Climate Change and Development Series

OVERVIEW

REALITY CHECK

Lessons from 25 Policies Advancing a Low-Carbon Future

WORLD BANK GROUP

Overview

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Lessons from 25 Policies Advancing a Low-Carbon Future

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Climate Change and Development

The Climate Change and Development Series was created in 2015 to showcase economic and scientific research that explores the interactions between climate change, climate policies, and development. The series aims to promote debate and broaden understanding of current and emerging questions about the climate-development nexus through evidence-based analysis.

The series is sponsored by the Sustainable Development Vice Presidency of the World Bank, and its publications represent the highest quality of research and output in the institution on these issues. The group is committed to sharing relevant and rigorously peer-reviewed insights on the opportunities and challenges present in the climate-development nexus with policy makers, the academic community, and a wider global audience.

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Foreword

In the past year, records for extreme weather events continued to be broken, as our changing climate swept in a new round of storms, heat waves, flooding, and drought, bringing life-changing devastation to millions of people. Although climate change affects every corner of the world, poor people and developing countries are more severely affected by its negative effects. In the summer of 2022, flash flooding in Pakistan triggered by glacial melt and monsoon rains submerged vast swaths of the country, providing a devastating example of the magnitude of climate-induced destruction. As of October 2022, around 33 million people—that is, one in seven of Pakistan's population—had been affected. For countries like Pakistan, climate change is a serious risk multiplier that hinders sustainable and inclusive development and will do so more in the future.

Eight years after the historic signing of the Paris Agreement, governments across the globe face two mutually dependent challenges: investing in resilience to ensure a disaster-resistant future and accelerating the decarbonization of energy and land-use systems. Without decarbonization, global emissions will continue to march upward, exacerbating climate risk for all countries.

The good news is that the number of countries announcing pledges to achieve net zero emissions continues to grow. Looking back over the past three decades, countries have already made significant efforts to decarbonize. Since the Intergovernmental Panel on Climate Change published its first assessment report in 1990, individual policies and regulations around the world have sparked myriad decarbonization initiatives.

Now, as we forge a pathway to reduce the addition of greenhouse gases to net zero, we need to identify the policies that have provided the most effective solutions. This World Bank report, *Reality Check: Lessons from 25 Policies Advancing a Low-Carbon Future,* fills a critical gap in the research to date, documenting policy trends for decarbonization, with a series of case studies across sectors and geographies. The 25 case studies presented here provide country context and policy or project details, examine results and impacts, and outline key takeaways and lessons learned for enabling further reductions around the world.

The case studies outlined in this report give us reason to hope. The rapid expansion of solar power in India, a growing market for climate-smart agriculture in China, greener financial systems in Colombia, and the removal of fossil fuel subsidies in the Arab Republic of Egypt are the result of well-designed policies and successful implementation and provide evidence that, with the right mix of political support and

policy design, we can decarbonize development. These policies are not necessarily the first-best policies advocated by analysts and economists, and some may not be best practice. But they are real policies that have been implemented in countries with very different income levels and political contexts, and they provide many insights on how countries can design and implement climate policies, and on the compromises that doing so can require.

The World Bank is sharing these case studies to inform current and future climate actions, but our work does not stop here. These case studies offer a useful snapshot of the current policy landscape, but they will be updated over time as policies evolve and improve and, hopefully, become more ambitious and more efficient. The case studies presented here also highlight a big gap in knowledge: most of them do not have a rigorous ex post assessment of their outcomes and performance, which would help countries improve design and learn from each other. More work is definitely needed to make sure we learn from the early movers, and this will be a key priority for the World Bank moving forward.

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Introduction and Overview

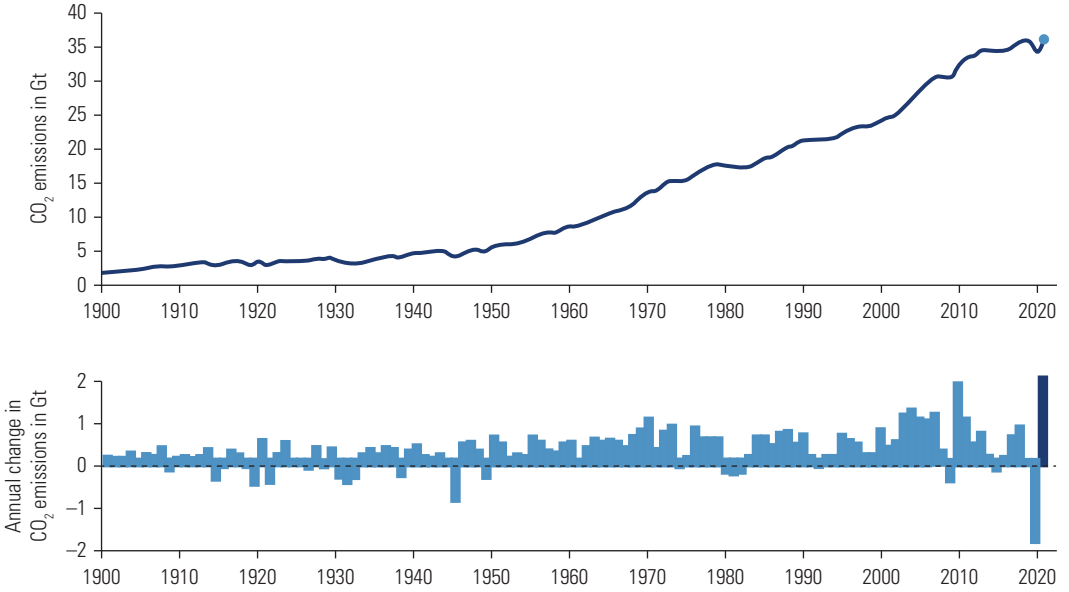
Addressing climate change is no longer about high-level commitments: it is about transformative policies and action. While countries' pledges and targets are increasingly consistent with global objectives, the world is still on track for unprecedented climate change. The 2018–22 global mean temperature average is now estimated to be 1.17 ± 0.13 degrees Celsius (°C) above the 1850–1900 average, rapidly approaching the 1.5°C target of the Paris Agreement (United Nations 2022).

Greenhouse gas (GHG) emissions continue to rise. Although global energy-related carbon dioxide (CO_2) emissions dipped slightly in 2020 due to the COVID-19 (coronavirus) pandemic, they rebounded in 2021, reaching the highest-ever annual level of 36.3 gigatons (Gt) (figure O.1). Models estimate that current policies are insufficient and would likely lead to a temperature increase of 2.6–2.9°C.

To meet their commitments and achieve the Paris Agreement's objective, countries will need ambitious packages of new policies that catalyze and coordinate the full decarbonization of their economies. They will need to invest in decarbonizing the electricity supply; electrifying, substituting fuel, and taking efficiency measures in transport, buildings, and industry; adopting low-carbon agriculture practices; and protecting and expanding forests and other natural carbon sinks (Kuramochi et al. 2018). Implementing such policies will require changes in infrastructure, lifestyle, and behavior and will include actions such as switching cars for public and active transport modes, designing low-carbon livable cities, adopting plant-based and healthier diets, improving material use and recycling, implementing circular economy principles, and preparing current and future workers for the green economy.

The economic benefits of following such a low-carbon development pathway are increasingly evident, but the transition requires policy reforms that face hard institutional and political economy barriers. The World Bank's new Country Climate and Development Reports (CCDRs) show that, while following a low-carbon development pathway requires an additional annual investment of 1 to 10 percent of gross domestic product (GDP) for a select set of countries, the net economic benefits of the transformation over the next several decades would be positive (World Bank 2023). Investing in decarbonization could add more than 60 million net new jobs globally (ILO 2012). However, the transition toward low-carbon pathways faces important barriers, including the need for large upfront investments, the lack of institutional capacity, significant distributional impacts (especially in coal regions), and challenging political economy issues.

FIGURE O.1 Total Annual Global CO_2 Emissions from Energy Combustion and Industrial Processes and Their Annual Change, 1900–2021



Source: IEA 2022.

Note: CO_2 = carbon dioxide; Gt = gigatons.

The scale of the climate challenge often appears daunting, but the rich history of climate policy implementation experiences across countries provides important lessons and pointers for how to advance policies in different contexts. Over the past three decades, countries around the world have introduced a variety of different climate policy responses. While high-income countries (HICs) pioneered the implementation of many climate policies in earlier periods, middle-income countries (MICs) and low-income countries (LICs) are increasingly active. We now have many examples of climate policies being implemented in a variety of different economic, cultural, and political contexts.

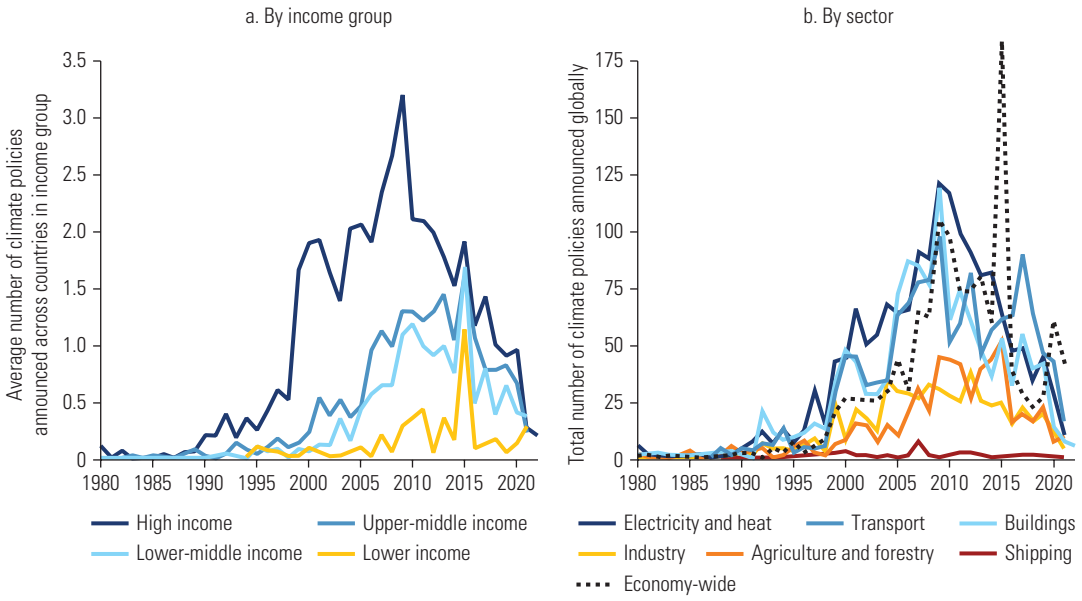
Aiming to leverage learnings from the past to inform future policy design, this report provides an overview of past climate change mitigation policy trends and discusses insights from case studies across the world. It builds on two sources. The first is the New Climate Institute's Climate Policy Database (New Climate Institute 2022), which allows for an exploration of global trends in climate change mitigation policies across time, countries with different income levels and contexts, and different sectors. The second is a set of 25 decarbonization policy case studies collected for this report that covers countries at all income levels. This report focuses on climate change mitigation or decarbonization policies, leaving policies to advance adaptation and resilience for a future analysis.

According to the Climate Policy Database, countries have introduced more than 4,500 climate policies over the past three decades (figure O.2). Two United Nations Framework Convention on Climate Change (UNFCCC) COP events—Copenhagen in 2009 and Paris in 2015—were major catalysts for the announcement of climate policies, even though the number of policies announced has fallen over the years. In line with their emissions contributions, higher institutional capacity, and large financial resources, HICs have tended to move sooner on climate policy, but other countries are increasingly coming to the table, especially big emitters like China, India, and Indonesia. In terms of sectors, climate policies relating to electricity and heat tend to account for the largest share of country climate policies, but agriculture and forestry-related climate policies are often prevalent in LICs. Although the announcement of sector-specific climate policies has slowed down, economy-wide policy announcements remain high.

The objective of this report is not to draw conclusions around which policies are most effective or efficient in reducing emissions; rather, it aims to provide examples of real-world implementation of climate policies in multiple sectors, mobilizing various instruments. They are not necessarily first-best policies or even best practices: to make them feasible, governments often had to compromise with institutional capacity constraints or other policy objectives. Some are just a first step, and governments expect to adjust their design as they draw lessons from them.

To organize the analysis and the case studies, this report relies on a simple typology for decarbonization policies. This is derived from the 2015 World Bank report

FIGURE O.2 Climate Policy Announcements, by Country Income Group and by Sector



Source: World Bank calculations, based on data from the Climate Policy Database 2022.

Decarbonizing Development: Three Steps to a Zero-Carbon Future (Faye et al. 2015), which highlighted the need for (1) a strategic approach that considers the end goal of full decarbonization of the economy to define short-term priorities; (2) packages of policies that can target the many market and government failures that impair decarbonization, including—but going beyond—carbon externality; and (3) a strong focus on the distributional impacts and political economy barriers. Building from this approach, we classify policies into five categories:

- **Planning for a future with zero net emissions.** The first step is to set up long-term objectives—for instance, to 2050—that are consistent with the end goal of full decarbonization. From there, countries can design sector-specific, shorter-term targets—to 2025 or 2030—and establish a way to track progress over time. Monitoring, auditing, reporting, verifying, information sharing, and training are all crucial for the success of climate policies. Building in such learning and feedback channels allows countries to identify and respond to emerging issues.
- **Getting the prices right.** Countries will need to implement policy reforms, including on pricing and taxes, to develop economic incentives that encourage efforts toward decarbonization. Encouragingly, the world is making progress on market-based mechanisms such as carbon pricing schemes and emissions trading systems, and despite being politically unpopular, some countries are also managing to reform fossil fuel subsidies. However, with less than 4 percent of global GHG emissions priced at or above the range required to meet climate stabilization goals outlined in the Paris Agreement, there is still much work to be done.
- **Facilitating, enabling, and triggering sectoral transitions.** A climate policy package will often incorporate various policies and actions—ranging from labels and regulations to subsidies and direct investments—to trigger transitions in key systems, such as the energy or food systems. They do so by providing support to certain technologies and practices (often referred to as "*supply-push*") or by creating a demand for them and facilitating their diffusion (often referred to as "*demand-pull*"). Supply-push policies reduce the cost of technology development through funding for research, development, and demonstration activities, while demand-pull policies stimulate demand for innovative solutions through financial incentives for adopters or by developing codes and standards, among other approaches.
- **Getting the finance flowing.** To support decarbonization efforts around the world, climate finance needs to quadruple by 2030. Policies to both grow and green the financial pie will be crucial to scaling up necessary resources. Policies to incentivize and attract financing and involvement from the private sector will be particularly important as sources of public finance are highly constrained. In addition, policies to encourage green investment and manage climate-related risks (such as climate stress tests and improved governance and disclosure) will be key.
- **Ensuring a just transition.** Where climate policies create winners and losers, governments need to ensure that the most vulnerable populations are protected.

Effective civic engagement, communication, and active management of distributional impacts can help build support for unpopular policies.

Table O.1 summarizes the case studies explored in this report and classifies them within these five policy categories. It highlights the diversity of policies implemented in various countries across income levels and with diverse sectoral focus, including economy-wide policies. It further highlights the corresponding policy instruments used for the case studies, primary policy objectives, cobenefits incurred through policy implementation, and their political economy considerations.

With a few exceptions, the case studies discussed in this report do not offer an ex post assessment of their results and impact. This is due to either a lack of data or methodological challenges in causally linking policy interventions to observed emissions changes. It is also because emission reductions are not always the best result indicator. For instance, some policies are critical enablers for further climate action without necessarily reducing emissions directly. Climate change framework laws, power sector reforms, green skill development programs, and land tenure regularizations do not immediately reduce emissions. Nevertheless, these actions play a critical role in coordinating action across ministries, enabling private investment, facilitating the transition of affected workers, and enforcing policies to stop deforestation. Multiple indicators are needed to track the results and performance of climate policies beyond their direct effects on GHG emissions.

Every country has unique policy requirements based on its industrial structure, economic priorities, political system, and national circumstances. As a result, determining the appropriate national policy package involves understanding its specific needs and contexts and how best to implement policies to achieve the desired outcome. There is no unique best practice or policy recommendation that can be derived from these examples.

Even without an ex post impact assessment, every case study in this report offers valuable learnings and insights about the process through which countries have implemented policies or instruments. Each case study (1) examines the country context, including the rationale behind the policy and how it has been presented and communicated; (2) describes the policy and its design; and (3) discusses identified results and impacts, including necessary compromises in policy design. The case studies conclude with a set of key takeaways, focusing on how to navigate design and implementation challenges.

There are three main takeaways from the analysis. First, countries have introduced a vast number of climate policies over the past few decades across most sectors and geographies. Sector-specific policies are often the first to be implemented, but they are gradually being supplemented with economy-wide approaches. Key policies—such as removing fossil fuel subsidies and carbon pricing—are progressing, but there is some distance to go before they make a significant contribution to decarbonization.

TABLE O.1 Policies and Approaches Examined in the 25 Case Studies in This Report

Case study	Policy instrument/program details	Primary objectives and cobenefits	Political economy considerations
Planning for a future with zero net emissions			
1. Costa Rica *Economy-wide*	Long-Term Strategy and National Decarbonization Plan	**Primary objectives:** Decarbonize all sectors; governance **Cobenefits:** Macroeconomic benefits: employment; poverty reduction	Policy development process strongly engaged technical and nontechnical stakeholders, including for climate justice and just transition considerations
2. Indonesia *Agriculture*	Moratorium on New Forest Concessions (2011) and Forest and Peatland Restoration Program (2016) as part of REDD+ strategy	**Primary objective:** Reduce deforestation **Cobenefits:** Biodiversity conservation; climate change mitigation; water conservation	Includes a feedback and grievance redress mechanism
3. United Kingdom *Economy-wide*	UK Climate Change Act (2008)	**Primary objectives:** Decarbonize all sectors; economy-wide resilience and adaptation; governance **Cobenefits:** Collaboration and knowledge-sharing	Act adopted through political consensus and strong civil society engagement; continued public engagement to ensure accountability from the government
Getting the prices right: economy-wide policies to promote structural change			
4. Canada *Economy-wide*	British Columbia carbon tax	**Primary objectives:** Climate fiscal policies; decarbonize all sectors **Cobenefits:** Economic growth; reduced income inequality; positive impact on aggregate employment	Shifted tax burden away from labor and households; included revenue recycling to address distributional impacts; conducted regular public outreach
5. China *Economy-wide*$	National emissions trading system (2021)	**Primary objectives:** Decarbonize all sectors; governance; energy efficiency **Cobenefits:** Reduced air pollution	Included stakeholder engagement and capacity building
6. Egypt, Arab Rep. *Energy*$	Energy subsidy reform with support from WB and Energy Sector Management Assistance Program (2014–16)	**Primary objectives:** Improve macroeconomic and enabling environment **Cobenefits:** Reduced GHG emissions; growth of solar and wind power generation; creating fiscal space for social spending; reduced air pollution	Included a public outreach campaign; strengthened social protection mechanisms; used targeted mechanisms with cash transfers; used fiscal savings to increase health and education spending

Note: **$** = Case studies with a strong link to private sector finance. Countries shaded green = high-income countries; orange = upper-middle-income countries; yellow = lower-middle-income countries; blue = low-income countries.

(Continued)

TABLE O.1 ***continued***

Case study	Policy instrument/program details	Primary objectives and cobenefits	Political economy considerations
7. European Union *Economy-wide*	EU Carbon Border Adjustment Mechanism (October 1, 2023)	**Primary objectives:** Reduce the risk of carbon leakage by ensuring that the price of imported goods reflects their carbon footprint **Cobenefits:** Promoting fair competition; encouraging global emission reductions; incentivizing companies to adopt cleaner technologies; and generating revenue for the EU's climate initiatives	Balancing different member states' and sectors' interests; addressing concerns of trade partners and WTO compliance; managing the potential impact on consumer prices; and ensuring the effectiveness of the mechanism in achieving its climate goals
Facilitating, enabling, and triggering sectoral transitions (technology support policies)			
8. Japan *Industry*	Act on the Rational Use of Energy (1979)	**Primary objective:** Increase energy efficiency **Cobenefits:** Resource productivity	Making Japan less reliant on imported energy resources (and vulnerable to price fluctuations and supply disruptions), helping bolster Japan's economic competitiveness; also includes provisions for promoting the use of energy-efficient technologies and practices in industry, which can help reduce costs and enhance productivity
9. Mexico *Municipal solid waste*[$]	The Monterrey waste-to-energy project demonstrated an institutional and management framework for LFG capture and use at an existing facility turning waste into energy	**Primary objectives:** Waste management; reduce methane emissions **Cobenefits:** Public cost savings; generated carbon credits; avoided pollution (clean energy); community benefits from clean and cheaper electricity	The government provided financing and regulatory support to help ensure its success; the involvement of the private sector has been critical in ensuring the project's financial viability and long-term sustainability; community involvement has helped ensure that the project meets the needs of locals and addresses their concerns
10. Brazil *Agriculture*	Plan for the Prevention and Control of Deforestation in the Legal Amazon, enforcement of the Forest Code, and launch of Deforestation Detection in Real Time satellite system for the reduction in deforestation	**Primary objectives:** Reduce deforestation **Cobenefits:** Reduced GHG emissions; increased biodiversity; and ecosystem services	Multistakeholder engagement including monitoring, environmental control and accountability, land use, creation of protected areas, and promotion of sustainable production activities, particularly with farmers, who form a large special-interest group

Note: **$** = Case studies with a strong link to private sector finance. Countries shaded green = high-income countries; orange = upper-middle-income countries; yellow = lower-middle-income countries; blue = low-income countries.

(Continued)

TABLE O.1 ***continued***

Case study	Policy instrument/program details	Primary objectives and cobenefits	Political economy considerations
11. Sahel Region *Agriculture*	Low-cost technologies and indigenous practices coupled with information and training to improve soil quality and agricultural outcomes	**Primary objectives:** Climate-smart agriculture **Cobenefits:** Carbon sequestration; socioeconomic outcomes; improved food security	Engaged local communities via information and training; included cash transfers
12. Egypt, Arab Rep. *Transport*	Egypt Vehicle Scrapping and Recycling Program (2008)	**Primary objectives:** Decarbonize transport **Cobenefits:** Reduced air pollution; improved traffic safety; economic growth; job creation	Offered financial incentives for owners to scrap their old vehicles and purchase new ones, as well as provided support for the development of local recycling facilities
13. Peru *Transport*	Several policies that promoted infrastructure development plans and investment to improve bicycle adoption	**Primary objectives:** Decarbonize transport; improve air quality; improve urban planning **Cobenefits:** Economic savings; social and health benefits	Lima government officials organized knowledge exchange programs; representatives from civil society, media outlets, and business chambers participated
14. South Africa *Transport*	Launched a Bus Rapid Transport strategy in 2007 with recent updates and the Integrated Public Transport Network Strategy in 13 cities	**Primary objectives:** Decarbonize transport; improve public transportation safety and efficiency **Cobenefits:** Reduced GHG emissions; reduced air pollution; reduced fuel consumption	Pilot supported by business and consulting services facilitated by the city
15. Türkiye *Buildings*	Launched the Turkish Energy Performance of Buildings Regulation or "Binalarda Enerji Performansı Yönetmeli" to improve energy efficiency in public building projects	**Primary objectives:** Green buildings; energy efficiency **Cobenefits:** Replicated in the private building market	Included training for energy auditors, design companies, and construction firms to learn from early experiences, share good practices, and build market capabilities; will share knowledge with market actors to facilitate replication

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(Continued)

TABLE 0.1 ***continued***

Case study	Policy instrument/program details	Primary objectives and cobenefits	Political economy considerations
Facilitating, enabling, and triggering sectoral transitions (demand support policies)			
16. India *Power*[$]	The National Solar Mission (2010), feed-in tariff and utility power purchase obligations, fiscal incentives including solar project subsidies and tax incentives (for example, 2019 Pradhan Mantri Kisan Urja Suraksha evam Utthan Mahabhiyan)	**Primary objectives:** Decarbonize energy **Cobenefits:** Avoided air pollutant emissions; improved electricity access; green jobs; promote domestic manufacturing	Platform for broad communication and engagement; placed emphasis on local production of solar panels and equipment to enhance self-sufficiency and promote domestic manufacturing
17. Colombia *Gas flaring*	Ecopetrol Company's Climate Change Strategy to Reduce Gas Flaring (linked to NDC); Global Gas Flaring Reduction Partnership (2021)	**Primary objectives:** Reduce GHG emissions **Cobenefits:** Environmental, health, and economic benefits of reduced black carbon particulate matter; improved domestic energy supply	Colombia joined the Zero Routine Flaring by 2030 initiative to support cooperation between all relevant stakeholders to find solutions to gas flaring
18. India *Transport*[$]	Faster Adoption and Manufacturing of Electric (and Hybrid) Vehicles in India (FAME-II) scheme (2019–2021)	**Primary objectives:** Decarbonize transport **Cobenefits:** Improved mobility access; reduced air pollution; job creation by boosting domestic electric vehicle manufacturing	Provides incentives for domestic production of EV components to generate new employment opportunities
19. Colombia *Buildings*[$]	Green Building Code and appropriate tax incentives to bolster the interest of the private sector to build green	**Primary objectives:** Green buildings; climate finance **Cobenefits:** Energy efficiency; higher resale value	Worked with a local chamber of commerce to deliver trainings to developers and municipal governments
20. China *Agriculture*	Introduced the Guangdong Agricultural Pollution Control Project (2013) and developed standards and regulations for safe, green agricultural products	**Primary objectives:** Pollution reduction **Cobenefits:** Reduced GHG emissions; promoting the rural circular economy; reduced costs to farmers; increased crop yields; provincial economic savings; avoided health care costs; reduced deforestation	Training for key stakeholders including agricultural officers, farmers, cooperatives, and enterprises; secured the collaboration of farmers and the private sector by promoting cost reductions
Getting the finance flowing			
21. Chile *Transport*[$]	In addition to the National Electromobility Strategy, the government used public-private partnership to overcome financial, operational, and infrastructure challenges to e-bus development	**Primary objectives:** Decarbonize transport **Cobenefits:** Air pollution reduction; energy cost saving	Built a cooperative partnership between private companies (bus operators, bus manufacturers, and financiers) and the public sector to gain support

Note: **$** = Case studies with a strong link to private sector finance. Countries shaded green = high-income countries; orange = upper-middle-income countries; yellow = lower-middle-income countries; blue = low-income countries.

(Continued)

TABLE O.1 ***continued***

Case study	Policy instrument/program details	Primary objectives and cobenefits	Political economy considerations
22. Colombia *Economy-wide*[$]	Climate risk stress test, regulatory reforms, and a green taxonomy to classify green investments	**Primary objectives:** Climate finance; risk management governance **Cobenefits:** Growth of green-labeled products	Created a green taxonomy with a large group of stakeholders, including various ministries, agencies, and international initiatives
23. Kenya *Power*[$]	Revising the Energy Act (2006), Kenya's Energy Regulatory Commission initiated a Least Cost Power Development Plan for the power sector; this introduced institutional and regulatory reforms to attract private investment and support privately financed independent power producers	**Primary objectives:** Improve macroeconomic and enabling environment **Cobenefits:** Energy transition to renewable sources; increased access to electricity, economic growth, jobs, productivity, incomes, health outcomes, and human capital development	Planning involved multistakeholder steering and technical committees
Ensuring a just transition			
24. South Africa *Coal*	Created a Presidential Climate Commission (2021) that has developed national, sectoral, and regional Just Energy Transition strategies to start decommissioning/retrofitting coal power stations while also increasing RE sources	**Primary objectives:** Just transition; decarbonize energy **Cobenefits:** Environmental; air pollution reduction; improved domestic energy supply; attract foreign investment; job protection	In 2012, the PCC launched the Social Partner Dialogues on Pathways for a Just Transition with government, labor workers/unions, business, and civil society to build a common vision for the Just Transition and create pathways to achieve this vision
25. United Kingdom, Germany, and the Netherlands *Coal*	UK Coal Phase-Out Policy (2015); Netherlands Coal Phase-Out Act (2019); Germany's Coal Exit Law (2020)	**Primary objectives:** Just transition; decarbonize energy **Cobenefits:** GHG emissions reduction; air pollution reduction; environmental and health benefits	Included policies such as strengthened social safety nets and alternative employment; used inclusive processes that involved local unions and public, private, and nongovernmental actors to build consensus around the need to transition

Note: **$** = Case studies with a strong link to private sector finance. Countries shaded green = high-income countries; orange = upper-middle-income countries; yellow = lower-middle-income countries; blue = low-income countries, https://datahelpdesk.worldbank.org/knowledgebase/articles/906519. EU = European Union; EV = electric vehicle; GHG = greenhouse gas; LFG = landfill gas; NDC = nationally determined contribution; PCC = Presidential Climate Commission; RE = renewable energy; REDD+ = Reducing Emissions from Deforestation and forest Degradation, conservation of forest carbon stocks, sustainable forest management, and enhancement of forest carbon stocks in developing countries; UK = United Kingdom; WTO = World Trade Organization.

Planning and coordination play a key role, including through commitments and targets, but a combination of long-term targets and short-term milestones is needed. The former will help set the trajectory and coordinate expectations; the latter will keep governments on track and send the short-term signals and incentives needed to influence investors and decision-makers.

Second, high-visibility failures, or even citizen unrest, hide a large and growing number of climate policies that are being successfully implemented. Case studies show that political and public buy-in are critical, with strong public institutions, cross-party support, and ongoing public engagement being crucial elements for effective implementation. A large group of stakeholders—including ministries, regulators, private sector actors, civil society actors, and academics—need to work together to design tools, create policies, socialize findings, drive implementation, and monitor results. In this context, capacity building is essential to ensure that officials at all levels of government and representatives in both public and private institutions are better able to design and implement climate policies. A follow-up report will provide a deeper analysis of the key determinants of a successful implementation of climate policies in spite of the political economy challenges, bearing in mind that some policy implementation successes (or failures) may be context-specific and cannot be directly applied to other jurisdictions.

Third, there is a critical gap in credible, ex post analysis of the impacts of decarbonization policy implementation to show the emissions reductions and other benefits that they have delivered and derive best practices that can be generalized to other countries. This makes it challenging to correlate the clear growth in markets for low-carbon technologies or the declines in carbon intensity or emissions with specific policies. It is important for governments not only to monitor policy implementation and outcomes on emissions but also to analyze costs and distributional impacts. This will allow them to adjust policies to address new challenges or unexpected and unwelcome developments; it will also allow other countries and jurisdictions to learn from their experience and improve their own actions.

This report is only a start. Evaluating the full impact of the case studies featured in this report will take time, as many describe recently enacted policies that will produce results over decades. The World Bank aims to continue collecting, analyzing, and sharing examples of successful (and less successful) climate policies or interventions to inform decision-making across the world.

As with all policy processes, the learning journey for climate policies is never complete; rather, it continues to evolve and adapt in light of new approaches, technologies, and climate challenges. As such, the insights, case studies, and lessons learned included in this report are not the final word. They are more of a stock-take on where the world is currently at with climate policy, what we have learned, and what we still need to figure out.

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To address the myriad challenges posed by global climate change, countries at all income levels have put in place a diverse set of policies over the past three decades. Many governments have already made significant progress in their efforts to decarbonize, creating a rich history of implementation experiences that provides important lessons for how to successfully advance climate policy goals in a variety of different economic, cultural, and political contexts.

Despite this progress, the transition to a net zero future continues to face significant barriers, including the need for large investment, a lack of institutional capacity, and challenging political economy issues.

Reality Check: Lessons from 25 Policies Advancing a Low-Carbon Future identifies key policy approaches that countries are taking to decarbonize their economies. The report classifies policies into five categories:

- Planning for a future with zero net emissions
- Getting the pricing and taxes right
- Facilitating and triggering transitions in key systems, such as energy and food
- Getting the finance flowing, particularly by incentivizing private sector investment
- Ensuring a just transition that protects the poor.

Reality Check: Lessons from 25 Policies Advancing a Low-Carbon Future fills a critical research gap by documenting low-carbon policy trends and providing a series of case studies across sectors and geographies. The 25 case studies furnish country contexts and policy details, examine results and impacts, and outline key takeaways and lessons learned for enabling further ambitions in achieving emissions reductions.

The report contributes to an evolving analytical agenda on how to reduce carbon emissions while achieving economic development and the strategic transition to a greener, more resilient, and more inclusive future.

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