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Sachs**

**Bloomberg
Philanthropies**

ADB



Progress and Lessons
from the Climate Innovation
and Development Fund

From the executive desk:

The power of scaling private capital to advance low carbon solutions



“With \$25 million in seed capital, Goldman Sachs and our partners, Bloomberg Philanthropies and the Asian Development Bank, mobilized approximately \$500 million to help accelerate the clean energy transition in emerging markets. This is clear evidence that blended finance facilities can have a major impact – and that public and private sectors must continue working together to support sustainable solutions at scale.”

David Solomon,

Chairman and CEO of Goldman Sachs



“The clean energy transition will not succeed without faster mobilization of private capital. Through this partnership with Goldman Sachs and the Asian Development Bank, we’re demonstrating how targeted private financing – which is needed across the Global south – can cut emissions, improve public health, and spur economic growth.”

Michael R. Bloomberg,

UN Secretary-General’s Special Envoy on Climate Ambition and Solutions and Founder of Bloomberg LP and Bloomberg Philanthropies



“Asia and the Pacific faces a massive shortfall in climate investment and an urgent need to mobilize private capital at scale to respond to the growing impacts of climate change. Partnerships like the Climate Innovation and Development Fund are key to catalyzing climate action. In a short period, Bloomberg Philanthropies, Goldman Sachs, and the Asian Development Bank have successfully leveraged various financing mechanisms to take climate mitigation and adaptation action in several countries. As Asia and the Pacific’s climate bank, ADB is proud to support the fund as it expands its contribution to global climate action.”

Masatsugu Asakawa,

President of Asian Development Bank



Our project with BIM Wind will support the operation of an 88-megawatt wind farm.

Photo by BIM Wind

Overview

Combining resources from private, public and philanthropic funding proves powerful in driving sustainable development in emerging markets

Despite growth in recent years, global climate finance flows continue to fall short of demand. In 2021-2022, average climate finance flows reached nearly \$1.3 trillion — nearly double 2019-2020 levels, but well below the roughly \$4.5-\$5 trillion estimated need¹. The gap is particularly acute in Asia, where local economies remain heavily dependent on public-sector financing — and where clean energy investment is not yet at scale. In India, for example, the power sector may need about \$650 billion in additional financing to reach its 450GW renewable energy target². Similarly, Vietnam’s energy sector may need \$8-10 billion annually through 2030 to account for higher

energy demand and looming energy shortages³. While private capital is beginning to mobilize and help emerging markets make progress on decarbonization goals, the public and private sectors must continue to work collectively to drive scale and commerciality of low carbon solutions.

In 2021, to help drive more capital, Goldman Sachs and Bloomberg Philanthropies partnered to seed and launch the Climate Innovation & Development Fund (“the Fund” or “CIDF”), which is managed by the Asian Development Bank (“ADB”). The Fund’s goal was twofold: 1) increase the pace, scale and ambition of climate

1 Sourced from: Climate Policy Initiative, Global Landscape of Climate Finance - 2023 & 2021.

2 Sourced from: Bloomberg, Press Release.

3 Sourced from: USAID, Clean Energy Report.

solutions and 2) help transition to a low carbon economy.

Combining the respective strengths of Goldman Sachs, Bloomberg Philanthropies and ADB uniquely positioned the CIDF for success. By leveraging our convening power, grant capital, industry knowledge and in-region expertise, we could expand our efforts, build scale quicker and help close the gap more efficiently.

The Fund was structured as a blended finance facility⁴ and focused on catalyzing investment in low carbon technologies across South and Southeast Asia – particularly in India and Vietnam, given their enabling environment and urgent need for carbon emissions reductions to meet country-specific climate goals. Managed by ADB, the Fund was seeded with \$25 million of grant capital from Goldman Sachs Gives and Bloomberg Philanthropies. The \$25 million seed capital subsequently helped unlock ~\$500 million in private-sector and government investments across seven projects, each aimed

at helping accelerate technologies and markets for a low carbon future.

Our unique fund structure leveraged various finance mechanisms to mobilize capital through the targeted use of concessional financing (e.g., capital expenditure buy-down grants, performance or milestone-based grants, and liquidity reserves)⁵. These were blended with ADB's own lending or investment and/or financing mobilized from third parties. Using this approach, ADB deployed all of the seed capital.

The seven projects funded by the CIDF demonstrate potential for concrete, measurable climate-related outcomes in the most carbon intensive areas of India and Vietnam. Investments have focused on projects in clean energy, sustainable transport, energy efficiency, and adaptation activities to help improve the climate resilience of both livelihoods and infrastructure. Each was catalytic in nature within its regional context and is poised to have a lasting demonstration effect.



Our project with Green Cell is helping decarbonization and inclusion efforts in India.

Photo by Green Cell

4 Blended finance is defined as the strategic use of development finance (from public or philanthropic sources) to mobilize additional private sector finance in sustainable development.

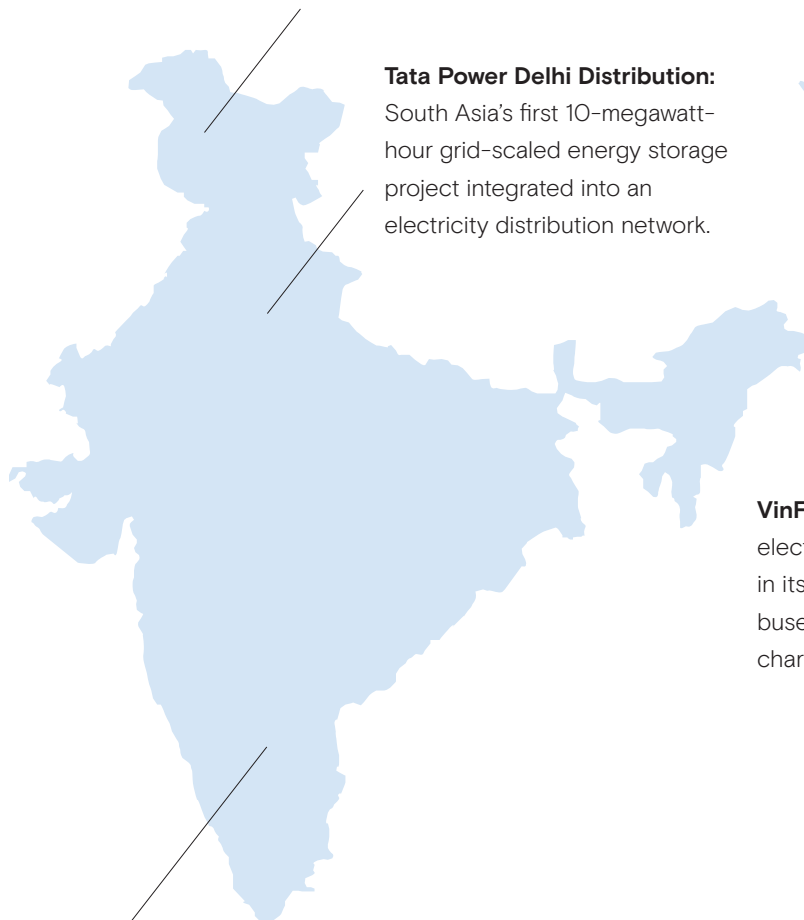
5 ADB administered Fund financings in accordance with Development Finance Institutions agreed principles on the use of Blended Concessional finance for private sector projects.

Blended finance at work:

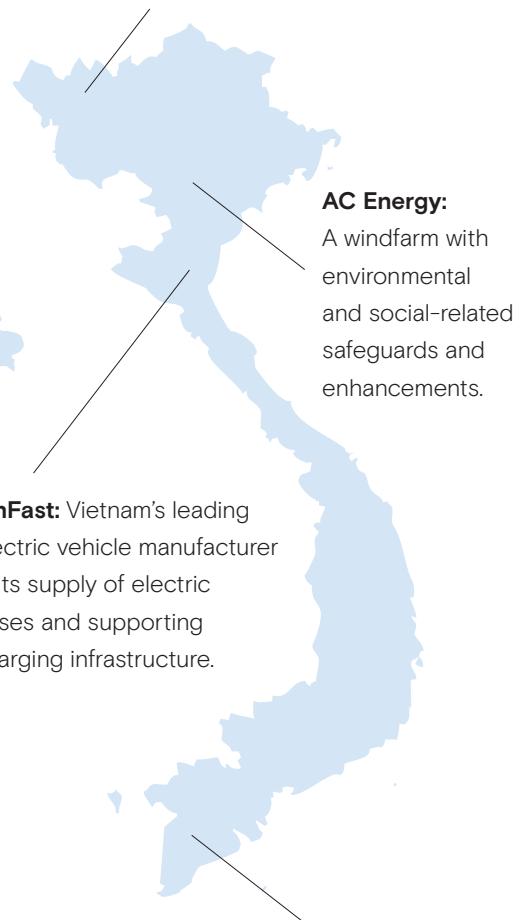
Since its inception in 2021, the CIDF has invested in seven projects across India and Vietnam to advance climate transition goals⁶

Green Cell: An integrated battery energy storage system and off-site solar electricity arrangement for an electric bus fleet.

Australis Greener Grazing: The development of seaweed as an agricultural feed supplement for carbon abatement.



Tata Power Delhi Distribution: South Asia's first 10-megawatt-hour grid-scaled energy storage project integrated into an electricity distribution network.



AC Energy: A windfarm with environmental and social-related safeguards and enhancements.

VinFast: Vietnam's leading electric vehicle manufacturer in its supply of electric buses and supporting charging infrastructure.

Greenway: The rollout of up to 1,000,000 improved cookstoves as a carbon credit project.

GreenYellow: ADB's first financing of a solar photovoltaic rooftop portfolio for the commercial and industrial segment in Vietnam.

6 On the following pages, all grant mobilization figures, additional capital contributions and projected CO₂ or GHG emissions data for each CIDF project has been provided by ADB. Grant mobilization figures and additional capital contributions are rounded estimates as of the investments' financial close date.

Vietnam: VinFast – The First Electric Bus Fleet

CIDF provided a milestone-based grant that mobilized ~44x of investment capital to support the country’s first fully-electric public transport bus fleet and first national electric vehicle charging network. The grant partially offset the project’s high upfront capital expenditure cost of establishing electric vehicle manufacturing lines for electric buses (“e-buses”) and the associated charging network. The project is now on track to build up to ~200 e-buses and add to the 150,000 charging ports VinFast has in place across 63 provinces and cities throughout the country.



VinFast delivers a high-impact and sustainable transport solution for Vietnam while helping it meet its climate goals and supporting the growth of climate finance in the region.

Photo by VinFast

India: Green Cell – Electrification of Intercity Bus Routes

This project mobilized ~14x of CIDF capital committed to support the purchase of 255 e-buses to replace diesel buses that run across 56 high-traffic intercity routes. To help reduce reliance on India’s fossil fuel-based electricity grids, the CIDF grant component will partially fund (via a capital expenditure buy-down grant) a solar power-plus-battery storage system to charge the e-buses, supported by an offsite solar farm dedicated to the project. This combination allows a portion of the bus fleet to be 100% powered by renewable energy, which may not have been economically viable otherwise. The buses are expected to serve five million people per year and include enhanced safety features for female passengers. The project aims to eliminate ~15,000 tons of CO₂e emissions per year, reflecting an important decarbonization effort given that the road transportation sector in India is largely fossil fuel based and contributes nearly 12% to the country’s total emissions⁷.



Green Cell is helping India reach net zero goals and fostering inclusivity by helping to decarbonize public transport and ensure the safety and security of female passengers.

Photo by Green Cell

7 Sourced from: IEA, Transitioning India’s Road Transport Sector.

Vietnam: AC Energy – 88-Megawatt Wind Farm

CIDF's grant has mobilized ~31x of investment capital to support an 88-megawatt wind farm in South Central Vietnam. While the project featured bankable qualities, environmental and safeguard measures were a key consideration for stakeholders. The grant is designed to de-risk the wind farm's project finance through the provision of a revenue reserve facility, which disburses funds when operations are curtailed due to environmental and social safeguards – e.g. where operations are reduced to (1) lower the shadow flicker impact on residents in the project locality or (2) reduce mortality of birds migrating close to the turbines. The project aims to offset ~215,000 tons of carbon dioxide per year⁸ while meeting Vietnam's growing electricity demand.



Our project with BIM Wind is a crucial step toward expanding Vietnam's renewable energy mix.

Photo by BIM Wind

Vietnam: Australis Greener Grazing – Climate-Resilient Aquaculture Production

CIDF's matched, milestone and activity-based grant mobilized ~14x of investment capital to support an initiative to research and develop the cultivation of *asparagopsis taxiformis* seaweed within commercial ocean farming. A small proportion of this particular type of seaweed in livestock's daily feed can reduce methane emissions associated with the digestive process by up to 98%⁹, targeting a major driver of global emissions. For context, the agriculture sector is one of the largest contributors of global greenhouse gas emissions.¹⁰ The grant will promote climate resiliency and foster ecosystem biodiversity.



Greener Grazing's research and development of *asparagopsis taxiformis* seaweed can help reduce methane emissions when in cattle feed.

Photo by Australis

8 Sourced from: ADB, "BIM Wind Sign \$107 Million Financing Package to Support Wind Energy in Viet Nam | Asian Development Bank".

9 Sourced from: Washington Post, An unusual snack for cows, a powerful fix for climate.

10 Sourced from: IPCC, Climate Change 2022: Mitigation of Climate Change.

Please note, in the original version of this report, published November 29, 2023, the statistic from the Food and Agriculture Organization of the United Nations key facts and findings no longer exists.

India: Tata Power Delhi Distribution – Grid-Scale Energy Storage Capabilities

In addition to a loan facility with ADB, CIDF’s grant, through a capital expenditure buy-down, mobilized ~22x of investment capital to partially fund the purchase and integration of a pilot 10-megawatt-hour (MWh) battery energy storage system (“BESS”), which is the first 10 MWh grid-scaled energy storage project at the distribution transformer level in South Asia. The project will help Delhi’s grid to integrate clean energy sources such as solar and wind, and is expected to help reduce grid instability, black/brownouts, and damage to customer equipment through power surges.

Vietnam: GreenYellow – Solar Photovoltaic (PV) Rooftops

The CIDF mobilized ~8x of investment capital and is providing a grant to assist the financing role of GreenYellow, a project aimed at developing commercial and industrial rooftop PV solar systems in Vietnam. This funding, in the form of a conditional guarantee / first loss capital, will support a commercial bank’s participation and aims to overcome the challenges of high upfront costs and limited financing options in Vietnam’s emerging rooftop solar sector. With a planned peak capacity of up to 32.3 megawatts, this project aims to lead to an annual reduction of ~15,000 tons of carbon dioxide emissions by 2025.¹¹

India: Greenway – Improved Cookstove Use

The CIDF grant allocated to Greenway Grameen Infra Private Limited (“Greenway”) is intended to enable the production and distribution of up to 1 million improved



“Tata Power-DDL is grateful to CIDF for the provision of its grant, which allows us to test operations of the BESS over a long period of time and as such maximise the data and findings. BESS integration into Delhi’s electricity network is vital to ensure grid stability and integrate higher renewable energy.”

Mr Ganesh Srinivasan,
CEO, Tata Power-DDL



Our project will help supply clean and affordable energy to commercial and industrial consumers in Vietnam.

Photo by GreenYellow

11 Sourced from: ADB, “GreenYellow Sign Deal for Commercial and Industrial Rooftop Solar in Viet Nam”.

cookstoves in rural households of India's Madhya Pradesh and Odisha states. This investment, in the form of a liquidity reserve, mobilized ~12x of investment capital. In 2020, it was estimated that about 3.2 million people globally lose their lives due to household air pollution from inefficient cooking practices each year.¹² This initiative addresses health hazards caused by inefficient cooking practices, aiming to save lives and empower primarily women by reducing their domestic workload.



Greenway aims to provide high efficiency cookstoves to decrease carbon emissions and improve livelihoods.

Photo by Greenway

CIDF Funding Allocation by Project

Project	Closing Date	Region	Sectors	CIDF Grant Capital Contribution (\$mm)	Additional Capital Contribution (\$mm)
VinFast Electric Mobility Project	24-Oct-22	Vietnam	E-mobility	3.00	132
Green Cell Electric Mobility Project	1-Nov-22	India	E-mobility / Renewables / Storage	5.20	74
AC Energy Wind Power Project	20-Dec-22	Vietnam	Renewables	5.00	153
Australis Aquaculture Research and Development Project	9-Mar-23	Vietnam	Aquaculture / Carbon	3.00	42
Tata Power Delhi Distribution Project	10-Apr-23	India	Electricity Storage	2.00	44
GreenYellow Photovoltaic Solar Project	7-Aug-23	Vietnam	Renewables	3.00	23
Greenway Improved Cookstove Project	27-Oct-23	India	Energy Efficiency / Carbon	3.25	38
TOTAL				24.45	506

¹² Sourced from: World Health Organization, Household air pollution.



What's next for blended finance and the advancement of clean energy solutions

As results demonstrate, blended finance can be a powerful mechanism to drive sustainable development in emerging markets. Combining private, public and philanthropic resources mobilizes significantly more capital for social and infrastructure projects than one sector alone. As we look ahead to further expanding and maximizing the impact of blended finance, we lean into six key takeaways from our combined work on the Fund:

1. Strategic Partnerships	Strategic partnerships bring added value via pooled experience and expertise.
2. Additional Capital	Blending funds unlocked significant additional capital – more than 20x the initial investment on average.
3. Proof-of-Concept	Blended finance aids in proving the concept for innovative technologies and commercial viability.
4. Project Selection and Visibility	Rigorous project selection helps address the challenges of prioritizing which opportunities to pursue.
5. Innovative Financing	Innovative finance mechanisms improve commercial viability.
6. Regional Focus	Tailoring funds to specific regions can maximize impact.

1. Strategic Partnerships:

Strategic partnerships bring added value via pooled experience and expertise

Collaboration between public and private sectors creates opportunities for knowledge exchange and capacity building. In the case of the Fund, Goldman Sachs brought sustainable finance expertise like blended and structured finance including in emerging markets. Bloomberg Philanthropies brought significant experience in both decarbonization policy and regional and country contexts.

And ADB’s country-level experience, understanding of the policy-enabling environment, and deep relationships with public and private sector institutions enabled the development of a significant deal pipeline. In addition, ADB provided valuable development finance work, backed by its own lending activity in each deal, and deal structuring skills.

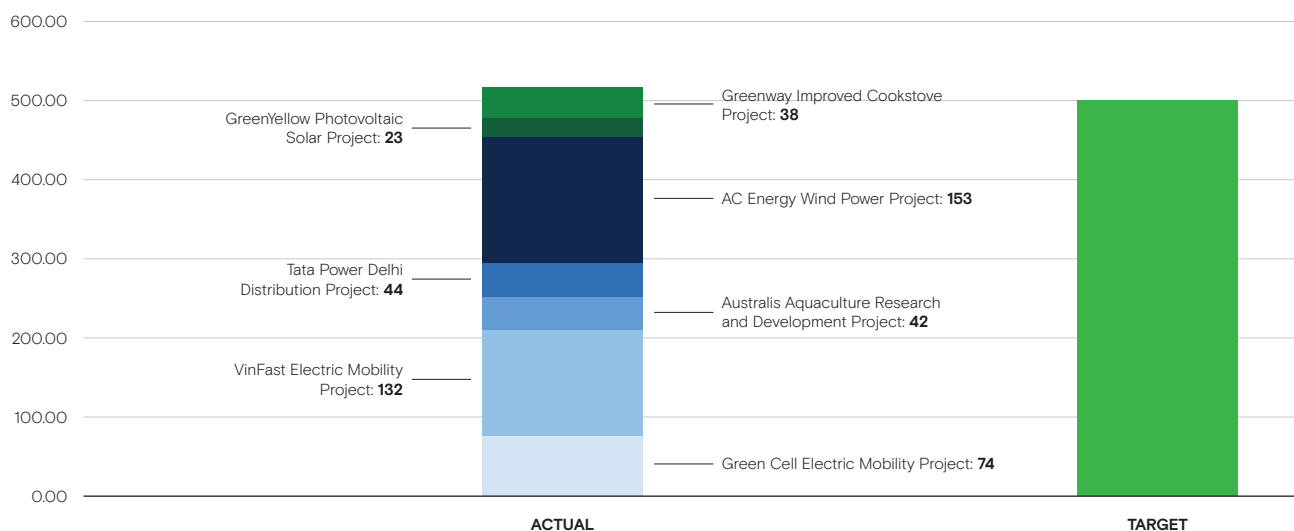
2. Additional Capital:

Blending funds unlocked significant additional capital – more than 20x the initial investment on average

Blending public and private funds unlocks additional capital – both public and private – that is not available otherwise, thereby increasing the pool of resources for these development projects. On average, each \$1 of CIDF financing has helped to catalyze

approximately \$20 of additional financing, in line with the CIDF target. In total, the Fund used CIDF concessional funds to help mobilize more than \$500 million in total private and public sector investment.

Additional Capital Contribution by Project vs. Funding Target (\$mm)



3. Proof-of-Concept:

Blended finance aids in proving the concept for innovative technologies and commercial viability

With the help of public and private funds, blended finance transactions can demonstrate the commercial viability or proof of concept for catalytic low carbon technologies. For example, the financing for South Asia's first grid-scaled energy storage project at the distribution transformer level is a proof-of-concept to hopefully demonstrate to stakeholders (such as regulators) that electricity could be stabilized

and stored in the grid. Without the assistance of CIDF to launch this proof-of-concept, the storage system would likely not be in continued operation. Likewise, CIDF funds will support innovative research and development for Australis' Greener Grazing project, which would otherwise likely not have occurred or occurred under a heavily reduced scope of work.

4. Project Selection and Visibility:

Rigorous project selection helps address the challenges of prioritizing which opportunities to pursue

One of the challenges in managing a fund such as this is prioritizing which opportunities to pursue given limited funds and pace of deployment. Our approach was to harness ADB's due diligence and credit process to narrow the field of candidates. ADB relies on its deal teams, local country offices and network to find opportunities and assess potential for each. Together, Goldman Sachs, Bloomberg Philanthropies and ADB developed a rigorous and focused framework that prioritized catalytic investments that had a high potential for scale up of capital and replication for future investment. While we believe our rigorous

framework helped effectively deploy the fund's capital, there was no shortage of candidates. More generally, blended finance project visibility could be improved to allow more capital flow into projects that do not fit under a certain bank's criteria (e.g., too early stage), but may fit under another's. In the future, we encourage more communication and coordination across development banks to facilitate investment into project pipelines. Another solution to increasing project visibility could be the production of a centralized marketplace of blended finance projects that are aggregated and available for public or private investment.

5. Innovative Financing:

Innovative finance mechanisms improve commercial viability

Each of the seven investments harnessed the power of innovative financing. For instance, four transactions made use of performance-based incentives and capital expenditure grants, while the remaining three were used as reserves or contingent guarantees. These reserves or credit enhancements were a more

appropriate concessional instrument for those projects given the requirement to mitigate foreign exchange risk or cover lower operating cashflows. More broadly, CIDF's funds have helped reduce risk for investors or will improve returns for investors and lenders, and resulted in additional private capital.

6. Regional Focus:

Tailoring funds to specific regions can maximize impact

Early on, CIDF decided to narrow its focus from the whole of South and Southeast Asia specifically to India and Vietnam. This decision was based on two considerations: First, research indicates that most new emissions

stem from the world's 99 middle income countries.¹³ Second, middle or lower-middle income countries usually have an enabling environment where green projects can be commercially viable and more easily scaled.

Conclusion

The CIDF has been a valuable case study in the power of blended finance — yet our work is not done. While the fund made notable investments to achieve projected emission reductions and had catalytic impact, the scope of emission reductions needed to avoid dangerous climate change impacts in Asia and the Pacific is enormous and will require continued innovative financing at scale. Our hope is that the CIDF can serve as a model for other sustainable solutions in the public and private sector alike.

13 Sourced from: Brookings, Making emissions count in country classifications.

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