

KNOWLEDGE NOTE



Prioritizing Renewable Energy Options

CRITERIA FOR PRIORITIZATION:

- Country context
 - Existing energy priorities, programs, and projects
 - Available renewable energy resources
 - National development goals
 - National climate change goals
 - National energy access and energy security goals
- Technology options
 - Mitigation potential
 - Costs
 - Associated risks
- Policy and regulatory framework
 - Existing implications for renewable energy options
 - Planned or projected implications for renewable energy options
- Institutional capacity
 - Financial resources
 - Project readiness

*Why might a country choose to invest in one renewable energy resource option over another? For countries participating in the Climate Investment Funds' **Clean Technology Fund (CTF)** and the **Scaling Up Renewable Energy in Low Income Countries Program (SREP)**, the answer could range from a straight-forward assessment of costs and mitigation potential to a more complex evaluation of various strategic and political factors. In any case, the variety of investments prioritized in the CTF and SREP portfolios is shedding light on the rationale behind many countries' renewable energy priorities.*

An important part of a country's low emissions investment planning process is determining which renewable energy options to prioritize for investment. Prioritization is often based on much more than climate change mitigation potential, costs, and risks. Countries must consider their specific context in terms of existing national

priorities and goals, political will, existing and projected regulations and policies, and implementation capacity. As shown by countries participating in the CTF and the SREP, prioritization is not a "one size fits all" process.

LESSONS LEARNED

Through the development of their low emissions investment plans, CTF and SREP countries have used a multi-faceted approach to prioritizing renewable energy technology options. Steps have included mapping resource availability, assessing mitigation potential and costs, identifying market potential, reviewing past experience with various technology options, reviewing and assessing the availability of funds from different sources, and assessing the potential for the private sector to play a role in project implementation or advisory services.



Construction has begun on the 100MW Sere Wind Project, South Africa's first commercial-scale wind farm, supported by CTF \$100 million. Photo: CIF AU

COUNTRY EXAMPLES

Mitigation Potential and Costs

Egypt's CTF investment plan prioritizes wind power and sustainable transport as the options with the most greenhouse gas emission reduction potential, cost-effectiveness, and potential for replication and development impact.

National Priorities

Liberia's goal to reach 35 percent rural electrification by 2030 was a driving force behind its prioritization of off-grid renewable energy systems in its SREP investment plan, as off-grid renewable energy systems have gained prominence as a solution for reaching rural and isolated areas, disconnected from the main grid.

Although **Ethiopia** has traditionally relied on its affordable and abundant hydropower resources, the country is prioritizing geothermal energy in its SREP investment plan in an effort to meet its national energy security and energy diversification goals.

Regulatory and Financial Framework

Chile's prioritization of geothermal energy in its CTF investment plan was well-aligned with the passage of 1) the September 2013 Chilean 20/25 Law, which requires that 20 percent of the energy of new energy contracts comes from non-conventional renewable energy sources by 2025, and 2) the March 2013 Decree No. 114-2012, which was designed to streamline the concession process for geothermal projects, and provide developers with long-term certainty over development rights to tap into Chile's geothermal resource potential.



Olkaria Geothermal Plant, Kenya. Photo: Nasser Brahim/CIF AU

In addition to assessing these aspects, countries are also taking into account their strategic energy and development priorities, existing and projected policy and regulatory frameworks, and the institutional capacity of prospective implementation partners.

When assessing policies and regulations, countries must ensure that their review is comprehensive with respect to policies that can affect energy production and consumption, including those pertaining to energy, climate change, environmental management and pollution control, industry, trade, and tax. The review should also be conducted with respect to planned and projected policies and regulation and their potential impact on renewable energy choices.

Implementation capacity of prospective partners can play a pivotal role in the success or failure of an investment. Countries must give careful consideration to how well an institution's capabilities and finances measure up against the needs of potential investments, as well as what potential barriers or bottlenecks exist that might affect implementation. How to eliminate or reduce these issues, and the costs associated with doing so, should also be considerations.

LOOKING FORWARD

As CTF and SREP countries embark on the implementation of their renewable energy investments, lessons will continue to emerge on the kinds of investments that are most appropriate to the specific contexts of various countries. By enabling countries with the tools and resources to strategically assess their options, as well as providing opportunities for south-south exchange on lessons learned, the CTF and SREP are strengthening country ownership and setting the stage for more refined and robust low emissions investment strategies both.

THE \$5.5 BILLION CLEAN TECHNOLOGY FUND (CTF) PROVIDES MIDDLE-INCOME COUNTRIES WITH HIGHLY CONCESSIONAL RESOURCES TO SCALE UP THE DEMONSTRATION, DEPLOYMENT, AND TRANSFER OF LOW CARBON TECHNOLOGIES IN RENEWABLE ENERGY, ENERGY EFFICIENCY, AND SUSTAINABLE TRANSPORT.

THE \$551 MILLION SCALING UP RENEWABLE ENERGY IN LOW INCOME COUNTRIES PROGRAM (SREP) STIMULATES ENERGY ACCESS AND ECONOMIC GROWTH BY WORKING WITH GOVERNMENTS TO BUILD RENEWABLE ENERGY MARKETS, ATTRACT PRIVATE INVESTMENT, AND TARGET RENEWABLE ENERGY TECHNOLOGIES THAT ALLOW FOR THE GENERATION AND PRODUCTIVE USE OF ENERGY IN HOUSEHOLDS, BUSINESSES, AND COMMUNITY SERVICES.