



Prioritization Brief

Accelerating Climate Change Mitigation in Low- and Middle-Income Countries



October 2026

Table of Contents

Table of Contents.....	1
Summary.....	2
Why Are We Focusing on Low- and Middle-Income Countries?.....	3
Which LMICs Do We Prioritize?.....	8
Country Prioritization.....	8
Data Limitations.....	12
Sector Prioritization in India and Indonesia.....	13
India Sector Prioritization.....	14
Indonesia Sector Prioritization.....	15
What Do We Recommend Funding in LMICs?.....	16
Decarbonizing India's Power Sector.....	17
Decarbonizing Indonesia's Power Sector.....	19
Derisking Clean Electricity Investments in LMICs.....	21
Next Steps.....	23
Acknowledgments.....	24

Appendices for this report can be found [here](#).

This report was last updated in October 2026. This is a non-partisan analysis (study or research) and is provided for educational purposes.

Questions and comments are welcome at hello@givinggreen.earth.

Cover image: [pexels.com](https://www.pexels.com)

Summary

Why did we decide to focus on Low- and Middle-Income Countries?

Emissions are rising rapidly in low- and middle-income countries (LMICs), which already account for 64% of global emissions. Without further intervention, rising incomes, industrialization, and urbanization are expected to drive significant growth in energy demand and associated emissions.

Shifting to low-carbon pathways is particularly challenging for LMICs given their development and economic growth needs, as well as their greater exposure to climate impacts. While political ambition and implementation capacity vary across LMICs, climate change is increasingly recognized as a priority, and many countries have strong political support for the energy transition and a low-carbon economy. In these countries, decarbonization is increasingly seen as aligned with broader goals around energy security, economic competitiveness, and affordability.

Despite their large current and future emissions share and appetite for climate mitigation, LMICs receive relatively little philanthropic funding. Philanthropic foundation funding support for LMICs is just 2 cents per ton of CO₂-equivalent (tCO₂e), compared with 19 cents per tCO₂e in the United States and 14 cents per tCO₂e in the EU, representing seven to nine times less philanthropic funding per metric ton of emissions.

We believe it is critical to understand the challenges and opportunities in charting low-carbon, cost-effective pathways that meet growing energy demand and support economic growth in LMICs. We try to take a nuanced approach that also considers the moral imperative of high-income countries (HICs) leading on emissions reduction and embedding decarbonization in LMICs into a broader context of energy access, energy security, and economic growth.

How have we prioritized opportunities in LMICs?

We used a structured prioritization process to identify LMICs where climate-focused philanthropic funding could have the greatest potential impact. We assessed countries across the scale of their current and future emissions, the feasibility of effective philanthropic engagement, and the relative level of unmet climate funding needs. Based on these criteria, we identified the most promising countries from the broader set of LMICs and grouped them into three tiers to sequence our research and engagement, with the highest-priority countries receiving most immediate and in-depth attention.

As a complementary approach to our country-specific strategies, we also explored opportunities to hasten electricity sector decarbonization at a regional or global level. This strategy focused primarily on removing barriers to investment in clean electricity projects. While our strategies in India and Indonesia are targeted and calibrated to their respective unique barriers, this approach focuses on pervasive challenges LMICs face in decarbonizing their power sectors and, as a result, strategies that can benefit a wide range of countries. We began by examining which grid and market risks most commonly deter investors from financing clean energy projects in LMICs, and how addressing those

risks could attract additional capital and support lower-emission power sectors across these countries. Going forward, we plan to apply the regional and multi-country approach to additional risks that prevent financing or deployment of clean energy.

What do we recommend funding in LMICs?

We recommend supporting the following strategies in LMICs:

1. [Decarbonizing India's Power Sector](#)
2. [Decarbonizing Indonesia's Power Sector](#)
3. [Derisking Clean Electricity Investments in LMICs](#)

Giving Green's deeper research into each of these strategies can be accessed in the respective links above.

Why Are We Focusing on Low- and Middle-Income Countries?

Giving Green's mission is to improve human and ecological wellbeing. We aim to increase funding for high-impact strategies that reduce greenhouse gas (GHG) emissions, thereby mitigating the impact of climate change on people and the planet. Given that climate change is a global challenge requiring coordinated efforts across countries, we adopt a global perspective in identifying and prioritizing high-leverage countries and strategies where additional support can most accelerate decarbonization cost-effectively.

Overall, we think advancing climate change mitigation is important in both HICs and LMICs. We take a nuanced approach that considers the differing emissions trajectories of HICs and LMICs and the subsequent decarbonization roles and responsibilities in each context. We recognize the moral imperative for HICs to lead on emissions reduction while ensuring LMICs have adequate support to pursue low-emissions development pathways that are aligned with priorities such as energy access, energy security, and economic growth.

Emissions trajectories in HICs and LMICs. HICs have held a central role in depleting the global carbon budget.¹ Despite representing only roughly 17% of the global population,

¹Note: We adopted the World Bank Atlas method to classify countries based on their income level as High-Income Countries (e.g., Belgium, Chile, Saudi Arabia), Upper-Middle Income Countries (e.g., Botswana, Ecuador, Serbia), Lower-Middle Income Countries (e.g., Haiti, Nepal, Senegal) and Low-Income Countries (e.g., Chad, Rwanda, Yemen). [World Bank Group, 2024](#); Income-level categorization: "For the current 2025 fiscal year, low-income economies are defined as those with a Gross National Income (GNI) per capita, calculated using the World Bank Atlas method, of \$1,145 or less in 2023; lower middle-income economies are those with a GNI per capita between \$1,146 and \$4,515; upper middle-income economies are those with a GNI per capita between \$4,516 and

HICs are responsible for 50% of global cumulative GHG emissions, having emitted roughly 1.8 trillion tCO₂e since 1850.² In 2024, emissions per capita averaged 12.5 tCO₂e in HICs in contrast to 5.4 tCO₂e in LMICs.³ In simpler terms, on average, a single person in an HIC emits more than 2.3 times as much as an individual in an LMIC. Hence, we acknowledge the responsibility of HICs to lead the way in emission reductions given their historical contribution to global GHG emissions (**Figure 1**), developmental status, and greater financial capacity.

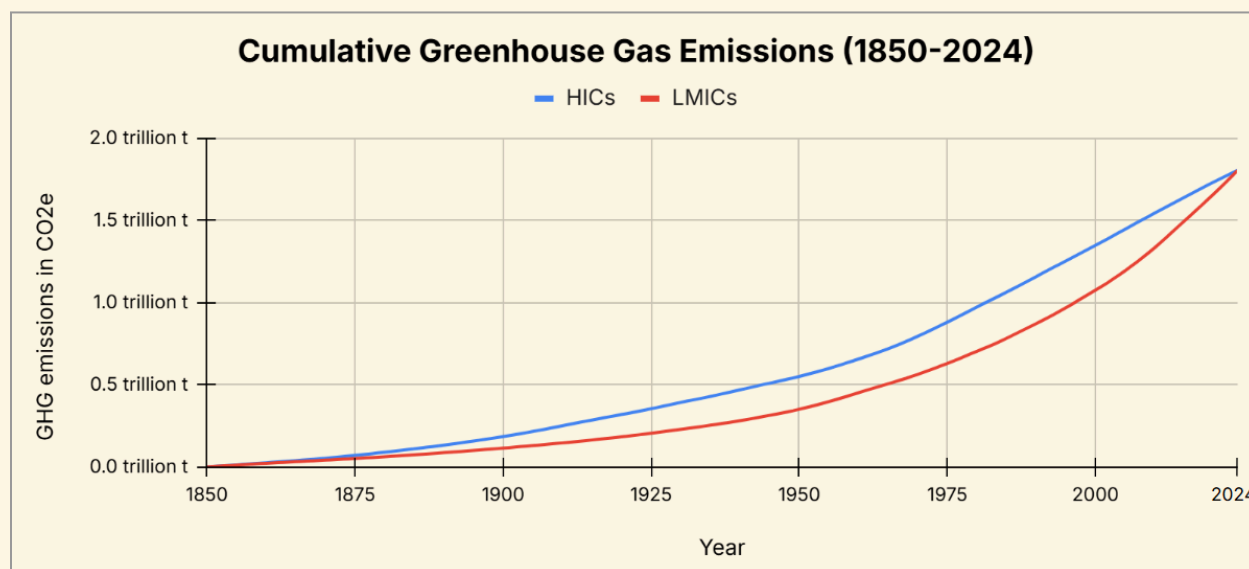


Figure 1: Historical cumulative GHG emissions trends from HICs and LMICs⁴

In parallel, we recognize that reducing HIC emissions alone may not be sufficient. In 2024, LMICs already accounted for 64% of annual global GHG emissions, and this share is expected to grow in the coming decades.⁵ Additionally, mitigation strategies in LMICs can

\$14,005; high-income economies are those with more than a GNI per capita of \$14,005. Table: BY INCOME." [World Bank Group, 2024](#)

² Share of population calculated using data from World Bank. In 2024, total population in LMICs was 6.79 billion, total population in HICs was 1.42 billion, and total world population was 8.22 billion. [World Bank, 2025](#); Share of emissions contribution and cumulative emissions based on [Giving Green analysis](#) of historical emissions of HICs from 1850 to 2024 based on data sourced from [Our World in Data](#) and [Jones et. al, 2025](#)

³ Per capita emissions calculated by dividing total emissions by population in 2024. HIC emissions of 18 billion tCO₂e were divided by a population of 1.4 billion, yielding 12.5 tCO₂e per capita. LMIC emissions of 37 billion tCO₂e were divided by a population of 6.79 billion, yielding 5.4 tCO₂e per capita. See footnote 2 for population data sourced from World Bank and [Giving Green analysis](#) for emissions data for HICs and LMICs between 1850 to 2024. Emissions include land use change.

⁴ [Giving Green analysis](#) of historical GHG emissions data sourced from [Our World in Data](#) and [Jones et. al, 2025](#); Emissions include land use change.

⁵ Calculated based on country emissions data from EDGAR. LMICs contributed to 34 billion tCO₂e out of a total of 53.2 billion tCO₂e global GHG emissions in 2024. Current country emissions based on 2024 data from EDGAR's consolidated spreadsheet with 'Annual GHG emissions by country by year [1970-2024]'. Land-use change is not included. [Crippa et al., 2025](#);

be particularly cost-effective, especially when emission levels are high.⁶ Hence, LMICs can play an important role in adopting low-carbon pathways and avoiding lock-in to emissions-intensive infrastructure and technologies.⁷ We think the role of LMICs is especially paramount given the rate of emissions increase in these regions (**Figure 2**).⁸

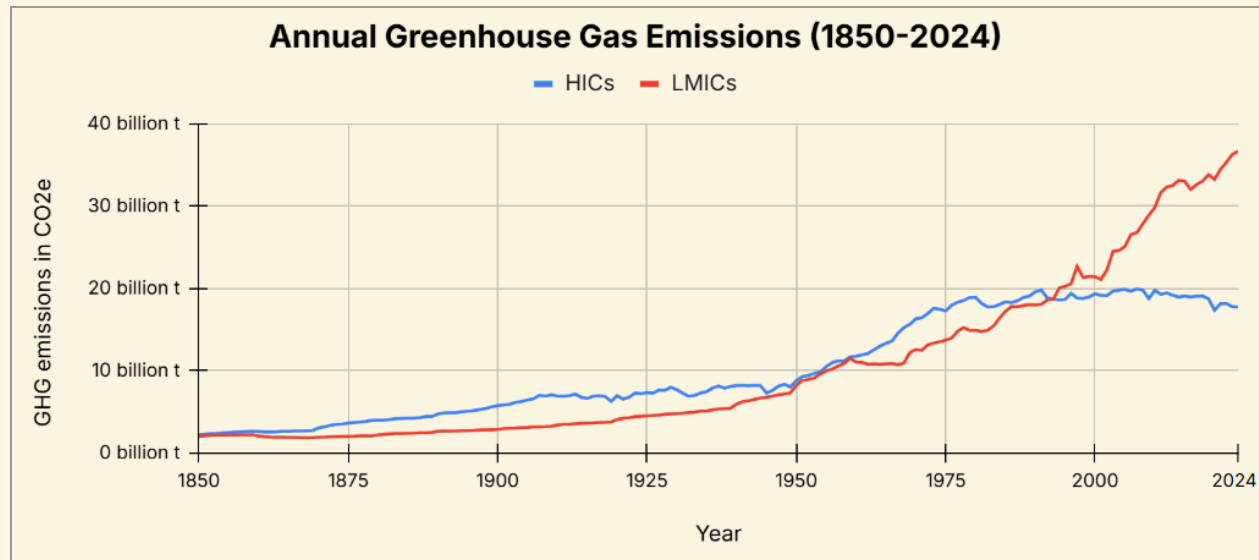


Figure 2: Historical annual GHG emissions trends from HICs and LMICs⁹

Emissions and economic growth. The rise in emissions in LMICs has closely tracked their economic and demographic growth.¹⁰ As these economies continue to develop, rising

⁶“First, carbon emissions are higher per person in high-income countries, while low-income countries emit hardly any carbon at all. Some efforts to mitigate carbon emissions are most cost-effective when emission levels are high. For example, a US office building is typically kept at a lower temperature in summer than a comparable building in a poorer country. Insulating the US building has more payoff in reduced energy use, because the cooling use is more intense. The same reasoning applies more broadly to legal and regulatory change; for example, the reduction in carbon emissions that results from passing regulation to limit emissions from cars will be higher in countries with higher car ownership, all else equal.” [Glennerster & Jayachandran, 2023](#)

⁷“For example, to keep within 2 degrees of warming, high, upper-middle, lower-middle, and low-income countries will need emissions reductions of 39%, 30%, 8% and 8%, respectively, by 2030. To stay below 1.5 degrees of warming would entail more drastic emissions cuts of 60 percent and 51 percent for high- and upper-middle income countries.” [Black et al., 2023](#)

⁸ “According to the data from the World Bank, the highest growth in CO₂ emissions based on income groups was observed among middle-income countries, where carbon emissions have increased by more than 130% over the period 1960–2016, compared to 40% in high-income countries.” [Majewski et al., 2022](#); “Electricity consumption in emerging markets and developing countries is projected to grow at around three times the rate of developed countries (IEA 2022).” [Hartwich & Farnleitner, 2024](#)

⁹ [Giving Green analysis](#) of historical GHG emissions data sourced from [Our World in Data](#) and [Jones et. al, 2025](#); Emissions include land use change.

¹⁰ “The CO₂ emissions normalized for populations in middle-income countries for the years 2000–2016 are plotted in Figure 1. Evidently, there is a rising trend of carbon emissions, which

incomes, industrialization, urbanization, and expanding infrastructure will drive greater demand for energy as well as household, commercial, and industrial goods.¹¹ For instance, doubling personal real income increased the probability of an individual owning a vehicle by 9.6 percentage points, with similar trends observed in the ownership of air conditioners, refrigerators, or cell phones.¹² Electricity demand is also expected to increase rapidly, particularly in China, India, and Southeast Asia, where demand is projected to grow by at least 5% annually between 2026 and 2030, compared with 3.6% globally.¹³ Hence, as LMICs continue to develop, decarbonizing their growing energy demand and industrial activities will be critical to avoiding a steep rise in emissions.

Cost-effectiveness of mitigation strategies. We are particularly interested in LMICs based on Glennerster and Jayachandran's argument that the location of climate change mitigation should not be conflated with financial ownership for mitigation.¹⁴ Because climate change is a global externality, the most cost-effective approach is to prioritize mitigation where the cost per metric ton of CO₂ avoided is lowest. Particularly, the cost of decarbonization in LMICs can be lower than in HICs because of lower costs of land and labor in these countries.¹⁵ Several low- and negative-cost decarbonization opportunities, such as landfill methane capture and energy-efficient cooking stove adoption, remain untapped due to limited access to capital and weak regulatory capacity to drive widespread adoption.¹⁶

seems to follow economic growth trends, demographic changes and other socio-economic processes that were taking place in this group of nations." [Majewski et al., 2022](#)

¹¹ "Rising incomes in middle-income countries will lead to a surge in demand for consumer durables, leading to rapid increases in the demand for electricity and energy." [Kahn & Lall, 2023](#)

¹² "A doubling of personal real income increases the probability of owning a vehicle by 9.6 percentage points (Kahn and Lall 2022). We find similar magnitude income effects for air conditioners and refrigerators, washing machines, cell phones, computers, and televisions." [Prasad, 2024](#)

¹³ "Emerging economies continue to be the main pillar of demand growth, accounting for nearly 80% of additional electricity consumption through 2030. While India and Southeast Asia are increasingly set to drive rising energy demand over the coming decade, China is forecast to remain the single largest contributor to global electricity demand growth through 2030, accounting for close to 50% of the increase." Year-on-Year growth based on chart, Year-on-Year percent changes in electricity demand in selected regions, 2020-2030. "[...] we expect demand growth to pick up in 2026-2030, to an average 3.6% over the next five years – a significant acceleration compared to the 2.8% annual rate of the past decade." [IEA, 2026](#)

¹⁴ "In this article, we will argue that many of the most cost-effective opportunities for mitigation—that is, reduction in atmospheric CO₂ levels—are likely to be in low and middle-income countries [...] Who should pay for carbon mitigation and where that mitigation is most efficiently conducted are two separate questions. Unfortunately, focus on the "who should pay" question has often obscured clear-eyed discussion of "where is the reduction most efficiently conducted [...]" [Glennerster & Jayachandran, 2023](#)

¹⁵ "In particular, many mitigation investment opportunities require substantial inputs of land and unskilled labor, which can make the same type of mitigation activity less expensive in low- and middle-income countries than in high-income countries." [Glennerster & Jayachandran, 2023](#)

¹⁶ "One reason for the mitigation bargains in low- and middle-income countries is that some cheap opportunities that are already being pursued in high-income countries remain untapped in low- and middle-income countries[...] Nonetheless, there very likely are profitable opportunities that

Despite these opportunities, climate finance remains highly concentrated in HICs.¹⁷ For example, philanthropic support for climate change mitigation in countries such as India and Indonesia stands at roughly 3 cents per tCO₂e, which is five to six times lower than levels in the U.S. and the EU at 19 cents per tCO₂e and 14 cents per tCO₂e, respectively.¹⁸ The case for accelerating mitigation in LMICs is compelling not only from a cost-effectiveness standpoint, but also because the marginal impact of shifting to lower-carbon systems is likely to be greater where fossil fuel dependence is high, and infrastructure is still being built. Hence, early decarbonization measures in LMICs can prevent long-term lock-in of carbon-intensive infrastructure while supporting the global transition to cleaner technologies and infrastructure.

We therefore see a high-leverage role for philanthropy in LMICs, particularly in helping to unlock greater climate financing and addressing the institutional, regulatory, and information barriers that prevent cost-effective mitigation opportunities from being realized. Importantly, Glennerster and Jayachandran argue that although mitigation in LMICs can generate local development benefits, its primary purpose is to deliver global climate benefits.¹⁹ Such a framing enables distinguishing climate change mitigation funding from traditional development assistance and reinforces the case for considering mitigation opportunities globally based on their climate impact.

Hence, philanthropic funders can play a catalytic role by directing resources to LMICs, where emissions are rapidly growing, high-impact and relatively low-cost mitigation opportunities remain concentrated, and early support can accelerate the transition to low-carbon economies while preventing long-term carbon lock-in. We hold this view in parallel with the recognition that HICs play a critical role in reducing their own emissions and potentially supporting mitigation beyond their borders to achieve greater global climate impact.

have not been pursued. Two answers to the puzzle of why they have not been pursued are limited access to capital and limited regulatory capacity." [Glennerster & Jayachandran, 2023](#)

¹⁷ "Overall, funding [foundation funding] to specific countries and regions was even more concentrated in 2024 than in the previous years, with ~70% of the total directed toward work in the United States and Europe alone." [ClimateWorks Foundation, 2026](#)

¹⁸ Calculated based on emissions data from EDGAR and foundation giving data from ClimateWorks. Indonesia: 1.3 billion tCO₂e emissions, \$42 million funding; India: 4.3 billion tCO₂e emissions, \$147 million funding; U.S.: 5.9 billion tCO₂e emissions, \$1.16 billion funding; EU: 3.17 billion tCO₂e emissions, \$447 million funding. [Crippa et al., 2025](#), [ClimateWorks Foundation, 2024](#)

¹⁹ "The amount spent on a mitigation project is not a measure of the benefit to the low- or middle-income country. Only the increase in well-being in the low- or middle-income country, in the form of local environmental co-benefits or surplus from job creation, for example, constitute foreign aid to that country. This local surplus will often be modest relative to the total project budget, because many of the project costs are to offset the host country's opportunity costs of participating in mitigation projects or to purchase inputs produced elsewhere. Most of the spending should be considered an investment in the global public good of climate change mitigation, not aid." [Glennerster & Jayachandran, 2023](#)

Which LMICs Do We Prioritize?

Country Prioritization

We followed a step-by-step approach to identify high-priority countries and assign them to three priority tiers, as described below.

We first compiled a comprehensive list of LMICs using the most recent World Bank Atlas categorization, filtering out all countries categorized as “High income.” This step yielded 131 LMICs,²⁰ from which we aimed to identify up to 10 for further consideration.

Motivated by our [scale, feasibility, and funding need framework](#), we identified suitable data to inform a list of criteria for country prioritization, which we describe below and present in our [Country Prioritization](#) spreadsheet.

1. **Scale:** To assess scale, we gathered country-level data on current absolute and per capita emissions, as well as projected 2050 emissions.²¹ We used two selection criteria for evaluating scale: one centered on absolute emissions, and one centered on emissions per capita (selection criteria 1 and 2 below, respectively). The former reflects the influence that national governments may have on overall emissions trajectories through national policy, while the latter acknowledges that more targeted sector-level or microeconomic strategies may be promising in countries with high per-capita emissions, provided that a country has relatively high overall emissions.
 - **Selection criteria 1:** We first narrowed our list to countries with current emissions in the top 25% among LMICs. Then we selected the countries whose projected absolute emissions in 2050 under a business-as-usual (BAU) scenario are in the top 25% of this subset.²²
 - *Countries that passed Scale selection criteria 1:* Brazil, China, India, Indonesia, Iran, Mexico, Pakistan, Turkey, Vietnam

²⁰ “According to the World Bank’s classification of countries based on their Gross National Income (GNI) for the 2025 fiscal year, there are 26 Low-Income Countries, 51 Lower-Middle-Income Countries, 54 Upper-Middle-Income Countries and 86 High-Income Countries.” [World Bank Group](#) (accessed July 2025)

²¹ Current absolute and per capita emissions based on 2024 GHG data from EDGAR’s consolidated spreadsheet with ‘Annual GHG emissions by country by year [1970-2024]’. Land-use change is not included. [Crippa et al., 2025](#); We manually scraped [World Data Lab](#)’s data for 2050 projections in a BAU scenario; “Country ratings” [Climate Action Tracker](#) (accessed October 2025)

²² World Data Lab provides 2050 projections for three scenarios (see appendix). We opted to use the BAU scenario given our belief that countries’ current level of ambition as indicated in their Nationally Determined Contributions provides a weak signal of future emissions, and that philanthropic support may remain key to reaching countries’ climate goals. We use World Data Lab projections due to availability of data at a country-level for all countries which is not the case with other projections like ClimateWorks which only offers country-level data for select countries.

- **Selection criteria 2:** We first selected LMICs that ranked in the top 50% for absolute emissions and the top 25% for per-capita emissions. From this subset, we then further selected countries whose projected 2050 BAU emissions are in the top 50%.
 - *Countries that passed Scale selection criteria 2:* Brazil, China, Iran, Malaysia, Mexico, South Africa, Thailand, Turkey, Vietnam
- 2. **Feasibility:** We then excluded countries with presumed low feasibility based on the Global Philanthropy Environment Index (GPEI).²³ We excluded countries with an "Overall" GPEI score below 3 out of 5, resulting in outcomes that roughly aligned with our own assessments of our ability to conduct due diligence (in part due to language barriers) and to direct funding to organizations in these countries effectively. Given China's exceptionally high emissions and innovative capacity, we have recently independently assessed and verified the feasibility of plausibly high-impact grantmaking, so we also include China despite its lower GPEI score.²⁴
 - *Countries that also passed the Feasibility criterion:* Brazil, China, India, Indonesia, Malaysia (missing data), Mexico, Pakistan, South Africa, Thailand
- 3. **Funding need assessment:** The existence of and methods behind funding need estimates are highly variable across countries.²⁵ We crudely assessed funding need by estimating the combined public, private, and philanthropic sector climate funding as a percentage of overall funding need. We did so by first identifying relatively recent estimates²⁶ of climate funding and overall need from Climate Policy Initiative (CPI) and other sources, as well as ClimateWorks' foundation funding.²⁷ We then divided each country's total climate funding by its annual

²³ [Global Philanthropy Environment Index, 2025](#)

²⁴ We updated our assessment of China based on recent shifts in the philanthropic landscape and our engagements with funders working in China. We had previously deprioritized China due to low perceived feasibility of grantmaking, as foreign funders are not legally allowed to directly fund Chinese nonprofits without establishing a legally recognized presence or activity in China (see [ICNL](#), accessed August 2026). "Article 9 states that NGOs [Overseas NGOs] "that do neither of these are not allowed to carry out activities either openly or covertly, or to authorize, fund, or covertly authorize any Chinese work unit (danwei) or individual to carry out activities [...] This comprehensive provision makes it clear that Chinese work units and individuals put themselves at risk if they cooperate with NGOs that have not gone through one of these legal channels."

²⁵For example, CPI provides bottom-up estimates of country-level and regional climate funding needs, sometimes alongside top-down country-level estimates. For South Africa, CPI's 2023 top-down estimates indicate annual climate funding of \$7.5 billion and annual funding needs of \$30.8 billion. However, CPI's more recent bottom-up estimates put South Africa's annual funding needs at \$7.1 billion for mitigation alone and \$22.8 billion for mitigation and adaptation combined. Comparing the top-down funding estimate with the bottom-up mitigation-only estimate would suggest that South Africa's funding needs have already been met. In many cases, CPI does not provide country-level estimates, so we conducted bespoke searches to identify relevant data.

²⁶ For instance, the climate finance source we identified for Indonesia provides average annual figures from public and private financial institutions from 2015-2021, so the numbers for Indonesia are somewhat outdated. We are therefore less certain that funding need meets the <50% criterion.

²⁷ "Global Landscape of Climate Finance 2025," [CPI, 2025](#) (see discussion of CPI data in the appendix); Figure 3, "Known foundation support to regions, sectors, and strategies, 2019 to 2023, USD millions" (p. 9), [ClimateWorks, 2024](#)

funding need. While that calculation suggests that only a few of the countries listed above are more than halfway to meeting their annual need, the absence of a common data source within and across countries makes us cautious about overinterpreting these figures.

To sequence our research, we created prioritization tiers for the remaining countries.²⁸ For our highest priority countries (Tier 1), we have conducted country-specific research and grantmaking. For countries in Tier 2, we plan to further assess the potential impact of conducting similar country-level research and grantmaking in the future. For countries in Tier 3, we may consider promising funding opportunities that come across our radar. Country tiers and sources for the country-level information below can be found in our [Country Prioritization](#) spreadsheet, which we plan to update every two years.

Table 1: Tiered country prioritization²⁹

	Country	Scale				Funding need (uncertain)	
		GHG Emissions 2024 (million tCO ₂ e)	Per capita GHG Emissions 2024 (tCO ₂ e)	BAU GHG Emissions in 2050 (million tCO ₂ e)	BAU high-emitting sector in 2050 (million tCO ₂ e)	% need met (recent years)	Annual funding shortfall (USD)
Tier 1	India	4,371	3	8,900	Energy: 4,300	11%	\$400 billion
	Indonesia	1,324	4.7	3,500	Energy: 1,900	27%	\$35 billion
Tier 2	China	15,536	10.8	14,300	Energy: 8,900	67%	\$322 billion
	Mexico	687	4.9	1,100	Industry: 468	21%	\$13 billion
	South Africa	570	9.3	574	Energy: 312	20%	\$25 billion
Tier 3	Brazil	1,300	5.9	2,400	Agriculture: 1,300	52%	\$16 billion
	Pakistan	526	2.4	1,100	Agriculture: 566	7%	\$40 billion
	Malaysia	332	9.6	818	Energy: 391	53%	\$5 billion
	Thailand	422	6.1	666	Industry: 333	32%	\$17 billion

²⁸ Note that all remaining countries that have been assessed by the [Climate Action Tracker \(CAT\)](#) are rated as “insufficient,” “highly insufficient,” or “critically insufficient” with respect to their policies, targets, and actions toward meeting the 1.5° C global goal, indicating that all will need support. CAT has not assessed Malaysia.

²⁹ Giving Green, [Country Prioritization](#) 2026; Excludes land use emissions.

In Tier 1, we prioritized India and Indonesia due to these countries' exceedingly high emissions, coupled with the feasibility of directing international philanthropic capital. Both are among the top 10 global emitters, and each includes sectors with projected 2050 emissions that exceed the current emissions of any other country on our shortlist except China, which we plan to explore more deeply in 2027.

- **India:** With emissions over 4.3 billion tCO₂e in 2024, India is the third-largest global emitter behind China and the United States, and has the second-highest emissions among LMICs deemed feasible for philanthropic influence according to our GPEI scoring criterion.³⁰ Under BAU, the most emitting sector in 2050 is expected to be energy, emitting 4.3 billion tCO₂e, followed by industry (2.6 billion tCO₂e) and transport (1.1 billion tCO₂e). NITI Aayog estimates that India would need an annual funding of \$450 billion to achieve its net-zero targets by 2070, while its current yearly funding is around \$50 billion, indicating an annual shortfall of around \$400 billion.
- **Indonesia:** Indonesia emitted 1.3 billion tCO₂e in 2024, making it the fifth-highest emitter globally and the third-highest emitter among LMICs we deemed feasible for philanthropic influence. Under BAU, the most emitting sector in 2050 is expected to be energy, emitting 1.9 billion tCO₂e, followed by agriculture (863 million tCO₂e) and industry (448 million tCO₂e). We estimate with low certainty that annual climate funding in Indonesia totals around \$10 billion to \$15 billion, while CPI's bottom-up climate finance need data suggests a yearly need of \$47 billion, indicating an annual shortfall of around \$35 billion.

In Tier 2, we will continue to explore China, Mexico, and South Africa, given their high emissions and emissions per capita among LMICs.

- **China:** China is the world's largest emitter, accounting for approximately 29.2% of global emissions as of 2024—more than the combined emissions of the next three highest emitters (U.S., India, and EU).³¹ While China's emissions are expected to decline in a business-as-usual scenario, it is projected to remain the largest emitter, accounting for 21% of global emissions by 2050.³² Despite a low GPEI score and challenges with direct grantmaking to Chinese nonprofits without a legally established domestic entity, two approaches stand out as feasible: (1) fund regranteeing organizations registered in China and collaborate with them to direct funding toward priority areas, and (2) provide China-specific restricted grants to international nonprofit organizations with legal entities in China. We estimate with low certainty that China faces a 33% shortfall relative to its annual climate finance need, equivalent to a significant absolute funding gap of \$322 billion per year. Finally, despite China's emissions profile, it received only 3% of total global foundation funding in 2024 and experienced a 30% decline in funding between

³⁰ Data excludes land use change emissions here and in the country-level descriptions below.

³¹ Based on data in Table 1. 2024 GHG emissions (million tCO₂e), shares in global emissions, changes relative to 2023, emissions per capita (t CO₂e/cap), and CAGR (1990-2024) (%) for countries and regions accounting for over 1% of global GHG emissions. [Crippa et al., 2025](#)

³² By 2050, China will account for 14.3 billion tCO₂e out of 67.2 billion tCO₂e of the world's emissions, the largest among all countries. [World Data Lab](#) (accessed on August 2026).

2023 and 2024.³³ Several funders we spoke with described a growing donor vacuum as others have exited the country for political reasons. Given China's outsized contribution to current and future emissions, and the availability of workable grantmaking channels, we think philanthropic climate funding there is significantly underweighted. We have therefore decided to explore grantmaking opportunities in China, beginning with a limited set of grants in 2026.

- **Mexico:** Mexico emitted 687 million tCO₂e in 2024, making it the 11th-highest global emitter. Mexico passes both of our scale criteria, indicating that it has both relatively high overall and per capita emissions among LMICs. Under BAU, the most emitting sector in 2050 is expected to be industry, with emissions of 468 million tCO₂e. We estimate with low certainty that annual climate funding in Mexico totals around \$2 billion to \$4 billion, while CPI's bottom-up climate finance need data suggests a yearly need of \$17 billion, indicating an annual shortfall of around \$13 billion.
- **South Africa:** South Africa emitted 570 million tCO₂e in 2024, making it the 17th-highest global emitter. Under BAU, the most emitting sector in 2050 is expected to be energy, with emissions of 312 million tCO₂e. CPI estimates that South Africa's annual funding need to achieve its net-zero goal by 2050 is \$31 billion, while its current yearly funding is around \$6 billion, indicating an annual shortfall of around \$25 billion.

As for Tier 3, Brazil, Malaysia, Pakistan, and Thailand remain of interest, particularly in the sectors that are on track to have the most emissions by 2050 (agriculture in Brazil, energy in Malaysia, agriculture in Pakistan, and industry in Thailand). Given that we have previously prioritized emissions from food systems and industry, we may favor opportunities in these countries in our other Giving Green philanthropic strategies.

Data Limitations

- Several sources either lack complete data on all countries or do not make data publicly available, so we exclude data for several countries that do not meet our early inclusion criteria. For example, we use data from World Data Lab to identify countries with high business-as-usual emissions in 2050, though given that the data required manual entry, we only entered data for countries in the top 50% of current LMIC emitters, which did not preclude this analysis but may prevent additional useful approaches to slicing the data.
- We lack data on the available climate finance and funding need for many countries, and the data we managed to identify for countries that stand out based on our "scale" assessment comes from multiple sources that may use different approaches. For instance, we used funding need data from CPI's Bottom-up Climate Finance Needs dataset—which collates climate finance needs data from countries' Nationally Determined Contributions (NDCs) and other official documentation—for several

³³ "Foundation funding to China decreased by 30% in 2024 but increased significantly to Europe (+90%), Africa (+30%), Brazil (+30%), and the United States (+22%)." [ClimateWorks Foundation, 2026](#)

countries, while we used other CPI data for countries where bottom-up data is not available or leads to misleading conclusions. Even if we had bottom-up data for all countries in our dataset, countries use different approaches to estimate their climate finance needs.³⁴ The lack of a globally accepted definition of climate finance needs therefore weakens our assessment.³⁵

Sector Prioritization in India and Indonesia

Based on our country prioritization analysis, we decided to focus on decarbonization in India and Indonesia in 2026. We then conducted a shallow country-sector assessment to identify sectors where philanthropic support can be especially impactful. We assessed sectors primarily based on the scale of current and future emissions, using funding need as a secondary criterion to assess whether there is a meaningful role for philanthropic capital and whether significant public and private financing gaps remain.

Scale of Emissions: To assess scale, we compiled country-sector-level data on current emissions and projected 2050 emissions in a business-as-usual scenario. We prioritized sectors with at least 500 million tCO₂e of emissions in 2024 or projected emissions in 2050 and with emissions projected to remain stable or increase through 2050.

Funding Need: To assess funding need, we consolidated data on known philanthropic funding from foundations, as well as estimates of annual climate finance gaps where available.³⁶ Since philanthropic funding from foundations was the only consistently available measure across sectors, we used it as a secondary screen, excluding sectors that received above-average philanthropic funding within the country.

The country-sector assessment and data sources for scale and funding need shared in the table below can be found in our [Country-sector Prioritization](#) spreadsheet.

³⁴ "Bottom-up climate finance needs: The climate finance required by countries to reach their national climate targets, as stated in official documents such as Nationally Determined Contributions (NDCs). These needs include both the finance required to be raised domestically and the financial support required from international (public and private) sources. While some countries estimate their climate finance needs using predictive models aligned to a 1.5°C pathway, in most cases, bottom-up needs are derived from a list of costed mitigation and adaptation measures or projects countries aim to implement." [CPI bottom-up climate finance needs data](#) (accessed July 2025)

³⁵ "While there is not yet a globally accepted official definition of "climate finance needs", CPI distinguishes between two types of needs..." [CPI bottom-up climate finance needs data](#) (accessed July 2025)

³⁶ We have low confidence in our annual climate finance gaps for Indonesia due to lack of recent estimations on the same.

Table 2: Country-sector assessment of India and Indonesia³⁷

Country	Sector	Scale		Funding need (uncertain)	
		GHG Emissions in 2024 (million tCO ₂ e)	Projected BAU GHG emissions in 2050 (million tCO ₂ e) ³⁸	Philanthropic funding relative to sector emissions (\$ per tCO ₂ e)	Annual Climate Finance Gap ³⁹
India	Power	2,232	2,391	0.02	\$120 billion to \$250 billion (44%-91%)
	Industry	344	1,637	0.01	\$18 billion (14%)
	Transportation	354	519	0.03	\$6 billion to \$86 billion (7%-90%)
	Buildings	256	546	0.04	Not available
	Agriculture	806	940	0.02	Not available
	Land use	731	46	0.02	Not available
Indonesia	Power	541	602	0.01	\$17 billion (91%)
	Industry	83	361	0.002	Not available
	Transportation	154	180	0.001	Not available
	Buildings	33	228	0.02	Not available
	Agriculture	143	174	0.04	Not available
	Land use	1,308	34	0.01	Not available

India Sector Prioritization

Prioritized sectors: We prioritized power sector decarbonization in India due to its large emissions impact and significant funding need. By 2050, the power sector is expected to

³⁷ Giving Green, [Country-sector Prioritization](#), 2026

³⁸ Country totals and rankings use World Data Lab's World Emissions Clock, which allows consistent comparison across countries. Sector-level figures, shares and trends use ClimateWorks data, which includes land-use emissions and projects more conservative 2050 emissions. Totals therefore differ between sources; all sector shares are calculated using ClimateWorks data. We use [ClimateWorks projections](#) to prioritize sectors within countries because we have greater visibility into and confidence in its methodology for sector-level projections than in the less transparent projections provided by World Data Lab.

³⁹ Annual Climate Finance Gap estimates are derived from the best available data. When data on both current and projected future climate finance flows are available, a range is reported. Typically, the lower bound is based on projected future flows, while the upper bound assumes that flows remain at their most recently reported annual levels. When data are available for only one approach, a single estimate is reported. Please see cell notes in the [Country-sector Prioritization](#) spreadsheet for detailed calculations.

contribute more than 2 billion tCO₂e. Although the sector has attracted substantial private-sector funding over the last five years, the scale of investment required remains significant, with an estimated climate finance gap of \$120 billion to \$250 billion per year. Given the scale of emissions and investment required, we see significant scope for philanthropic funding to support power sector decarbonization in India.

We are considering opportunities in the industrial sector more selectively, focusing on areas that align with our broader global industrial decarbonization strategy. Industrial emissions are expected to reach 1.6 billion tCO₂e by 2050 and are projected to grow nearly fivefold over the next 25 years, making industrial decarbonization increasingly important in India. The sector also faces a significant climate finance gap, estimated at \$18 billion per year, while ClimateWorks' philanthropic funding flow data indicates that it receives less than 0.9 cents per tCO₂e. Rather than treat industrial decarbonization as a broad sectoral priority, we focused on identifying specific opportunities where India's industrial transition aligns with and can contribute to our global industrial decarbonization strategy.

Deprioritized sectors: We deprioritized transportation, buildings, and land use, primarily due to their relatively low emissions impact—especially by 2050—compared to the power and industrial sectors. The transportation and buildings sectors also receive comparatively more philanthropic funding per metric ton of emissions and benefit from existing public- and private-sector momentum, reducing the potential additionality of philanthropic funding. Land-use emissions are projected to decline substantially by 2050, further limiting the case for prioritizing the sector.

Sectors to explore in the future: While we have not prioritized the agriculture sector, we plan to perform a shallow assessment to determine whether to develop a philanthropic strategy. We are interested in the sector because it is expected to contribute around 900 million tCO₂e annually by 2050. However, we are uncertain about the feasibility of reducing agricultural emissions at scale, given the sector's fragmentation and the challenges of driving widespread adoption of mitigation practices across India's farming systems. We want to better understand feasibility challenges and assess whether any neglected, high-impact, and scalable opportunities exist before prioritizing this sector.

Indonesia Sector Prioritization

Prioritized sectors: We prioritize power sector decarbonization in Indonesia due to its emissions impact and significant funding need. The power sector currently contributes around 540 million tCO₂e and is expected to remain at a similar level through 2050. The sector also has a substantial climate finance gap, estimated at \$17 billion per year, equivalent to around 91% of estimated financing needs. Given the sector's emissions scale and significant financing shortfall, we see scope for philanthropic funding to support Indonesia's power sector transition, particularly in areas where public and private capital alone may be insufficient.

Deprioritized sectors: We deprioritized transportation, buildings, and agriculture primarily because their emissions impact is relatively small compared with the power sector. Transportation, buildings, and agriculture each contribute less than 250 million tCO₂e by

2050. These sectors also appear to have a weaker case for prioritization given their smaller absolute emissions impact and, in some cases, relatively greater philanthropic funding per metric ton of emissions. We therefore do not see a strong case for treating these sectors as broad country-level priorities at this stage.

Sectors to explore in the future: We remain open to further exploring Indonesia's industrial and land-use sectors. Industrial emissions are projected to increase more than fourfold to around 360 million tCO₂e by 2050. Despite the low scale of emissions, this projected growth makes industrial decarbonization increasingly relevant over time. Given Indonesia's dependence on captive power and industrial growth, we want to assess potential dependencies between industrial and power sector decarbonization pathways. At the same time, philanthropic funding for industrial decarbonization is almost negligible. We therefore see potential for philanthropic intervention, but need to better understand the feasibility and evidence base before prioritizing the sector.

The land-use sector warrants further exploration because it currently contributes the largest share of Indonesia's emissions, at around 1.3 billion tCO₂e in 2024. However, projected emissions fall sharply to around 34 million tCO₂e by 2050, making the case for philanthropic intervention less straightforward than in the power sector. We want to better understand the drivers behind the projected decline and whether philanthropic funding could accelerate or lock in these reductions before deciding whether to prioritize the sector.

What Do We Recommend Funding in LMICs?

Based on the above country-sector prioritization, we want to advance decarbonization of the power sector in both India and Indonesia due to its significant impact on emissions and its foundational role in enabling a clean energy transition. A clean energy transition requires accelerated adoption of low-carbon and zero-carbon pathways for both power generation and end-use sectors, including industry, transportation, and buildings. As end-use sectors become increasingly electrified, decarbonizing power generation becomes essential to ensure that electrification translates into emissions reductions. We also prioritize industrial decarbonization in India due to its outsized impact on emissions and projected growth. Because the Indian and Indonesian governments recognize the importance of the green economy, and both countries have active nonprofit ecosystems with experience and expertise in this area, we believe increased philanthropic support can unlock significant progress.

Beyond our country-level prioritization, we also pursue a regional and multi-country strategy to derisk clean electricity investment across LMICs. Electricity demand in these countries is rising rapidly, but the capital needed to meet it with clean generation and supporting grid infrastructure is constrained by investment risks that recur across borders. Because those risks are shared—including among countries that philanthropy

rarely prioritizes—regional strategies can unlock investment at a scale that country-by-country efforts alone are unlikely to reach.

Decarbonizing India's Power Sector

Scale: High. India's power sector is the largest contributor to the country's emissions, accounting for roughly half of India's CO₂ as well as GHG emissions.⁴⁰ Annual emissions from the power sector are expected to increase from 2.2 billion tCO₂e in 2024 to 2.4 billion tCO₂e by 2050 in a business-as-usual scenario.⁴¹ The increase is driven by a rise in electricity demand, which is projected to quadruple by 2050 despite a rapid rise in renewable adoption.⁴²

Decarbonizing the energy system is central to India's economic development vision, *Viksit Bharat*.⁴³ The Government of India (GoI) has outlined an ambitious climate action plan, which includes targets such as reaching 500 GW of clean energy capacity by 2030 and achieving net-zero national emissions by 2070.⁴⁴ Between 2015 and 2022, India issued the highest number of climate policies among all countries: over 50 policies, ranging from production-linked incentive schemes to policies promoting solar panels.⁴⁵ In recent years, India has demonstrated strong progress on renewables: it ranks third globally in installed clean energy capacity with about 283 GW as of 2026, and is on track to achieve its commitment of 500 GW of non-fossil capacity by 2030.⁴⁶

⁴⁰ "The transition of the power sector in India is of particular importance given that it contributes to approximately 50% of the country's CO₂ emissions." [TERI, 2024](#)

⁴¹ 2024 data from EDGAR's consolidated spreadsheet with 'Annual GHG emissions by country and sector [1970-2024]'. [Crippa et al., 2025](#); 2050 emissions data based on BAU projections from [ClimateWorks Foundation](#).

⁴² Based on 1,541 TWh in 2024 to 6,544 TWh in 2050 in Table E.1: A snapshot of power sector by 2050 and 2070. [NITI Aayog, 2026](#). "The study estimates that the grid electricity generation need is likely to increase fourfold [...] driven by continued economic growth, strong industrialization, urbanization, rising per capita income, and the emergence of new demand drivers." [TERI, 2024](#)

⁴³ *Viksit Bharat 2047* is the Government of India's ambitious vision to transform the nation into a fully developed nation by 2047, marking the 100th year of independence.

⁴⁴ "The Government of India has articulated and put across the concerns of developing countries at COP26 to the UNFCCC held in Glasgow, United Kingdom. Further, India presented the following five nectar elements (Panchamrit) of India's climate action: 1. Reach 500 GW Non-fossil energy capacity by 2030; 2. 50% of its energy requirements from renewable energy by 2030; 3. Reduction of total projected carbon emissions by one billion tons from now to 2030; 4. Reduction of the carbon intensity of the economy by 45% by 2030, over 2005 levels; 5. Achieving the target of net-zero emissions by 2070." [Ministry of the Environment, Forest and Climate Change, 2022](#)

⁴⁵ "From 2010 to 2015, China issued the highest number of climate policies. But from 2015 to 2022, India took the lead by issuing more than fifty climate change policies. These ranged from production-linked incentive schemes to policies that encourage the use of clean energy products such as rooftop solar energy." [Sharma, 2024](#)

⁴⁶ "India ranks third globally in Renewable Energy Installed Capacity" [Ministry of New & Renewable Energy, 2026](#); "Govt. of India has set a target for establishing 50% cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030." [Ministry of Power, 2023](#); "So far, a total of 283.46 GW of capacity from non-fossil fuel sources has been installed in the country as on 31.03.2026." [Press Information Bureau, GoI, 2026](#)

Feasibility: High. Despite strong progress and ambition from Gol, several structural barriers constrain the pace and scale of power sector decarbonization. These include limited grid flexibility and transmission capacity, gaps in institutional and technical capacity at the state level to plan and implement the energy transition, high regional concentration of renewable generation capacity, underdeveloped non-utility-scale renewable energy and storage deployment models, and low levels of deployment of alternative generation pathways such as offshore wind, nuclear, geothermal, and geologic hydrogen. We think India has a strong nonprofit ecosystem with expertise and experience in technoeconomic modeling and power sector planning. Indian nonprofits also have a track record of providing technical assistance and building capacity across national and state governments, ministries, and other public institutions, positioning them well to address the challenges facing India's power sector.

Funding Need: Medium. We estimate that efforts to reduce India's power sector emissions receive an average of \$45 million in foundation funding per year, equivalent to 8% of total global philanthropic funding by foundations for power sector decarbonization.⁴⁷ Our qualitative assessment suggests that a significant share of this funding supports grassroots implementation of energy projects in India, while efforts to enable efficient transmission, distribution, and storage remain relatively neglected. Capacity building, evidence generation, and advocacy for policy reforms are also relatively underfunded.⁴⁸ Additionally, total public and private climate finance for India's power sector stands at roughly \$24 billion annually, only 9% of the estimated \$274 billion required each year to decarbonize the sector and achieve net-zero emissions by 2070.⁴⁹ Hence, we think efforts to reduce India's power sector emissions are underfunded relative to the scale of investment required.

We think the most promising philanthropic sub-strategies to decarbonize India's power sector include:

1. Advancing research and pilots to derisk underexplored deployment models, technologies, and geographies for scaling clean energy
2. Providing technical assistance to state utilities with policy design and planning to strengthen, expand, and modernize the power grid
3. Providing technical assistance and capacity building support to state governments and institutions for energy transition planning and implementation

⁴⁷ Based on Table 1. Known foundation funding by region, sectors and strategies, annual average, 2019 to 2023, USD millions. India received \$45 million in annual foundation funding for power sector decarbonization, out of \$572.4 million in total annual foundation funding for the sector globally. [ClimateWorks Foundation, 2024](#)

⁴⁸ "The energy sector, which receives the bulk of most funding across sectors, seemed most focused on implementation – that is funding moved towards deployment of solutions for end-beneficiaries (~39% for grassroots support) and testing out innovations in financing solutions, instead of evidence building." [India Climate Collaborative, 2024](#)

⁴⁹ "During FY 2020-22, tracked mitigation-related financial flows in India averaged INR 3,712 billion per year (approximately \$50 billion) [...] In terms of sectoral allocation, clean energy attracted the largest share of 47% of total flows [\$23.5 billion] [...] This gap [in the power sector] more than doubles by 2070 as financing requirements rise sharply to \$12.33 trillion [\$274 billion between 2025 and 2070]." [NITI Aayog, 2026](#);

4. Supporting research and pilots to accelerate adoption of electrification measures in the industrial sector

Our full assessment is in our strategy report on [Decarbonizing India's Power Sector](#).

Decarbonizing Indonesia's Power Sector

Scale: Medium. Indonesia's power sector is the second-largest contributor to the country's emissions after the land-use sector and accounts for a quarter of the country's GHG emissions, making it a critical lever for decarbonization.⁵⁰ Annual emissions from the power sector are expected to increase from 541 million tCO₂e in 2024 to 602 million tCO₂e by 2050 in a business-as-usual scenario driven by a continued rise in electricity demand, which is projected to triple by 2060.⁵¹

In recent years, Indonesia has signaled the ambition to decarbonize its economy with several presidential announcements indicating a full renewable energy transition alongside phasing out all fossil-fueled power plants in the next 10-15 years.⁵² In August 2025, President Prabowo announced an ambition to develop 100 GW of solar power in Indonesia by 2029, reportedly after meeting India's Prime Minister Narendra Modi.⁵³

While these high-level pledges may signal strong political intent, their translation into credible domestic policies has been lacking. Currently, Indonesia's power sector remains heavily reliant on coal, while clean energy plays a limited role, with less than 1 GW of solar capacity deployed as of 2025.⁵⁴

⁵⁰ Based on calculations from EDGAR. [Crippa et al., 2025](#); GHG emissions by sector, Indonesia, 2023. [Our World In Data, 2026](#); Emissions from the land use, land-use change, and forestry (LULUCF) sector account for about 50% of Indonesia's GHG emissions. Despite its significance, we deprioritized research on this sector this year due to uncertainty regarding the effectiveness of potential decarbonization approaches. The sector also receives substantially greater philanthropic support than other sectors (five times that of the power sector). We remain open to reassessing the decarbonization opportunities within the LULUCF sector in future years as the evidence base and intervention landscape evolve.

⁵¹ 2024 data from EDGAR's consolidated spreadsheet with 'Annual GHG emissions by country and sector [1970-2024]'. [Crippa et al., 2025](#); 2050 emissions data based on BAU projections from [ClimateWorks Foundation](#); "Based on electricity demand growth in the National Electricity Plan (RUKN). Demand grows from 539 TWh in 2025 to 1813 TWh in 2060 in chart "RUKN's electricity demand and per capita electricity consumption aligned with Nation Energy Plan". [PLN, 2025](#)

⁵² "At the 2024 G20 Summit, President Prabowo announced plans to phase out all fossil-fueled power plants within 15 years and develop 75 GW of renewable energy capacity. He later reiterated this goal alongside Brazilian President Lula, suggesting Indonesia could achieve 100% renewable energy within 10 years, sooner than the initial projection of 2040. In subsequent addresses, Prabowo emphasized Indonesia's commitment to a full renewable transition by 2035." [IESR, 2026](#)

⁵³ "President Prabowo Subianto delivered a major directive in August 2025 regarding an initiative to build 100 GW of solar power plants. This figure is not merely a capacity target but a reflection of a long-term vision to drive the energy transition, expand reliable electricity access, and build the foundation of a national clean energy industry." [IESR, 2026](#); "After meeting India's PM Narendra Modi last year, President Prabowo Subianto went home and pledged to add 100 GW of solar energy into Indonesia's energy mix in the following decade." [The Reformist, 2026](#)

⁵⁴ Based on 2024 electricity data for Indonesia. [EMBER, 2025](#)

Feasibility: Medium. Indonesia's limited progress on renewables stems from substantial institutional barriers to power sector decarbonization. Existing policy and regulatory frameworks offer artificial cost advantages for coal mining and power generation, distorting market economics and making renewable alternatives less financially attractive.⁵⁵ The status quo is further reinforced by the country's heavy economic reliance on coal, the deep-seated interests of political actors in the coal industry, and state ownership, monopolization, and centralization of the electricity grid under Perusahaan Listrik Negara (PLN)—the state-owned electric utility company.⁵⁶ In response, Indonesia's nonprofit ecosystem is becoming more sophisticated in addressing these sticky political economy challenges. In just the last two years, we have seen a shift in existing nonprofits and an emergence of new nonprofits that take an insider advocacy approach to demonstrate the economic benefits of decarbonization in driving industrial competitiveness, attracting foreign investments, and reducing government costs.⁵⁷ Other nonprofits are also leveraging the bargaining power of industrial and commercial—as well as subnational—stakeholders to put pressure on policymakers.⁵⁸ Hence, we see a high-leverage opportunity to support Indonesia's evolving climate nonprofit ecosystem where the marginal impact of decarbonization is significant given the country's dependence on coal.

Funding Need: High. We estimate that efforts to reduce Indonesia's power sector emissions receive an average of \$8 million in foundation funding per year, equivalent to 1.4% of total global philanthropic funding by foundations for power sector decarbonization.⁵⁹ Funders have taken a diversified approach to support power sector decarbonization, including strengthening market and policy enablers for renewables, developing just transition strategies, advancing sustainable finance for clean energy deployment, engaging corporates and businesses to drive deployment, and supporting

⁵⁵ "Coal has long been perceived as the cheapest and most accessible source of electricity, largely due to Indonesia's abundant coal reserves, regardless of the falling costs of renewables [...] because coal plants receive subsidies, fixed contracts, & preferential dispatch rights. These market distortions prevent planners & policymakers from recognizing the true costs of the national energy economy, making it increasingly difficult for clean energy to compete with coal." [IEEFA, 2025](#)

⁵⁶ "With a young coal fleet, a high share of coal in the energy mix and local economies in coal regions highly dominated by the mining industry, the country ranks highest in the world in terms of exposure to the effects of a coal phase out." [Wuppertal Institute, 2025](#); "Since Indonesia became a democracy, business elites have increasingly moved into formal political office, transforming state-business relations from hierarchical patronage to a more fused configuration of public authority and private capital." [Apriliyanti et al., 2026](#); "PLN does not operate independently. Its plans, priorities and prices are politically determined. Although PLN is the main actor in the electricity sector, the rules of the game are set by the ministries, which align with the President's will and priorities." [Apriliyanti et al., 2024](#)

⁵⁷ Informed by our discussions with other philanthropic funders and nonprofits in Indonesia as well as preliminary engagements with newly incubated nonprofits.

⁵⁸ For example, WRI Indonesia has built strong engagements with industry and trade associations to push for favorable policies for renewable energy adoption for industrial customers. Indonesia's key domestic funder in the energy transition space, ViriyaENB has a strong subnational focus. Similarly, IESR is increasingly focusing on subnational action to influence national decisionmakers.

⁵⁹ Total foundation funding to the power sector was estimated to be \$572 million annually between 2019-2023. Out of this funding, \$7.9 million was directed annually to Indonesia's power sector. [ClimateWorks Foundation, 2024](#)

subnational action. However, our qualitative assessments suggest a funding gap for insider advocacy on regulatory reform and sustained engagement with key decision-makers to build political will. Additionally, total public and private climate finance for Indonesia's power sector decarbonization stands at roughly \$1.8 billion annually, just 9% of the \$19 billion estimated to be required each year to meet the sector's 2030 decarbonization goals on a net-zero emissions pathway.⁶⁰ Hence, we think efforts to reduce Indonesia's power sector emissions are severely underfunded relative to the scale of investment required.

We think the most promising philanthropic sub-strategies to decarbonize Indonesia's power sector include:

1. Advancing policy and regulatory reforms that accelerate clean energy deployment
2. Supporting evidence generation (research and pilots) to derisk clean energy and transmission projects
3. Providing technical assistance and capacity-building support to high-growth industrial provinces with energy transition planning and implementation
4. Mobilizing the corporate sector to drive clean energy market and policy reform via industrial and commercial customer coalitions
5. Advocating for policy reforms to reduce subsidies and incentives for coal and facilitate retirements and repurposing of coal assets

Our full assessment is in our strategy report on [Decarbonizing Indonesia's Power Sector](#).

Derisking Clean Electricity Investments in LMICs

Many barriers to attracting investment are shared across LMICs, especially in countries that philanthropy rarely prioritizes and therefore are unlikely to attract dedicated support on their own. This workstream takes a regional or multi-country approach intended to complement our country- and country-sector prioritization approach, allowing us to have a greater impact on emissions across LMICs.

Scale: High. Electricity demand is quickly growing in LMICs, and as a result, electricity generation is projected to double from 7,850 TWh to 18,453 TWh between 2024 and 2050 under current policies.⁶¹ New factors, however, such as data center build out and the

⁶⁰ "Indonesia's power sector requires a total investment of \$246 billion or \$19 bn annually to achieve 2030 climate target, according to Indonesia Third Biennial Update Report Under the United Nations Framework Convention on Climate Change (2021). In 2019-2023, total reported investment in Indonesia's power sector reached USD 38.02 billion [...] FF technologies retained the largest share of investment (62%), more than twice the investment in renewable energy (RE). Meanwhile, financing on RE totals to USD 8.85 billion, contributing 23% to the overall investment in the power sector within the same period [...] In RE, Geothermal and Hydropower dominated, accounting for 72% of the RE financing." [CPI, 2025](#)

⁶¹ Data for Africa, Central and South America, Eurasia, and South Asia. These categories were selected to best cover most LMICs but do include some high-income countries (HIC), meaning the total could be slightly lower. We excluded China, Japan, and Russia but were unable to obtain data for the other HIC (Australia, Korea, New Zealand, Singapore, Chile, Costa Rica, Guyana, Panama, and Uruguay). Calculations based on the [IEA, 2025\(a\)](#) data can be found [here](#).

electrification of economic sectors, could push electricity consumption even further. We estimate that by 2050 annual electricity generation in LMICs could realistically reach 23,000 TWh with emissions growing from 4 billion tCO₂e per year in 2024 to 6.6 billion tCO₂e per year by 2050.⁶² In order to meet this growing demand while also reducing emissions, LMICs will need to attract upwards of \$1 trillion in capital per year by 2035 for clean energy projects and necessary grid infrastructure.⁶³ Current total investments into LMIC clean energy and necessary grid infrastructure sit around \$380 billion per year, meaning LMICs will need to attract between three and four times the amount of current investment in the next 10 years to stay on track with 2050 net-zero targets.⁶⁴

Feasibility: Medium. The challenge, however, is that most LMICs face large barriers to attracting available capital due to high investment risks associated with their grids and electricity markets. We identified three major sources of risk across LMICs that hold investors back: a lack of well-planned and modern grid infrastructure, mismanaged and unreliable grids, and the absence of a large and predictable pipeline of bankable projects. While some of these risks will require heavy in-country efforts, such as passing policies, we found four philanthropic sub-strategies at a regional and multi-country scale that can reduce all three risks and support clean energy deployment.

Funding Need: High. We calculate with low confidence that our four prioritized sub-strategies received \$39 million in philanthropic funding in 2024, or roughly 18% of philanthropic funding for clean electricity in LMICs.⁶⁵ Comparing these figures to their share of electricity emissions in 2025 indicates that LMICs received 5 cents per tCO₂e in philanthropic funding, while the U.S. received 22 cents per tCO₂e.⁶⁶ Funding from HICs to

⁶² We calculated the average carbon intensity of LMICs to be 518g/kWh in 2025. We used data from [Our World in Data, 2026](#) and LMIC country determinations used by the [World Bank](#). We did not include China, however, as we view this to be out of scope of this strategy. Calculations can be found [here](#). The carbon intensity was then multiplied by the total generation in 2024 calculated on [IEA, 2025\(a\)](#) data.

To calculate potential generation and likely business-as-usual emissions in 2050, we used data from ClimateWorks Foundation.

⁶³ 1) [CPI & GFANZ, 2025](#) finds that CapEx for clean energy infrastructure in EMDEs will need to grow from \$380 billion in 2025 to \$1,300 billion a year by 2035 to stay on track with net-zero by 2050 targets. These numbers exclude China. 2) [IEA & IFC, 2023](#) finds that EMDE clean energy investments will have to grow from \$262 billion in 2022 to \$1,370 to \$1,860 billion per year by 2035. This similarly excludes China. 3) [GRA, 2025](#) finds that to stay on track with IRENA's 1.5°C goal and triple the deployment of renewables, financing for solar and wind projects in EMDEs would have to increase from \$109 billion in 2024 to \$3,768 billion between 2024 and 2030, or \$630 billion per year.

⁶⁴ [CPI & GFANZ, The Clean Energy Equity Investment Gap \(2025\)](#) finds that CapEx for clean energy infrastructure in EMDEs will need to grow from \$380 billion USD in 2025 to \$1,300 billion USD a year by 2035 to stay on track with net-zero by 2050 targets. These numbers exclude China.

⁶⁵ Using data from [ClimateWorks Foundation, 2026](#) we calculated that \$211.5 million in philanthropic funding went to clean electricity in LMICs. Further explanation can be found in the next footnote.

⁶⁶ [ClimateWorks Foundation, 2026](#) found that 22.5% (\$840 million) of the \$3,740 million in known global climate mitigation foundation funding in 2024 went to clean electricity. We then applied that share to the funding that went to LMICs (\$940 million) and to the U.S. (\$1.7 billion), which assumes both regions allocate a similar share of their climate funding to clean electricity as the global rate.

LMICs has also been declining, and the U.S. Agency for International Development's (USAID) dismantling in 2025 removed a critical source of technical assistance, widening the gap when support needs to grow substantially. Based on this funding data, we think efforts to derisk clean electricity in LMICs are severely underfunded.

We think the most promising philanthropic sub-strategies to derisk clean electricity in LMICs include:

1. Developing and aggregating knowledge to improve regional capacity
2. Creating strong project pipelines
3. Improving utility operations
4. Implementing grid planning and reliability best practices

Our full assessment is in our strategy report on [Derisking Clean Electricity Investments in LMICs](#).

Next Steps

We intend to leverage our country and country-sector prioritization approach to inform the next phase of our grantmaking activities in LMICs. Through this work, we aim to expand the Giving Green Fund's allocation to high-impact opportunities in LMICs over time. Areas we are likely to explore in 2027 include:

- **China:** Our most immediate priority is China, where we plan to undertake a more in-depth assessment in 2027, building on the limited set of food- and industry-focused grants we are making in 2026.
- **Additional country and sector opportunities:** We will assess other potentially high-impact sectors in India and explore grantmaking opportunities in other Tier 1 and 2 countries.
- **Climate mitigation, health, and development:** We will continue an early-stage assessment of impactful and cost-effective mitigation opportunities with significant health and development co-benefits.
- **Cross-program collaboration:** We anticipate greater collaboration among research leads across program areas. Our work this year provides a model for developing country-level assessments jointly across relevant global strategies. We intend to apply this approach to other opportunities where country-level priorities intersect with an existing Giving Green global strategy.

We have not verified that assumption. Applying it gives \$211.5 million for LMICs and \$382.5 million for the U.S. We then divided each figure by 2025 electricity generation emissions for LMICs (4 billion tons of CO₂) and the U.S. (1.7 billion tons of CO₂). Emissions data was calculated using [Our World in Data, 2026](#) and our calculations can be found [here](#).

Acknowledgments

This work has greatly benefited from the feedback provided by a variety of advisors, experts, and reviewers throughout the research process; Giving Green is grateful for those who shared their time, experience, and ideas. We would especially like to acknowledge the principal reviewers of our strategy reports—Astha Gupta, Husni Mubarak, and Kartikeya Singh—for reviewing our strategy reports during their final stages of development. All opinions remain those of Giving Green alone, and any remaining errors are our own.



Giving Green was founded to help donors cut through the complexity of climate philanthropy and direct their resources for maximum impact.

Our founder, Dan Stein, Ph.D., spent 15 years developing evidence-based strategies in global philanthropy. He saw people eager to fight climate change but paralyzed by its scale. In 2019, with support from IDinsight, he launched Giving Green to rigorously evaluate solutions and share clear guidance.

What began as a side project is now a team directing tens of millions of dollars to high-impact initiatives. Our success is shared—with donors ranging from kids donating allowances to retirees investing in a better future. We believe anyone can start small and still make a huge difference.

Thank you for joining us on the path to net zero.
Together, we keep moving forward.