



Financing the Transition to Efficient, Climate-Friendly Cooling for All

An Overview of the Clean Cooling Collaborative's Finance Program (2018-2021)

March 2022



Clean Cooling
COLLABORATIVE

Working with:



Introduction

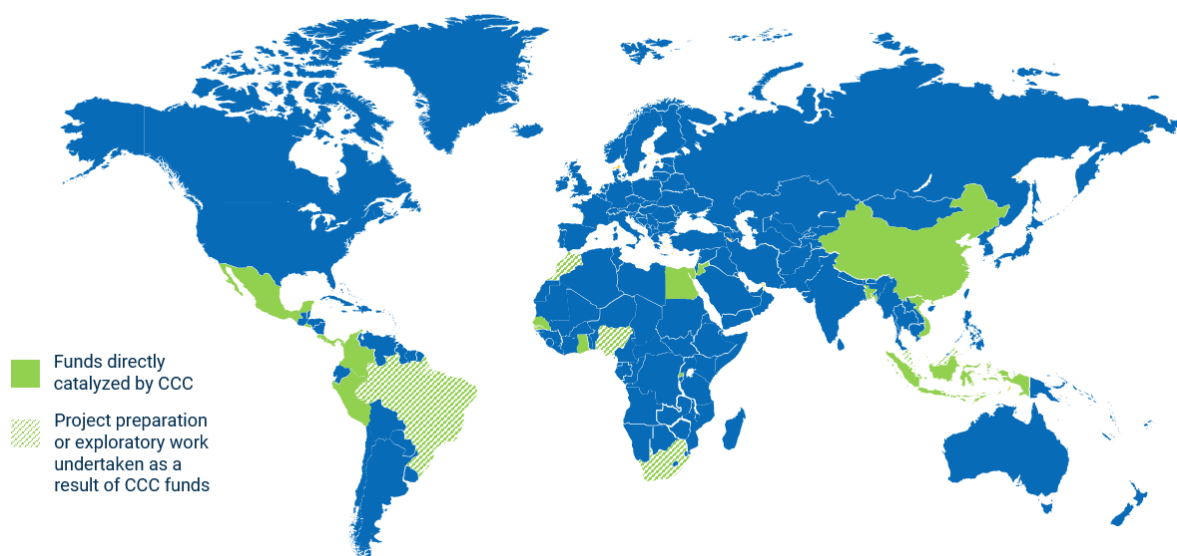
Rising global temperatures are driving increased demand for cooling, and unless we transform how we cool, we will continue to cause more global warming, exacerbating the climate crisis. Financing this transformation is a big challenge as there are relatively few examples of financing mechanisms that demonstrate how to support the transition to efficient, climate-friendly cooling, be that through driving technological advancement or scaling up the adoption of sustainable solutions.

We need to mobilize finance at speed and scale to achieve clean cooling for all. This requires demonstrations across a range of geographies, applications, and financing mechanisms, as well as disseminating lessons learned to raise awareness of the opportunity and mobilize capital from new investors. The Clean Cooling Collaborative (CCC), previously the Kigali Cooling Efficiency Program (K-CEP), has piloted innovative approaches to unlocking finance through targeted grants to inform and orient the capital needed to integrate energy efficiency improvements with the transition away from fluorinated gases (F-gases).

Despite the challenges posed by Covid-19, CCC's grantees have achieved exceptional results. From just \$10 million in grants provided by CCC's finance program, our grantees have influenced over \$600 million in on-the-ground investment.

These six finance-focused grants have supported projects and programs in a broad spread of developing countries (see figure 1) and employed different financing approaches such as on-bill and on-wage payment, credit lines, and procurement schemes. Finance has been catalyzed from a range of capital providers including private equity and debt; multilateral and national development banks; and commercial banks. The program has also brought a range of new capital providers and finance mechanisms to the cooling sector, helping to build on new policies and standards, support the development of supply chains, and raise awareness of the opportunities to deliver compelling projects in this area and address barriers to large scale deployment.

Figure 1: Map highlighting the broad geographic coverage of Clean Cooling Collaborative projects



This overview summarizes core findings, challenges, and lessons learned from the last four years of the program. A detailed set of case studies has been created to accompany this summary and can be found [here](#).

Introduction to our grantees

Grantees were chosen to reflect a range of investors, geographies, mechanisms, and technologies. The work has highlighted how projects can lead to faster implementation of efficient, climate-friendly cooling solutions and raise awareness across cooling stakeholder groups.

Projects were also intentionally chosen to develop a portfolio of work that ranges from early-stage support (project preparation/procurement) to various investment mechanisms.



GIZ: The German international development agency (GIZ) received a grant to explore options to support sustainable public procurement for cooling efficiency in public buildings in Bangladesh. The Asian Infrastructure Investment Bank (AIIB) was an implementing partner with an interest in the project results as a basis for large-scale energy efficiency investments in Bangladesh. This work has helped Bangladesh and neighboring countries to green their procurement processes.



UNEP: The UN Environment Programme (UNEP) is a leading global voice on the environment. The funding from our program was used to mobilize and scale-up three cooling projects, including investment in low global warming potential (GWP) refrigerant and energy-efficient district cooling systems in Egypt, and supporting innovative on-bill and on-wage financial mechanisms in Ghana and Senegal (ECOFRIDGES), as well as Rwanda (R-COOL FI).



WORLD BANK GROUP

WBG: With our support, the World Bank Group (WBG) launched a new Efficient Clean Cooling Program in 2019 to accelerate the uptake of sustainable cooling solutions, including space cooling, refrigeration, and cold chains. This program is led by the World Bank's Energy Sector Management Assistance Program (ESMAP) and provides support across the World Bank's global practices and the International Finance Corporation (IFC) to incorporate financing for efficient, climate-friendly cooling in projects across a range of developing countries.



SDCL: Sustainable Development Capital LLP (SDCL) is a UK-based institutional investment management firm that specializes in efficient and decentralized energy solutions for clients in the industrial, commercial, and real estate sectors. This is typically in partnership with market-leading equipment manufacturers and specialist energy services companies. Our grant supported work to demonstrate the benefits of deploying efficient, climate-friendly cooling technologies in Asia.



MGM Innova: The MGM Innova Group provides integrated environmental, financial, and technical solutions that contribute to sustainable energy management as well as climate change mitigation and adaptation. Our grant supported multiple energy-efficient and climate-friendly cooling projects across Latin America and the Caribbean.



CIB: The China Industrial Bank (CIB) acted as the implementing partner alongside Tsinghua University and the Natural Resources Defense Council (NRDC) to support the development of specialized CIB credit lines for efficient, climate-friendly cooling. The program has promoted the establishment of cooling efficiency business lines focusing on privately owned commercial buildings as well as the cold storage and logistics industries in China.

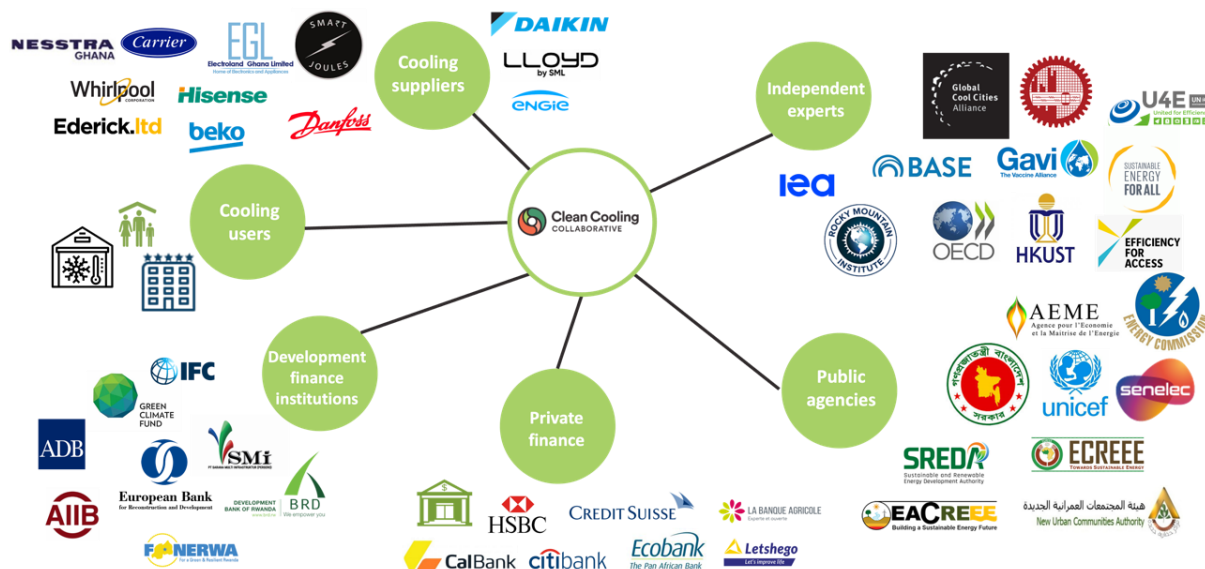
Figure 2: Portfolio overview by financing mechanism

Financing mechanism	CCC finance grantees					
	GIZ	UNEP	WBG	SDCL	MGM Innova	CIB
Project preparation facility	✓	✓	✓	✓	✓	✓
Procurement	✓	✓	✓			
Leasing					✓	
Credit line			✓			✓
On-bill / on-wage financing		✓				
Rebates, incentives, or subsidies		✓				
Cooling-as-a-Service (CaaS) / Energy Service Companies (ESCOs)				✓	✓	

Lessons learned

An important output of CCC's finance program has been to identify significant challenges and disseminate findings and lessons learned to enable other stakeholders from across the cooling ecosystem (see figure 3) to move further and faster when working to scale-up finance for efficient, climate-friendly cooling.

Figure 3: Overview of our cooling finance ecosystem



We have raised awareness and catalyzed action and collaboration across a range of cooling stakeholder groups.

Key lessons learned include:

Project pipeline

Developing a pipeline of investible projects and providing technical assistance for project preparation¹ are critical success factors in scaling up finance for efficient, climate-friendly cooling and bringing new investors into these opportunities.

*The grants awarded have developed project pipelines in both the public and private sector. Building the pipeline has helped inform large scale investments including the implementation of a cooling efficiency leasing program in Colombia and Panamá, of which the success has now enabled the replication in other investments in Colombia, Mexico, and Brazil by **MGM Innova**.*

*For **WBG**, CCC's seed funding kick-started their Efficient Clean Cooling Program, which provides grants for technical assistance and in-kind technical support for the design and inclusion of efficient, clean cooling in relevant WBG operations and investments. The program also supports policy dialogues, awareness raising, partnership development, and mobilization of concessional financing.*

Awareness

While our work has helped to raise awareness of the benefits of transitioning to efficient, climate-friendly cooling across a range of stakeholder groups, there is still a lot of work needed, both to increase the understanding of the need to deliver cooling more sustainably, and to unlock commercial debt for companies looking to deploy sustainable cooling solutions.

***SDCL** has raised awareness of the cooling imperative with corporates, public bodies, and private investors across Asia. By utilizing the CCC grant to deliver investment-grade audits and develop a significant pipeline, they have identified new market players; showed that attractive cooling finance opportunities exist for private investors in Asia; and highlighted the urgent need to address end-of-life waste management of hydrofluorocarbons (HFCs).*


*As part of **CIB**'s project to support the development of credit lines for clean cooling, the bank has worked with policymakers and industry associations to raise awareness of opportunities to finance efficient, climate-friendly cooling.*

Demonstrations and data

First-of-a-kind projects may take longer to develop and implement but they are key to promoting energy efficiency in new geographies. More data and demonstration projects are required to boost adoption and there are opportunities for the development of standard contractual toolkits on sustainable financing to ensure easier replication of projects elsewhere.

***UNEP**'s project preparation support in Egypt will allow a deep-sea district cooling system to be demonstrated for the first time in the region. While the technology is well-known in North America and Europe, regional examples are vital to prove the technical and economic feasibility and to drive demand for more efficient, climate-friendly solutions. There is significant potential to expand this approach across the developing world.*

¹ Project preparation is a process in which a proposed project is assessed to ensure it is appropriate, feasible, and well conceptualized. Efforts are taken to identify and mitigate key risks and to maximize development opportunities.



UNEP's United for Efficiency (U4E) initiative and **BASE** have accelerated the switch to efficient and low-GWP cooling solutions in Ghana and Senegal through innovative on-bill and on-wage financial mechanisms with the successful implementation of ECOWAS Refrigerators and Air Conditioners (ECOFRIDGES).

Risk perception

Efficient, climate-friendly cooling projects are often innovative and therefore carry a risk premium, particularly for upfront costs. Unfortunately, there are relatively few mechanisms in place to mitigate the risk premium associated with clean cooling projects, which in turn creates a gap in the funding available for such projects.

Our grants did not finance risk mitigation directly, but our support facilitated financier participation in this market. We will learn more as we gain implementation experience. Early feedback is that significant barriers to commercial finance in this sector remain, particularly for new business models, and several grantees have suggested that risk mitigation facilities would greatly increase uptake of efficient cooling.

Covid-19

Covid-19 significantly impacted partners' ability to access sites and speed of decision making, as well as customers' ability and willingness to pay. While the pandemic had its many challenges, it also caused finance grantees to develop new strategies; increased demand for reliable and sustainable cold chains for vaccine distribution; and highlighted the relevance and importance of cooling to help build back better.

GIZ has identified and qualified cooling finance opportunities in public buildings in Bangladesh and enabled **AiIB** to progress its first-ever energy efficiency project. By rapidly switching to virtual audits and operating remotely in line with Covid-19 requirements, the team was able to gather data, which has helped Bangladesh and neighboring countries to green their procurement processes.

*The global pandemic has highlighted the need for cooling solutions for vaccine deployment. The **WBG** has responded to the crisis by channeling funding for public health with technical assistance supported by the **ESMAP** to design sustainable, climate-friendly cooling solutions.*

What next?

Since 2018, our finance program grantees and partners have produced exceptional results. Their work has also highlighted some significant barriers to securing efficient, climate-friendly cooling for all. Fortunately, we have learned a lot from these projects and have identified many opportunities to support the mobilization of finance at the speed and scale necessary to meet the global demand for sustainable cooling solutions.

The Clean Cooling Collaborative will continue to work to catalyze organizations, institutions, companies, and governments to develop efficient, climate-friendly cooling policies, secure financing, engage industry, and establish access. One key area of focus will be cold chains due to their importance in preventing food loss (and related greenhouse gas emissions), reducing hunger, increasing food quality, and improving rural livelihoods. As in our earlier work, we will seek to support innovative solutions to address financing gaps and identify pathways for replicability and scale.