

Climate Policy Lab



Mission



Our mission is to determine which **climate policies work, which don't, and why**.

We strive to build **sustainable prosperity in a changing global environment** through rigorous, policy -relevant, interdisciplinary research and by training the next generation of national and global leaders.



What We Do



Serve as a **global intellectual hub** for comparative climate policy analysis and learning.

Provide **independent, objective, and actionable policy analysis** for governments considering new or reformed climate policies.

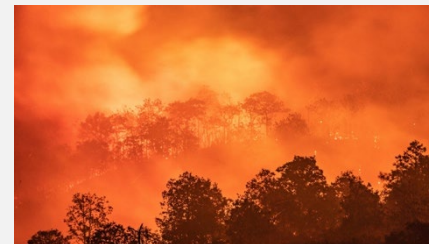
Conduct training, apprenticeships, and **capacity building**.



Research Areas



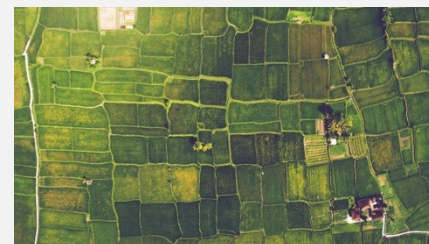
Clean Energy Innovation



Resilient Development and Adaptation



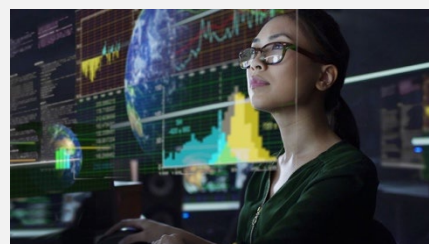
Low Carbon Growth



Sustainable Agriculture

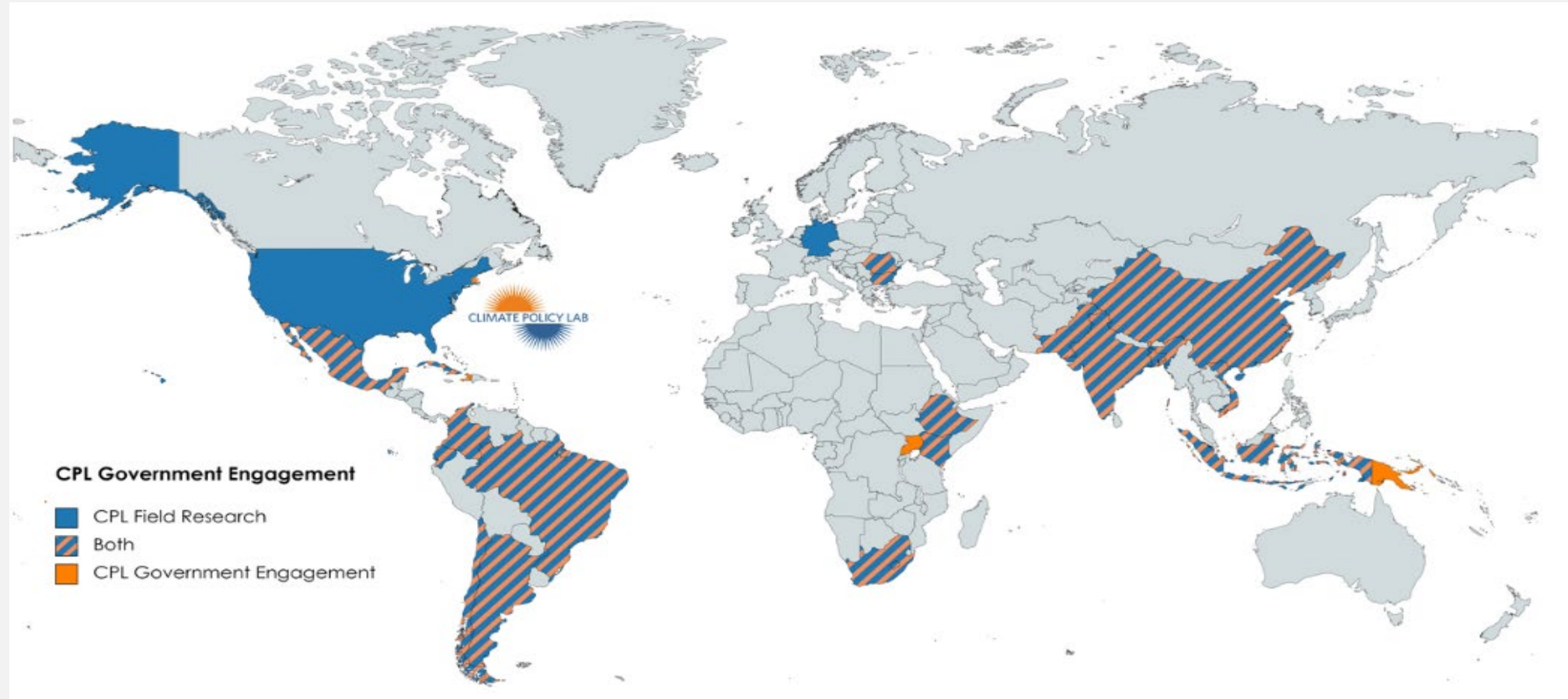


Climate Finance

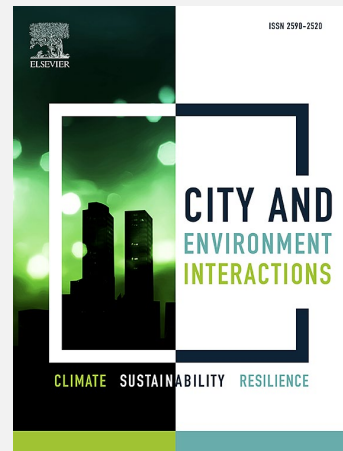
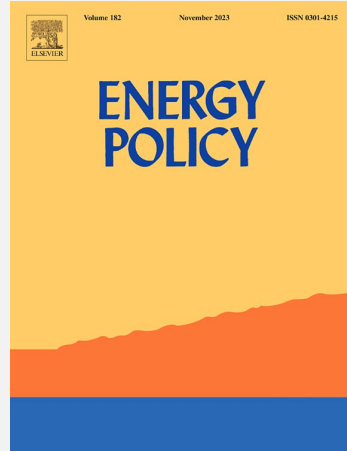
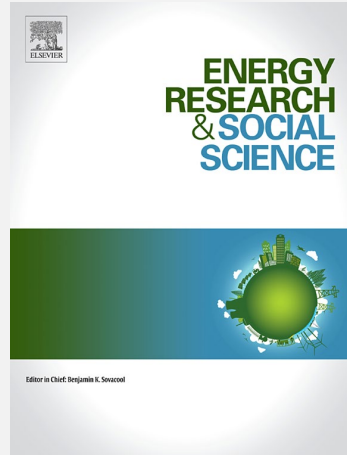


Climate Policy Performance

Where We Work



Publications



Policy Briefs



POLICY BRIEF | APRIL 2024



PREPARING FOR NOVEL EXTREME WEATHER EVENTS IN THE UNITED STATES: LESSONS FROM DISASTERS

Jenna Clark,
Bethany Tietjen,
Amy Myers Jaffe,
Saskia Satah,
Erin Coughlan de Perez

Key Policy Insights

- Disaster policy gets state quickly, and policies need to be routinely reviewed, simulated, and revised to reflect current and evolving climate risks.
- In a changing climate, communities with no recent experience of extreme weather events can benefit from proactively studying lessons from disaster-impacted communities.
- Government and civil society should pre-design methods for emergency communication that reach heterogeneous populations through existing community institutions and incorporate system redundancy in case of infrastructure or other communication failures.
- Existing inequalities and gaps in human services are exacerbated by disasters; preparedness plans should prioritize long-term social service needs, such as mental health and housing, before and after disasters.
- Coordination and unified emergency management training should be improved between all levels of government and with non-governmental organizations and community groups.

The United States experienced 28 billion-dollar disasters in 2023 – far exceeding the previous record of 22 billion-dollar disasters in 2020.¹ All told, these events led to an estimated \$92.9 billion in damages. Without significant community preparation, the costs of extreme weather events may be exacerbated in the coming decades, as climate change increases the frequency and severity of extreme events.^{2,3} The stakes are high, with broad ranging community impacts, especially on socioeconomically vulnerable populations. Of the 3.3 million people in the United States who were forced to evacuate their homes in 2022 due to hurricanes, floods, fires, and other disasters, the lowest income households had the highest evacuation rates.⁴ Extreme weather events can also exacerbate energy inequality and worsen health outcomes for already vulnerable people, including those with lower levels of education, without English proficiency, home air conditioning, or transportation access.^{5,6}

Adequate community preparedness can mitigate the impacts of extreme events on individuals, communities, and infrastructure, yet policy change often happens in the wake of disasters.^{7,8,9} Studies show that disasters serve as focusing events which grab the attention of the public, media, and policymakers and allow governments to make changes based on new knowledge and past mistakes.^{10,11} But this type of 'reactive' policymaking will become increasingly inadequate due to climate change. Instead, scenario planning – a process in which governments or community groups conduct policy response exercises based on possible future climate scenarios – can



POLICY BRIEF | NOVEMBER 2023



Nora Hampel

MAXIMIZING THE BENEFITS OF COLOMBIA'S ENERGY TRANSITION

Increasing Resilience Through Decarbonization and Pollution Reduction

Key Policy Implications

- Implement mechanisms to enforce industrial standards including industrial process emissions and energy efficiency standards.
- Provide incentives for the expansion of mini-grids and stand-alone systems with storage, including on-site energy generation using local renewables.
- Consider renewable energy policies (including green hydrogen) for interrelatedness, policy-coupling and sector-clustering.
- Ensure that climate-energy policies provide specific signals (for decarbonisation and diversification), but also disincentives (for deforestation).
- Expand the size of protected areas (from current 10% to 30% or more) and implement enforcement mechanisms against human rights violations.
- Assemble expert teams (researchers, practitioners, and local community members) to collaborate with vulnerable communities on site to devise climate-energy approaches tailored to local needs that reflect cultural protocols.
- Monitor climate-energy policy outcomes (impacts on forests, biodiversity, and physical security of vulnerable communities).

Summary

Colombia's updated Nationally Determined Contribution (NDC) reflects the ambition to achieve carbon neutrality by 2050, focusing on emission-reductions in the highest emitting sectors – forestry/land management and agriculture. Pledges were made to halt deforestation and reduce black-carbon pollution by 40%, which contributes not only to respiratory and cardiovascular disease, but also to a faster pace of glacier melting. While the NDC ambitions are well articulated, they run the risk of not being realized without a robust investment a diversified portfolio of renewables, including off-grid energy solutions.

Policy recommendations outlined in this brief focus on solutions that prioritize clean power generation and energy efficiency improvements that can boost sustainable and equitable livelihood trajectories based on climate-compatible land use, but also reflect ambitions stated in climate and energy strategies.



POLICY BRIEF | OCTOBER 2023



Zdenka Myslikova
Nathaniel Dalton-Thornton

CHILE'S ENERGY INNOVATION LANDSCAPE

Current Policy and Emissions Context

With a population of 19.21 million and total greenhouse gas emissions of 55.33 MCO₂e, Chile's per capita emissions are 2.92 tCO₂e/person¹ – six times smaller than the U.S.² and nearly three times smaller than China.³ Chile's energy sector is dominated by fossil fuels (67.3%), particularly coal (33.95%) and gas (17.78%), though clean energy sources such as hydroelectric (20.22%), solar (13.24%), and wind (8.85%) are also prominent.

In Chile's deregulated energy sector with a competitive market orientation, there are no incentives specific to clean energy. The country maintains a technology-neutral power generation auction system.⁴ Unregulated energy prices have helped to create a level playing field for renewables to compete with fossil fuels, and renewable auctions have not yet been required. The Chilean government aims to close down all operating coal-fired power plants by 2040 at the latest, which means replacing 34% of their current generation capacity.⁵

In 2022, the government updated its National Energy Policy, which includes roughly 60 targets related to transportation, power generation,

industry, and green job creation. Key objectives include:

- 80% renewable energy in electricity generation by 2030,
- 100% zero-emission energies in electricity generation by 2050, and
- Chile will export green hydrogen and derivatives by 2030.⁶

Green hydrogen plays a major role in Chile's energy ambitions. In 2020, the Ministry of Energy published a National Green Hydrogen Strategy, which predicts that Chile will have potentially the cheapest green hydrogen in the world by 2030.⁷ In 2021, Chile signed an agreement with the Belgian ports of Antwerp and Zeebrugge to facilitate green hydrogen export to the EU.⁸ Later that year, the Chilean government committed US\$50 million in grants to support six green hydrogen projects.⁹ In the transportation sector, a central policy is Chile's National Electromobility Strategy. Announced in October 2021, the strategy aims for 100% passenger and public transportation vehicle sales to be electric by 2035.

Foreign Investment

Energy was the largest sector for foreign direct investment (FDI) in 2021. It comprised 53 projects valued at US\$12.6 billion. In 2020, foreign investors announced 32 renewable energy projects in Chile, more than any other Latin American country.¹⁰ Foreign companies



POLICY BRIEF | OCTOBER 2023



Nathaniel Dalton-Thornton
Zdenka Myslikova

BRAZIL'S ENERGY INNOVATION LANDSCAPE

Overview

Home to the world's sixth largest population¹ and twelfth largest GDP,² Brazil is also the sixth largest source of greenhouse gas emissions.³ As of 2021, renewable energy generated nearly 80% of Brazil's electricity.⁴ Large hydroelectric projects dominate, accounting for nearly 55% of all generation.⁵ This reliance on hydropower has left Brazil vulnerable to drought. In 2021–2022, a severe drought caused reservoirs to drop to their lowest levels in nearly a century.⁶ The country is currently diversifying toward other renewable energy sources and natural-gas-fired power plants.⁷ Brazil's National Electrical Energy Agency (ANEEL) expects to add 10.3 GW of installed capacity in 2023, with wind and solar representing more than 90% of new projects.

Foreign Investment

Brazil receives significant foreign investment, including in its energy sector. In the first half of 2022, Brazil received more foreign direct investment (FDI) than all but two countries, the U.S. and China.⁸ As of 2021, the leading sources for Brazil's FDI were the U.S., the Netherlands, and Luxembourg.⁹ In the same year, the electricity and gas sectors accounted for 12% of Brazil's FDI.¹⁰

China is also an important player in Brazil. In 2021, Brazil was the leading recipient of Chinese investments globally, garnering 13.0% of all investments. That year, Chinese companies invested US\$5.9 billion in 28 projects in Brazil, the second highest ever recorded in the country. The electricity sector accounted for 46% of all projects, more than any other sector. In terms of project value, oil represented 65% of total investments. Between 2007 and 2021, the electricity sector received 40.5% of Chinese investments, while oil extraction accounted for 30.9%.¹¹

New Administration

With the inauguration of a new president, Luiz Inácio Lula da Silva, Brazil's climate and energy policies are currently in flux. The administration is creating new units and departments in various ministries, and plans to add a new climate secretariat to every ministry. Many reforms will likely be announced throughout 2023. While much is still unknown, several changes related to energy and climate policy are already clear. Lula has appointed Marina Silva as Minister of the Environment and Climate Change. Silva, in turn, has announced the creation of a National Authority for Climate Security, tasked with the implementation of Brazil's climate policy.¹² Lula has also created a Sub-secretariat of Science and Technology for the Amazon within the Ministry of Science, Technology, and Innovation.¹³



Raising Ambition Project



Assess the **effectiveness of climate strategies and policies** in Brazil, China, Colombia, Ethiopia, India, Indonesia, Mexico, South Africa, Türkiye, and Vietnam.

Identify a range of new policy pathways that could supplement existing efforts to achieve deep decarbonization.

Methodology combines **system dynamics modeling and expert elicitation** of local and international experts.



Climate Policy Lab Academy



Facilitate country success in achieving urgent climate actions goals through **executive education and knowledge sharing** .

Provide various **climate policy analysis tools** , such as our Policy Gap Analysis methodology.

Convene 30+ **climate experts and academics** from 10+ countries and regional organizations.



The Fletcher School



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