gas and coal. Fossil fuels are finite resources, and the country's reliance on imported coal and oil creates economic vulnerabilities. Global fluctuations in fuel prices are significantly impacting our energy costs and overall economic stability. Moreover, the depletion of domestic natural gas reserves further increases dependence on costly imports. Advancing Bangladesh's green energy transition is vital to ensure energy security, economic resilience, and environmental sustainability. Renewable energy development aligns with Bangladesh's sustainable development goals. It offers the potential to generate new jobs, foster innovation, and reduce poverty by improving energy access in rural areas. The transition to renewable energy can drive long-term economic growth while addressing environmental concerns.

In realizing NDC targets, implementation of renewable energy and energy efficiency initiatives would require long-term concessional financing which will enable equitable pathways for private sector investment. To achieve its unconditional GHG reduction targets by 2030 through renewable energy and energy efficiency measures would require investment of more than 3.5 billion USD within 2030.

Renewable energy technologies and energy efficiency measures, particularly

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solar and wind require high upfront capital costs and long-term financing. Availability of long-term finances from the local market is scarcely available. Also, local financial institutions lack adequate human resources which is vital to ensure proper due diligence of these projects. We also do not have enough technical personnel to make significant growth in renewable energy in a short while. In a nutshell, there exists a gap in the availability of cheap finances and human resources to contribute to the government's NDC endeavors.

Key Challenges Contributing to the Finance Gap

- **High Upfront Costs:** Renewable energy projects require significant upfront capital investment, which can be a barrier for many developers, and on top of that available local finances are short-term and come with high interest rates.
- **Limited Access to Concessional Financing:** Although international climate funds like the Green Climate Fund (GCF) are available, accessing these funds can be challenging due to stringent eligibility criteria, lengthy approval processes, and a lack of awareness among local stakeholders.
- **Knowledge gap:** The financial sector in Bangladesh, including banks and microfinance institutions, often lacks the capacity to assess and finance renewable energy projects effectively. Financial institutions are unfamiliar with the technologies and business models associated with renewable energy, leading to reluctance to finance such projects.
- **Regulatory and Policy Uncertainties:** Frequent changes in energy policies, tariffs, and regulations can create uncertainty for investors. A stable and predictable regulatory environment is crucial for encouraging long-term investments in the renewable energy sector.

Infrastructure Development Company Limited (IDCOL), a government-owned financial institution established in 1997, primarily focuses on facilitating infrastructure development as well as enhancing energy access through

Program/Projects	Financing (USD million)	No of Systems/ Projects	Capacity (MW)
Solar Home System	430	4.14 million	164
Solar Irrigation Pump	44	1,523	42
Solar Mini Grid	13	26	5
Solar Roof-top	33	37	85
Grid-Tied Solar	158	5	206
Bioelectricity	4	10	2
Energy Efficiency	230	33	
Improved Cook Stove	25	4.1 million	-
Biogas	14	69,895	-
Total	952		504

renewable energy and energy efficiency projects. IDCOL has been the pioneering financial institution for any commercially scalable renewable energy and energy efficiency projects in Bangladesh.

Since 2003, IDCOL has been promoting various renewable energy initiatives in Bangladesh many of which are the first of their kind in the country. It provides technical support as well as long-term concessional loans and subsidies to disseminate these technologies. IDCOL's Solar Home System Program is the largest off-grid renewable energy program in the world which ensured access to electricity for more than 12% of the rural off-grid population. IDCOL has invested about USD 1 billion in these projects and programs. A summary of IDCOL's investment (loan and grant) under its various renewable energy and energy efficiency projects and programs are as follows:

Out of the country's 1,379 MW renewable energy installed capacity, IDCOL is directly associated with 504 MW (37%) by extending its financial support. Over the years, IDCOL has been able to expand its footprint in the renewable energy sector not only by providing finances but also through other integrated aspects as follows:

- **Renewable Energy Financing:** IDCOL has played a crucial role in providing concessionary financing in the form of long-term loans and grants to renewable energy projects.
- **Energy Efficiency Initiatives:** IDCOL has been promoting energy efficiency across various sectors, including residential, commercial, and industrial. It provides financing for energy-efficient appliances, and industrial energy effi-

ciency upgradation.

- **Capacity Building and Training:** IDCOL conducts training programs and workshops to build capacity among stakeholders, including local entrepreneurs, technicians, and partner organizations. This ensures the sustainability and effective operation of renewable energy systems.

- **Support for National Policies:** IDCOL has been supporting the government's national policies and strategies related to renewable energy and energy efficiency.

- **Monitoring and Evaluation:** IDCOL is involved in monitoring and evaluating the performance of its funded projects to assess their impact on energy access, greenhouse gas emissions reduction, and overall sustainability.

IDCOL has been working relentlessly to contribute toward Bangladesh's NDC targets, by mitigating financing gaps through its effort to secure long-term financing from several development partners which include the World Bank (WB), Asian Development Bank (ADB), German Development Bank (KfW), Asian Infrastructure Investment Bank (AIIB), Japan International Cooperation Agency (JICA), Agence Française de Développement (AFD), German Technical Cooperation, Islamic Development Bank (IsDB), Foreign, Commonwealth and Development Office (FCDO), UNDP, USAID, German Technical Cooperation (GIZ) and Green Climate Fund (GCF).

With support from the Government of Bangladesh, IDCOL has additionally sourced long-term financing of USD 1.12 billion, which will be utilized in catering to private sector investment for implementing renewable energy and energy efficiency projects in Bangladesh. If implemented, IDCOL's assistance in achieving NDC targets will be remarkable, however, substantial additional finance will also be required to realize 100% NDC targets. **EP**

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