

The energy transition as a development challenge in Latin America and the Caribbean

Delfina Godfrid, Ana Julia Aneise, Elisabeth Möhle,
Baptiste Albertone, Dido Gompertz and Pau Morandi

Policy insight

October 2026



The Grantham Research Institute on Climate Change and the Environment was established in 2008 at the London School of Economics and Political Science. The Institute brings together international expertise on economics, as well as finance, geography, the environment, international development and political economy to establish a world-leading centre for policy-relevant research, teaching and training in climate change and the environment. It is hosted by the Global School of Sustainability at LSE and is funded by the Grantham Foundation for the Protection of the Environment. www.lse.ac.uk/granthaminstitute

Fundar is an innovation centre for development policy established in Argentina in 2020. It works to promote inclusive and sustainable development in Latin America through rigorous applied research, evidence-based public policy design, digital tools and strategic advocacy. Its work focuses on major structural challenges, including macroeconomic stability, productive and sustainable growth, social inclusion and strengthening state capacity, with an emphasis on bridging technical expertise and policy implementation. <https://fund.ar/en/>

The Technology and Industrialisation for Development (TIDE) Centre explores the complex relationships between trade, investment, technology, industrialisation, and innovation in the context of development. <https://oxford-tide.org/>

E3G is an independent think tank working to deliver a safe climate for all. We drive systemic action on climate by identifying barriers and constructing coalitions to advance the solutions needed. We create spaces for honest dialogue, and help guide governments, businesses and the public on how to deliver change at the pace the planet demands. More information is available at www.e3g.org

CETEx – the Centre for Economic Transition Expertise – was established in 2024 at the London School of Economics and Political Science as a specialised research and policy centre to support the ambitious reforms required to deliver sustainable, inclusive and resilient economies and financial systems across Europe. The Centre is hosted by the Global School of Sustainability and has funding from the Sequoia Climate Foundation, ClimateWorks Foundation, Children’s Investment Fund Foundation, Sunrise Project and European Climate Foundation. www.cetex.org

About the authors

Delfina Godfrid is a Policy Analyst and Research Advisor to Nicholas Stern at the Grantham Research Institute.

Ana Julia Aneise is a Lead Specialist on Energy and Climate at Fundar.

Elisabeth Möhle is a Lead Specialist on Sustainable Development at Fundar.

Baptiste Albertone is Policy Lead at the Technology and Industrialisation for Development (TIDE) Centre.

Dido Gompertz is a Policy Advisor in the Global Clean Power Diplomacy team at E3G.

Pau Morandi is a Policy Fellow at the Centre for Economic Transition Expertise (CETEX).

Acknowledgements

This report emerged from the ‘Dialogue on the energy transition and sustainable growth in Latin America’ event that took place during London Climate Action Week in June 2026.

The authors thank Kathy Hochstetler, Mathias Larsen, Daniel Schteingart, Fernanda Gimenes, Soledad Aguilar and Juan Pablo Martínez for their excellent feedback on an earlier draft of this report. Sarah King edited the report.

The views expressed in this report represent those of the authors and do not necessarily represent those of the host institutions or funders. The authors declare no conflict of interest in the preparation of this report.

Authors’ declaration of AI use: The authors used AI in the research process to provide initial country classifications and support content synthesis and readability. The authors reviewed and edited all AI inputs. Authors take full responsibility for the content of this report.

This report was first published in October 2026 by the Grantham Research Institute on Climate Change and the Environment.

© The authors, 2026

Licensed under CC BY-NC 4.0. Commercial permissions requests should be directed to gri@lse.ac.uk.

Suggested citation: Godfrid D, Aneise AJ, Möhle E, Albertone B, Gompertz D, Morandi P (2026) *The energy transition as a development challenge in Latin America and the Caribbean*. London: Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science.
DOI: 10.21953/researchonline.lse.ac.uk.00141359

Contents

Summary	4
1. Introduction: the energy transition as a development challenge	6
2. A clean energy mix, a narrow productive base	7
2.1. An inherited clean electricity mix.....	7
2.2. A persistent dependence on fossil fuel production	9
2.3. A shallow foothold in green value chains	12
3. Energy transition pathways	14
3.1. A typology of transition contexts	14
3.2. Country situations	15
I. Low-friction frontrunners	15
II. Fossil-locked economies	15
III. Low-friction stragglers	17
IV. Dual-track transitioners	17
4. Making the energy transition real.....	19
4.1. Domestic capabilities	19
4.2. Domestic political settlements	21
4.3. External constraints and sources of leverage.....	23
4.4. Key insights for advancing the transition across the typology.....	25
5. Conclusion	26
References.....	28

Summary

The energy transition is a development challenge

The energy transition, understood here as the shift from fossil-fuel-based energy systems to clean energy ones, is fundamentally a development challenge. Countries face this transition with distinct domestic energy system configurations, productive structures and development models. This report examines how the transition interacts with these conditions in Latin America and the Caribbean (LAC), and the opportunities and challenges it creates.

Each country's conditions significantly shape the benefits it can derive from the transition and its ability to capture them. Potential benefits span energy security, environmental improvements, affordability and access, and productive and technological development, with the latter being especially challenging to realise for many developing economies. In LAC, this challenge is partly reflected in the region's limited and predominantly upstream participation in energy transition value chains. Moving into higher-value segments of clean energy activities requires ambitious, pragmatic and coordinated governmental policy.

Four transition contexts span Latin America and the Caribbean

This report advances [previous work](#) on the political and economic climate action landscape in LAC by offering a framework for understanding the key challenges and pathways associated with the energy transition. It develops a typology of four transition contexts (see Table S1 and Figure S1), which are intended as analytical categories rather than rigid classifications, providing a practical lens for unpacking the distinctive challenges, opportunities and policy priorities countries across the region face in advancing the energy transition. The typology is structured around two dimensions: (i) countries' structural dependence on fossil fuels, as reflected in their contribution to economic rents, fiscal revenues, export earnings and foreign exchange; and (ii) their progress in the energy transition, particularly in terms of clean energy deployment and energy sector decarbonisation.

Table S.1. The energy transition in Latin America and the Caribbean: a typology of transition contexts

	Limited progress in the energy transition	Advanced progress in the energy transition
Low fossil fuel dependence	Low-friction stragglers <i>Little or no fossil fuel rent, but limited finance, scale and institutional capacity constrain the transition</i>	Low-friction frontrunners <i>Clean energy reinforces existing development priorities rather than displacing entrenched interests</i>
High fossil fuel dependence	Fossil-locked <i>Dependence on fossil fuels slows the transition through macroeconomic and fiscal lock-in</i>	Dual-track transitioners <i>Strong transition progress alongside continued expansion of the fossil fuel economy</i>

Note: This typology is based on a qualitative assessment of country trajectories across the region, informed by case studies (Godfrid et al., 2025) and other material. 'Dependence' refers to a country's current or prospective reliance on hydrocarbons as a source of government revenue and export. 'Friction' describes the degree of resistance a country faces in advancing the energy transition, particularly given vested interests.

Source: Authors' elaboration

For **low-friction frontrunners**, where clean energy largely aligns with existing development goals and encounters relatively little resistance, the political and economic environment for the energy transition is comparatively favourable. As the transition advances, however, the challenge shifts towards deepening decarbonisation beyond the electricity sector, requiring new capabilities to address emerging constraints. In **Chile**, for example, the challenge is shifting from renewable

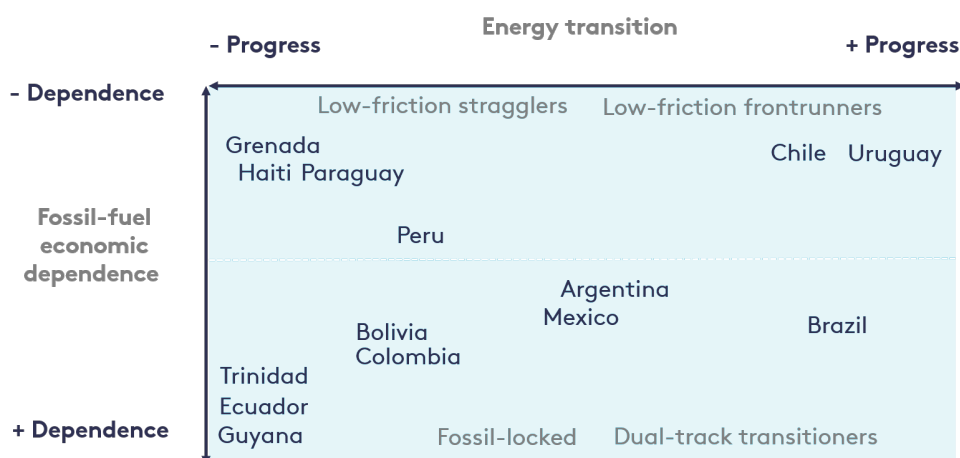
deployment towards system integration, with grid congestion becoming the main constraint. Fiscal systems may also need redesign, as in **Uruguay**, where electrification will erode revenues from taxes on imported fuels.

For **fossil-locked economies**, the central challenge is breaking structural dependence on hydrocarbons while managing fiscal and macroeconomic constraints. Histories of price volatility and hydrocarbon-dependent spending have frequently contributed to higher levels of debt and a higher cost of capital. Several LAC countries illustrate how weak institutions can struggle to translate non-renewable resource rents into durable development gains, with **Bolivia** providing a notable example. Politically, the fossil fuel rents at stake can create resistance to necessary measures, such as subsidy reform and the closure of profitable fossil fuel assets, as seen in **Ecuador**.

Low-friction stragglers, such as **Haiti**, face pressing capability constraints, including acute financing needs, rather than resistance from entrenched vested interests. With little or no fossil fuel revenue obstructing reform, the stall reflects other factors, including high capital costs, small and poorly connected markets, weak grids, and limited state capacity. In these economies, the transition is constrained by long-standing development challenges.

Dual-track transitioners are expanding the fossil economy while simultaneously advancing the energy transition and building green industries at pace. As a result, they face a distinctive combination of pressures. **Brazil**, for example, stands out for having an industrial base and policy capacity strong enough to link the transition to technological learning and the development of domestic supply chains. Such conditions remain rare in LAC. The challenge is to continue advancing the energy transition and growing green sectors while preventing fossil-fuel lock-in.

Figure S.1. Indicative country positions within the transition typology



Note: Country positions are indicative, as some countries lie close to category boundaries or display characteristics of more than one type.

Source: Author's elaboration

Countries' capability to advance the transition is shaped by domestic and external factors

Where a country is positioned within the transition typology defines the nature of the challenge it faces, but not its capacity to respond. Whether countries can advance their energy transition depends on the policy space available to them, shaped by three key dimensions: domestic capabilities, political settlements (which shape how power and resources are distributed among influential groups, affecting the scope for reform and structural change), and external constraints associated with their position in the global economy. While none of these factors predetermines outcomes, they help define the range of viable pathways and the policies that can be successfully implemented and sustained.

1. Introduction: the energy transition as a development challenge

The energy transition unfolds as much through the dynamics of economic development as through those of climate policy. Debates on the energy transition have largely been framed around emissions and technology, particularly in terms of how quickly countries can decarbonise and deploy clean energy. But the implications are broader. The energy transition reshapes countries' development models, affecting the sectors that generate growth, employment, exports and public revenue. Whether the transition succeeds, and whether it does so in ways that are socially and politically sustainable, depends on how clean technology adoption and diffusion interact with each country's development trajectory. This can be particularly challenging in less-developed economies, where economic, institutional and fiscal resources are more limited.

The energy transition offers Latin America and the Caribbean (LAC) significant development opportunities. Advancing renewable energy deployment, for example, can strengthen energy security, expand access, improve affordability and enhance competitiveness (Möhle et al., 2026; Lebdioui, 2024). These benefits are already reshaping energy systems across the region.

Yet renewable deployment captures only one dimension of the energy transition. Reaching net zero will also require countries to reduce their dependence on carbon-intensive economic activities, especially fossil fuel production. This is particularly challenging in LAC, where hydrocarbons remain an important source of fiscal revenues and foreign-exchange earnings in many countries, creating broader vulnerabilities for public finances and external accounts. Meanwhile, the region's participation in emerging green value chains remains largely concentrated in extractive and other low-value-added activities, limiting the domestic economic benefits of the transition.

The energy transition is therefore an economic and social development challenge, and its success will depend on countries' ability to decarbonise while transforming their productive structures (Marín et al., 2025). The question is how to decarbonise in a way that also advances development, recognising that this will require different approaches in different countries. For some, particularly those needing to replace economic activities such as fossil fuel production, this will increasingly depend on making the transition a source of structural transformation, by building green industries and a more competitive position in the global economy, based on productivity and quality employment rather than resource rents (ECLAC, 2016; Lebdioui, 2024).

This report develops a framework for understanding the different circumstances in which LAC economies find themselves in relation to the energy transition and offers policy insights on the way forward. Its central contribution is a typology structured around two dimensions, structural dependence on fossil fuels and progress in the energy transition, yielding four states of transition, each with distinct risks, opportunities and policy priorities. The analysis focuses on the energy dimensions of the transition and their implications for economic development, rather than on the region's broader mitigation challenge, particularly given that agriculture, forestry and other land use account for nearly 60% of LAC greenhouse gas emissions (Nabuurs et al., 2022). Although the report adopts a LAC-wide perspective, the country cases and analysis focus primarily on South America and do not aim to provide comprehensive coverage of Central America and the Caribbean.

The rest of the report is structured as follows: **Section 2** outlines the region's energy landscape and the role of fossil fuels within it. **Section 3** develops the typology and locates selected countries within it. **Section 4** draws on the typology to unpack key conditions under which the transition can be advanced in different contexts, highlighting three dimensions that shape these possibilities. **Section 5** concludes with the key messages.

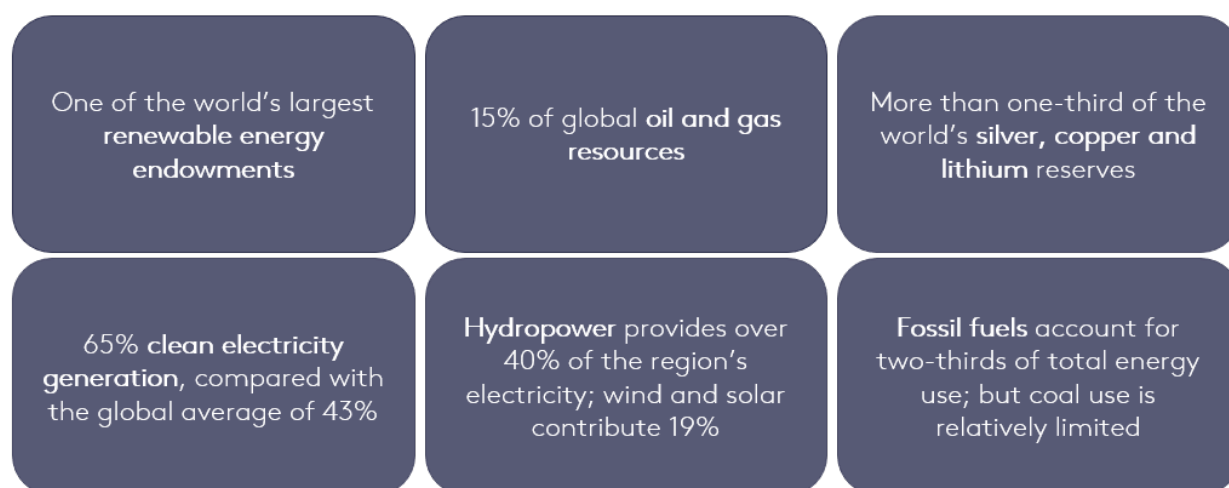
2. A clean energy mix, a narrow productive base

This section examines the region's energy landscape and the role of fossil fuels within it, providing the context for understanding the development challenges countries face in the transition.

2.1. An inherited clean electricity mix

LAC enters the energy transition with an already comparatively clean electricity mix, anchored in long-standing hydropower generation, alongside significant solar and wind potential, and substantial oil, gas and critical mineral resources (see Figure 2.1) (IEA, 2023). Over half of LAC's electricity comes from clean sources, owing largely to its hydropower legacy, which defined the region's power system throughout much of the 20th century and is now complemented by a growing share of wind and solar (see Figure 2.2). Yet fossil fuels remain central to the broader energy system, accounting for two-thirds of total energy use, albeit below the global average of 80% (WEF, 2025; IEA, 2025c). Coal plays only a marginal role, while gas still accounts for around a quarter of electricity generation (EMBER, 2026).

Figure 2.1. Factors shaping the energy transition in Latin America and the Caribbean

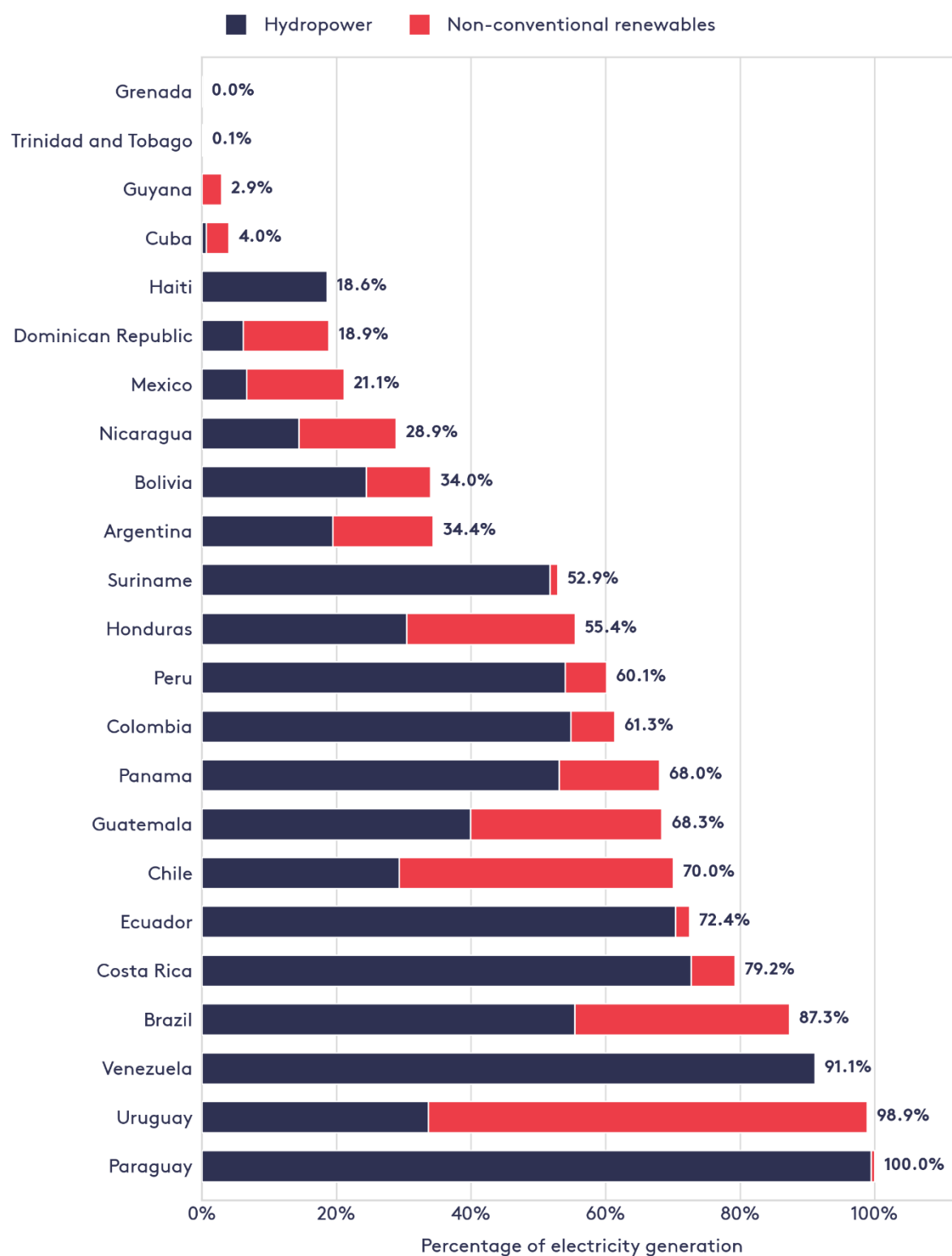


Source: Authors' elaboration based on IEA (2023), EMBER (2026), WEF (2025)

This clean energy profile is set to deepen as renewable deployment accelerates. Between 2020 and 2023, wind and solar photovoltaic accounted for more than half of the region's annual capacity additions (IEA, 2023; Zero Carbon Analytics, 2026). This reflects cost declines which made them increasingly competitive relative to conventional generation (EMBER, 2025a), a shift reinforced by other pressures, including rising energy demand and, among fossil-fuel importers, the prospect of replacing costly and volatile imports with domestic generation (OLADE, 2024; IEA, 2023).

The pace of clean energy deployment and the benefits it brings vary across countries. Depending on their structural conditions, renewables can contribute to different economic, social and energy-system goals, resulting in distinct and context-specific drivers of adoption (see Figure 2.3).

Figure 2.2. Renewable energy share of electricity generation in selected LAC countries, 2024 (%)



Source: Authors' elaboration using data from Our World in Data (2026)

Figure 2.3. Key drivers of renewable energy adoption



Source: Authors' elaboration based on Möhle et al. (2026)

2.2. A persistent dependence on fossil fuel production

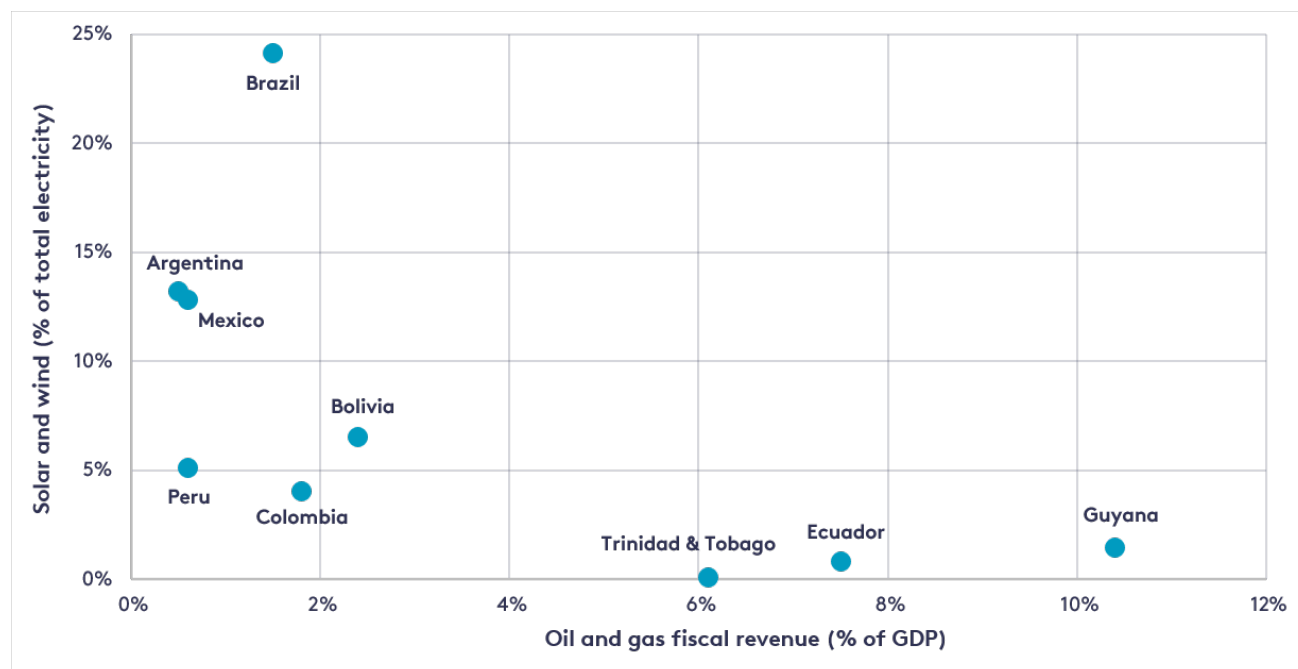
Deploying renewables is only one part of the energy transition; it also demands a process of structural economic transformation. This implies reallocating capital and labour away from a wide range of carbon-intensive activities and building new sectors capable of sustaining growth, exports and employment. This is particularly challenging in economies whose export earnings, fiscal revenues, investment and employment are underpinned by fossil fuel production. This is an important challenge for LAC, which remains a significant hydrocarbon-producing region, supplying around 11% of the world's oil and around 6% of natural gas in 2025 (OLADE, 2026).

Figure 2.4 plots fiscal revenue from oil and gas as a share of gross domestic product (GDP) against the share of electricity generated by wind and solar for selected LAC countries in 2024, pairing exposure to declining hydrocarbon revenues with progress in clean electricity deployment. Solar and wind penetration provides only a partial measure of energy transition progress, as it does not capture broader changes across the economy. Even so, it remains a useful proxy, since countries that have advanced further in the transition have generally expanded solar and wind generation. Hydropower is excluded because much of the region's installed capacity predates the current transition and therefore provides a less direct indicator of recent progress.

As shown in Figure 2.4, fiscal dependence on fossil fuels in LAC is heterogeneous. Dependence is often concentrated in government revenues and export earnings, rather than in the sector's direct contribution to total GDP, which often understates the extent of dependence. In 2024, oil and gas fiscal revenues were equivalent to more than 10% of GDP in Guyana, 7.5% in Ecuador and 6.1% in

Trinidad and Tobago, compared with less than 1% in Peru (OECD, 2026). The majority of the region's hydrocarbon production is concentrated in Brazil, Mexico, Colombia, Venezuela, Argentina, Guyana and Ecuador, which together account for nearly 90% (OLADE, 2026). However, the share of hydrocarbon rents captured by governments varies across countries owing to differences in royalty schemes (see Castilla, 2025). Brazil is a notable case, combining substantial hydrocarbon fiscal revenues with high wind and solar penetration, and therefore occupying a distinct position in Figure 2.4. Fossil fuel fiscal dependence shapes the adjustment costs, fiscal space and distributional tensions associated with the energy transition.

Figure 2.4. Solar and wind electricity generation and oil and gas fiscal revenue in selected LAC countries, 2024



Notes: Data do not include coal fiscal revenue, which mainly impacts Colombia. Data for Mexico correspond to the federal government's oil revenues; they are partial because they exclude revenues from PEMEX, the state-owned oil and gas producer. Data for Ecuador correspond to oil revenues of the non-financial public sector from crude oil exports. Data for Guyana refer to revenues deposited in the Natural Resource Fund.

Source: Author's elaboration using data from Our World in Data (2026) (solar and wind) and OECD (2026) (fiscal revenue from tax and non-tax instruments)

This heterogeneity in fossil fuel revenue dependence across LAC also has a temporal dimension. Countries differ not only in how dependent they are on fossil fuels, but also in how long that dependence has existed and where they are in the production cycle. In countries such as Venezuela, Mexico and Trinidad and Tobago, hydrocarbons have shaped the economy for decades. Guyana, by contrast, only began producing oil in 2019, and production has since increased substantially. These differences matter because the challenges countries face are distinct. Long-standing dependence is difficult to unwind, as infrastructure, institutions, state-owned companies, jobs and public revenues become increasingly tied to the sector, reinforcing carbon lock-in (Seto et al., 2016). New producers face a different challenge. At the beginning of the production cycle, governments expect many years of future revenues and therefore have little incentive to strand newly developed assets. Both new and old producers can face the resource-curse challenge of turning a temporary resource windfall into lasting development (Ross, 2012).

Hydrocarbon rents and fiscal revenues are exposed to two distinct sources of change. First, international commodity prices fluctuate with global demand, supply decisions and geopolitical

disruptions, creating a source of fiscal volatility beyond the control of producing countries (see Godfrid and Pimenta, 2026). Second, the domestic production base can expand or contract over time. Production trajectories depend partly on policy choices and investment, but also on reserve availability, field maturity and depletion. This distinction matters for development strategy, as governments may be able to influence investment and the pace of extraction, but they cannot fully insulate public finances from global price cycles or offset a declining resource base indefinitely.

These contrasting production trajectories are already visible across the region. Brazil, Guyana and Argentina are driving much of the region's near-term fossil fuel supply growth. By contrast, Ecuador's oil production and Bolivia's gas output are currently declining, owing in part to factors including underinvestment; Mexico's oil production has also been falling as mature fields deplete, although expansion plans are in place; and Colombia's coal production is recovering from its recent decline, while the new administration's more supportive position towards the sector will probably affect its long-term trajectory (EIA, 2025; World Bank, 2026; DNV, 2025; EIU, 2026a; 2026b; Arena et al., 2025).

Countries with weaker fiscal, financial and institutional capacity face greater difficulties in managing the energy transition. Limited fiscal space constrains public investment and the ability to manage adjustment costs, while higher financing costs make it harder to mobilise capital for clean energy projects. Weaker institutional capacity can further limit governments' ability to plan, coordinate and implement transition policies. These constraints are particularly important in lower-income countries, where climate and development needs already compete for scarce public resources (Calcaterra et al., 2024; IMF, 2023). Bolivia, for example, stands out as economically vulnerable and hydrocarbon-dependent. The region also includes countries, such as Haiti, with no significant fossil fuel industry or modern renewable energy generation. As a result, they remain highly dependent on fossil fuel imports. Compounding the challenge, climate impacts can exacerbate existing economic constraints, increasing inflation and fiscal deficits (Pedersen, 2025; Delgado et al., 2021).

Although international commitments to phase out fossil fuels have increased, actual phase-out seems a distant prospect. E3G's NDC Energy Commitments Tracker (Marshall et al., 2026) finds that only a small share of LAC countries include pathways to wind down oil and gas production. Among the region's 14 oil and gas producing countries, 13 make no reference to reducing production in their latest nationally determined contributions (NDCs) submitted under the United Nations Framework Convention on Climate Change (UNFCCC). Colombia is the only country to include such a commitment, although it is neither quantified nor time-bound. Its durability may also be uncertain following the recent change in government. This contrasts with the region's stronger commitments on clean energy. As of April 2026, 88% of submitted LAC NDCs commit to increasing renewable energy deployment, and 56% include quantified or time-bound targets. NDCs increasingly set out a direction for renewables and, in many cases, the grids and storage needed to support them, but are much less developed on oil and gas wind-down, fossil fuel subsidy reform and the wider requirements of a managed transition.¹

Furthermore, national investment plans for fossil fuels in the region sometimes contrast with NDC commitments, with most countries continuing to pursue and expand fossil fuel activities (Kostroch and Vasquez-Baos, 2024). The gap between declared intentions to support the renewable energy transition and government action and incentives at the project level can

¹ In 2026, Colombia and the Netherlands led a global discussion on fossil fuel phase-out, which emerged from negotiations at the 30th meeting of the Conference of the Parties (COP30) to the UNFCCC, hosted by Brazil. Alongside Brazil and Colombia, participating LAC countries included Antigua and Barbuda, Chile, Dominican Republic, Guatemala, Jamaica, Mexico, Panama and Uruguay (Carbon Brief, 2026).

undermine the attainment of NDC targets.² It can also weaken the role of NDCs in signalling to investors that the policy environment is supportive of accelerating decarbonisation. This is especially important given that almost all submitted LAC NDCs contain commitments that are wholly or partly conditional on international support (Marshall et al., 2026).

2.3. A shallow foothold in green value chains

Breaking fossil fuel dependence and turning the region's clean energy and resource endowments into lasting development depends on whether countries repurpose existing capabilities or build new productive and technological strengths. This is not only a challenge for fossil fuel exporters. Even economies without fossil fuels must engage with the energy transition in ways that make it a lever for productive transformation and social inclusion. Such diversification need not come exclusively from green activities, but it is important that part of the emerging productive base is linked to the low-carbon transition if it is to be socially and economically sustainable.

Yet the gains associated with green technologies, including manufacturing capacity, innovation, skilled employment and export capacity, remain limited for many developing countries and tend to be geographically concentrated (Lebdioui, 2024). Renewable energy value chains provide a clear illustration of this concentration, and of the broader pattern of international specialisation that underpins it. LAC participates mainly through resource extraction, while higher-value stages remain concentrated elsewhere. This asymmetry is reflected in the distribution of export strengths across different segments of the solar and wind value chains. Given the importance of fossil fuels to the region's export revenues, this leaves a significant gap to fill.

To examine this pattern, we use the Decarbonisation Technology Strength (DTS) index developed by Rosenow and Mealy (2024), which measures export strength by combining the breadth of a country's comparative advantages across a value chain with the depth of its participation in global markets. We draw on the segment-level estimates produced by Aneise et al. (2026), who calculate the DTS separately for raw materials, processed materials, subcomponents and final goods in the solar and wind value chains. This allows us to identify where along these chains countries' export strengths are concentrated (see also Figure 2.5):

- **Chile and Peru** stand out in solar raw materials, but their DTS scores fall below the benchmark in the manufacturing and transformation stages. **Ecuador** shows a similar upstream concentration in the wind value chain, where balsa wood, used in the manufacture of wind turbine blades, provides a competitive advantage only in the first stage of the value chain.
- **Argentina, Colombia and Bolivia** display narrower and less consistent export strengths, with isolated positive scores in raw materials and weaker results across the remaining segments.
- **Brazil and Mexico** are the region's main exceptions, with export strengths extending beyond raw materials into downstream segments. Brazil shows the broadest profile in South America's wind value chain, particularly in processed materials, reflecting a competitive export position rather than domestically controlled technological capabilities. In solar, however, both remain more concentrated upstream.
- The remaining countries, including **Paraguay, Guyana, Suriname and Uruguay**, exhibit negative DTS values across virtually every segment of both value chains, indicating export strengths consistently below the benchmark throughout the chain.

² Brazil illustrates this tension particularly clearly. Much of the mitigation effort underpinning its NDC is expected to come from reducing deforestation and land-use emissions, while the government continues to pursue the expansion of domestic oil production (CAT, 2026a).

The conventional response of moving downstream does not automatically translate into greater domestic value capture. Some downstream activities, such as final assembly, can remain low-margin and generate limited technological learning, while higher value may be concentrated in more capability-intensive segments such as advanced processing, engineering-intensive components and specialised services. The priority is therefore not simply to move downstream, but to build capabilities in activities that generate income, employment and productive learning, whether linked to existing upstream strengths or to selected downstream segments (Aneise et al., 2026).

Figure 2.5. Decarbonisation Technology Strength (DTS) index values across renewable energy value chain segments across LAC countries (2019–24 average)



Note: Each dot reports the segment-level DTS, which combines the breadth and depth of a country's export strength. Zero represents the reference average; positive and negative values indicate performance above or below that benchmark. Colours identify value chain segments.

Source: Aneise et al. (2026)

3. Energy transition pathways

This section develops a typology to understand the different transition contexts countries face and locates selected countries within it.

3.1. A typology of transition contexts

To unpack the diversity of energy transitions across LAC, we position countries along two dimensions that shape their transition pathways. The first is their structural dependence on fossil fuels: the rents and fiscal revenues they generate, and their contribution to export earnings and foreign exchange. These factors indicate how embedded fossil fuels are in the economy and how challenging a phase-down is likely to be. The second is observed progress in the energy transition, particularly in clean energy deployment (see Figure 2.2) and energy sector decarbonisation.

The typology presented in Table 3.1 provides a tool for understanding the central challenges of the transition and potential pathways to address them. This is the report's central contribution. These profiles are analytical ideal-types, not rigid or deterministic boxes: countries sit along a continuum and some straddle categories, as examples provided in Figure 3.1 show. Additionally, the two dimensions are also not fully independent, since fossil fuel dependence both shapes and is shaped by transition progress. This reflects the purpose of the framework, which is to characterise transition situations and clarify possible pathways rather than isolate independent causal effects.

Table 3.1. The energy transition in Latin America and the Caribbean: a typology of transition contexts

	Limited progress in the energy transition	Advanced progress in the energy transition
Low fossil fuel dependence	Low-friction stragglers <i>Little or no fossil fuel rent, but limited finance, scale and institutional capacity constrain the transition</i>	Low-friction frontrunners <i>Clean energy reinforces existing development priorities rather than displacing entrenched interests</i>
High fossil fuel dependence	Fossil-locked <i>Dependence on fossil fuels slows the transition through macroeconomic and fiscal lock-in</i>	Dual-track transitioners <i>Strong transition progress alongside continued expansion of the fossil fuel economy</i>

Note: This typology is based on a qualitative assessment of the diversity of country trajectories across the region, informed by case studies (Godfrid et al., 2025) and other material. 'Dependence' refers to a country's current or prospective reliance on hydrocarbons as a source of government revenue and export. 'Friction' describes the degree of resistance a country faces in advancing the energy transition, particularly given vested interests.

Source: Authors' elaboration

The role of productive transformation differs across the typology. In some cases, decarbonisation already delivers substantial gains in energy security, affordability and environmental performance, while relatively little economic activity depends on fossil fuel production. In these cases, there is less pressure for the transition to generate new productive sectors (Möhle et al., 2026). This is particularly true for low-friction frontrunners and, for different reasons, many low-friction stragglers.

The pressure to develop green productive capacities is greater in fossil-dependent and dual-track economies, where diversification must ultimately provide alternative sources of exports, fiscal revenues, investment and employment as carbon-intensive activities decline. It is particularly strong where an established industrial base creates both the capacity and the strategic incentive to move into green activities, as in dual-track transitioners. Fossil-locked economies consequently

face the sharpest mismatch: productive diversification is most necessary precisely where the fiscal, macroeconomic and political conditions for achieving it are often most challenging.

3.2. Country situations

I. Low-friction frontrunners

Low-friction frontrunners combine low fossil fuel dependence with advanced energy transition progress. Clean energy reinforces existing development priorities rather than displacing entrenched interests. With little or no hydrocarbon rent, export income or private profit tied to fossil fuel production, decarbonising the power sector faces little domestic resistance and instead supports pre-existing goals of energy security, cost stability and competitiveness. This also means that productive transformation is less critical to the development rationale for the transition: these economies can capture substantial gains from cleaner energy even when much of the associated technology is imported.

Uruguay is the clearest example. The absence of domestic fossil resources combined with heavy dependence on imported oil and exposure to hydrological variability, made energy security and price stability central objectives of the transition. The Energy Policy 2005–2030 provided the framework for a rapid renewable energy build-out, raising the share of renewables in electricity generation to around 97–98% in 2017 while reducing exposure to fuel-price shocks (Corrêa et al., 2022; SOAS DLD, 2025). Uruguay is now pursuing a self-described ‘second energy transition’, focused on decarbonising energy consumption more broadly and advancing sustainability across the economy (Godfrid et al., 2025).

Chile followed a similar logic, with energy security and economic competitiveness as its main drivers. With only limited fossil fuel reserves, domestic energy demand depended on imported gas, oil and coal, leaving the country vulnerable to supply disruptions and price volatility. Its exceptional solar and wind resources offered a way out: regulatory reforms and long-term auctions drove large-scale investment and lowered generation costs, raising the share of renewables in electricity generation to more than 60% by 2025 and enabling the progressive phase-out of coal-fired power (Cunial, 2024; IEA, 2025b; DeStephano et al., 2022).

II. Fossil-locked economies

Fossil-locked economies combine high fossil fuel dependence with limited progress in the energy transition, partly reflecting fiscal and macroeconomic lock-in. Fossil fuel production supports public revenues, export earnings, investment and private rents, creating structural dependencies that raise the economic and political costs of moving away from hydrocarbons. This does not mean renewables stall altogether: deployment can advance where projects are commercially attractive, without fundamentally altering the productive structure on which the economy depends. But it does mean that productive diversification is more central to the development challenge of the energy transition in these economies. Over time, new activities must provide alternative sources of exports, fiscal revenues, investment and employment as carbon-intensive sectors decline. The key characteristic of these economies is that they are actively expanding fossil production, or have already built their structure around it, and find it hard to diversify away as fossil fuel dependence is deeply embedded in their productive structure.

Guyana, Trinidad and Tobago, and Suriname all have or are actively moving towards strong fossil fuel fiscal dependence. In recent years, Guyana has experienced an oil production boom, with hydrocarbons becoming its main driver of economic growth (IDB, 2026; EIU, 2026c); while Suriname is in the process of becoming locked in as it prepares to bring significant offshore production online for export in 2028 (IDB, 2026). Both face the challenge of managing expanding oil industries and associated revenue inflows while global decarbonisation advances (Driver, 2024). What makes their situation particularly unusual is the coexistence of fossil fuel expansion and exceptional forest endowments. Forests cover around 85% of Guyana and 90% of Suriname,

while Suriname remains a net carbon sink. This creates a distinctive climate policy tension, in which the preservation of large forest carbon stocks coexists with rapidly expanding hydrocarbon production. Trinidad and Tobago's situation is different, as its economy has long been tied to hydrocarbons, with gas production expected to increase in 2027 (S&P, 2026). All three countries have articulated diversification agendas, although these differ in form and have seen limited implementation.³

Argentina sits between the fossil-locked and dual-track cases. Renewable additions now depend less on energy-security imperatives than on project-level economics, while no policy framework organises an ambitious new phase of deployment. Meanwhile, the expansion of the Vaca Muerta shale oil and gas basin and its associated infrastructure is consolidating hydrocarbons as a long-term source of export earnings, reorienting policy towards fossil fuel-led growth.⁴ At present, policy measures to advance the clean-energy agenda are largely absent, while policy priorities focus on attracting investment to sectors where Argentina already holds comparative advantages, particularly hydrocarbons and minerals (Godfrid et al., 2025; Aneise and Möhle, 2024). Relative to other fossil-locked economies, Argentina has a more diversified economic base, meaning hydrocarbons are unlikely to become the dominant source of fiscal revenues. At the same time, its large renewable endowment leaves open the possibility of a more balanced, dual-track strategy should policy incentives shift.

Mexico favours fossil-fuel-based energy generation, has sent mixed signals on the role of renewables, and has experienced slower renewable energy deployment in recent years (CAT, 2026b). Rather than treating declining hydrocarbon output as an opportunity to accelerate the shift towards clean energy, the government aims to boost production over the next decade through the state oil company PEMEX, which dominates the sector and sits at the centre of Mexico's national energy strategy (ITA, 2026; EIU, 2026d). Achieving financial stability at PEMEX, which is heavily indebted, is a policy priority for the government (CAT, 2026b). Advancing renewables and electrification would be beneficial to the country's energy security. Although it is a fossil fuel exporter, Mexico remains heavily reliant on imported fossil fuels, with more than half of its electricity in 2024 generated from natural gas imported from the United States (EMBER, 2025b). At the same time, Mexico's comparatively deep manufacturing base gives it greater scope than most fossil-locked economies to connect the transition to productive upgrading and participation in clean-technology value chains. Like Argentina, this places it closer to the dual-track boundary. Whether that potential is realised depends on accelerating transition progress. In this regard, recent plans envisage raising the renewable share of power generation from around a quarter to nearly 40% by 2030 (SENER, 2025), but these targets remain prospective as deployment continues to be slow (CAT, 2026b).

In **Colombia**, fossil fuels remain a major source of fiscal revenues, foreign investment and exports (IMF, 2025), even though the country's power system is largely clean, with hydropower supplying around 60% of electricity generation (IEA, 2024). The nation's fossil dependence runs along two tracks. On one side are the fiscal and export accounts, led by coal and oil; on the other is the broader energy system, particularly transport and industry. Although Colombia has announced several initiatives and commitments aimed at reducing its fossil fuel dependence, implementation has been limited, despite two successive governments promoting renewables, and the fossil-lock

³ Suriname expresses particular interest in sustainable development, stating in its latest NDC that it is committed to "pioneering a sustainable development model for all climate-vulnerable nations rich in natural capital" (Suriname, 2025, p. 7).

⁴ This policy orientation is relatively recent. Argentina's renewable energy deployment accelerated from the mid-2010s, supported by a stronger policy framework and successive investment programmes. The country's return to net energy importer status in 2011 increased the urgency of reducing exposure to imported fuels, prompting the adoption of Law 27,191 and the RenovAr auctions, which supported deployment through targets, long-term contracts and public guarantees (Roger and Arroyo, 2023; Barrera et al., 2022). That energy-security imperative has since weakened as the development of Vaca Muerta reduced import dependence and redirected policy attention towards hydrocarbon production and exports.

remains largely intact. This reflects the difficulties of moving away from an economic model that remains closely tied to hydrocarbons. These challenges are compounded by restricted access to finance, external debt pressures, credit-rating constraints, political instability and governance challenges. Colombia's outgoing administration illustrates the tension between ambitious transition commitments and persistent structural dependence on fossil fuels (CAT, 2025).

Ecuador and Bolivia both combine structural dependence on fossil fuels with declining production, driven by a combination of investment, institutional and political factors, making productive diversification an urgent challenge. In both cases, incorporating renewables could strengthen energy security, although the nature of the challenge differs. In Ecuador, oil underpins exports and fiscal revenues, but the electricity system is largely hydro-based. A key driver of renewable energy adoption is therefore energy security, specifically the need to diversify away from hydrological risk (World Bank, 2024a; Godfrid et al., 2025). In Bolivia, natural gas has historically underpinned exports and fiscal revenues, much as oil does in Ecuador, but it is also the predominant source of electricity generation. The sharp decline in gas output over the past decade has simultaneously affected exports, fiscal revenues and domestic energy supply, contributing to deep macroeconomic challenges. Expanding renewables would ease pressure on natural gas while improving energy security. A key step towards this is addressing domestic gas subsidies, which make renewable generation uncompetitive (Lamby et al., 2026).

III. Low-friction stragglers

Low-friction stragglers have little fossil rent, yet their energy transition still stalls. Although the incentives favour the transition, structural barriers hold it back. High capital costs, small domestic markets, weak grids and limited institutional capacity make it difficult to finance and build clean energy at scale. Several Caribbean countries illustrate this situation. **Haiti and Grenada**, for example, remain heavily reliant on imported diesel for power, yet face strong challenges in securing affordable financing for the renewable energy that would replace it.

Peru is a particular kind of low-friction straggler. Its economy is structurally dependent on mining, rather than on hydrocarbons. Electricity generation relies largely on hydropower and domestic gas, while solar and wind remain barely deployed despite strong potential. The country's stalled energy transition is constrained less by fossil fuel lock-in than by broader institutional and political instability, which undermines investment and policy implementation across the economy, including in mining and the energy transition (Godfrid et al., 2025; EIU, 2025d).

Paraguay also faces political and institutional constraints, but has no domestic fossil fuel production. Its power system is already almost entirely clean, and the country is Latin America's largest net electricity exporter (IRENA, 2021). Yet this reflects an inherited hydropower legacy rather than an active transition. Its challenge lies in diversifying its electricity mix to increase resilience (World Bank, 2024b) and in leveraging its clean electricity potential through demand side electrification, particularly in the transport sector. These challenges appear to reflect limited state capacity, including weak institutions and a lack of policy instruments to advance electrification.

IV. Dual-track transitioners

Dual-track transitioners combine high fossil fuel dependence with advanced progress in the energy transition. In this type, continued hydrocarbon development coexists with substantial advances in clean energy and decarbonisation. A key factor sustaining this duality is the ability to anchor the green transition in a broader productive-development strategy. When clean-energy expansion generates domestic investment, supplier development, technological learning and new industries, it creates economic constituencies and positive policy feedbacks that can give the green track its own political and economic momentum (Eicke and Weko, 2022). Achieving this combination requires an industrial base and policy capacity capable of linking energy deployment to productive transformation, conditions that remain rare in LAC and help explain why this is the

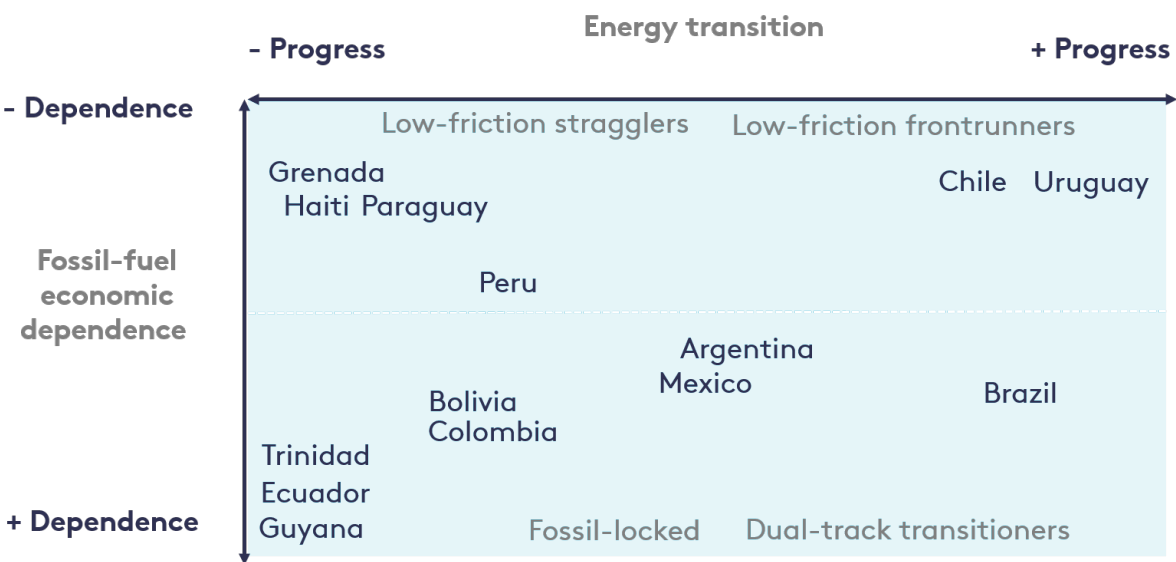
least populated category in the typology (see Figure 3.1). Internationally, the profile is most clearly illustrated by China, where continued fossil fuel expansion has coexisted with the state-led development of globally competitive solar, wind, battery and electric vehicle (EV) industries. The comparison is imperfect, however, because China’s fossil fuel expansion is driven primarily by coal-based energy-security considerations rather than the export dependence characteristic of fossil-producing economies in LAC.

Brazil is the clearest regional expression of this pattern. Brazil’s fossil fuel expansion has not crowded out the green transition; rather, the two have developed in parallel. Its power system, as in much of the region, was already largely clean and anchored in hydropower, while fossil dependence lies primarily in oil and gas production for exports and the wider economy rather than in electricity generation. Non-conventional renewables gained prominence after the 2001 electricity crisis exposed the vulnerability of a power system heavily reliant on hydropower (Hochstetler, 2021). Wind entered less as a means of decarbonising an already-clean grid than as a way of strengthening energy security against hydrological risk. Brazil’s industrial base and policy capacity subsequently allowed wind deployment to be linked to domestic production, supplier development and technological learning. This helped give the green transition its own productive foundations, allowing it to advance alongside continued oil and gas expansion as a source of investment, employment and diversification (Pereira da Silva et al., 2026). More recently, the development of battery and EV industries has demonstrated how Brazil’s industrial capacity can support and benefit the green transition. By contrast, the rapid deployment of solar power since 2023, driven by regulatory changes, has occurred with limited industrial upgrading.

Brazil’s green track has developed productive foundations, but continued oil and gas expansion may still create fiscal, infrastructural and political lock-ins. Although Brazil currently fits the dual-tracker typology, the conditions that would allow it to remain on this path, and ultimately complete the transition rather than become fossil-locked, remain uncertain.

Figure 3.1 synthesises the analysis presented in Sections 2 and 3, mapping countries’ varied situations. This typology is intended to support thinking about how change might be pursued under these different circumstances, which is the central question addressed in Section 4.

Figure 3.1. Indicative country positions within the transition typology



Note: Country positions are indicative, as some countries lie close to category boundaries or display characteristics of more than one type.

Source: Author’s elaboration

4. Making the energy transition real

A country's transition situation defines the nature of the challenge it faces, but not its capacity to respond. Whether governments can act depends on the policy space⁵ they possess: the room to choose a strategy, implement it and sustain it over time. This section examines the ability of countries across the different positions within the typology to make the transition happen, focusing on three key dimensions:

- **Domestic capabilities** determine whether a country has in place the institutions, infrastructure, finance, productive capacity and technical skills needed to advance the transition, and whether public and private actors can coordinate investment towards strategic sectors.
- **Political settlements** shape how state action is received and what it achieves in practice: the transition redistributes adjustment costs, fiscal revenues, economic opportunities and the rents underpinning existing growth models, social legitimacy, coalition-building and distributive politics become central.
- **External constraints** shape the room for manoeuvre available to governments through trade and investment rules, access to finance and export markets, external financing constraints and debt obligations, and the unequal distribution of technological capabilities and economic bargaining power.

4.1. Domestic capabilities

Across the typology, countries face the shared challenge of building both state- and actor-level capabilities to advance the transition, though the specific capabilities required vary according to the stage of the transition. Domestic capabilities comprise the institutional, administrative, financial, productive and technological resources that countries can draw on to design and implement transition strategies. They reside partly in the state, through its ability to set priorities, coordinate actors, mobilise resources and sustain policy over time, and partly in the wider economy, through firms, workers, infrastructure, financial systems and accumulated knowledge.

In LAC, a central role of the state is to create the macroeconomic and regulatory conditions needed to attract clean investment, as high financing costs remain a major constraint across the region. These constraints are particularly significant for low-friction stragglers and institutionally weak fossil-locked economies. Small markets, shallow domestic financial systems and weak grids limit the scale and bankability of projects, while histories of price volatility and debt, especially in fossil-dependent economies, raise the cost of accessing international capital (Ameli et al., 2021). Ecuador, a fossil-locked economy, illustrates the trap. Years of oil-dependent public spending have left it exposed to price volatility and burdened by high levels of debt, constraining access to affordable finance even as it seeks to diversify both its exports and its hydro-dependent electricity generation system (EIU, 2026a; Godfrid et al., 2025). Wise macroeconomic management, debt sustainability and policy consistency are therefore essential pillars of a successful transition (Godfrid and Stern, 2026).

Mobilising investment is only one of several tasks the state must undertake, and the balance among them shifts as the transition advances. Countries that have largely decarbonised electricity generation increasingly face the more complex task of integrating renewable energy into the wider economy, as low-friction frontrunners do. In Chile, where renewables supplied over 60% of generation in 2025, the challenge has shifted from deployment to integration. Solar

⁵ Policy space means the regulatory, fiscal, technological, productive, political and institutional capacity of governments to design, implement and sustain policies over time (Schteingart and Möhle, 2026).

generation, concentrated in the north, now outpaces the grid's capacity to transmit it, and curtailed wind and solar generation rose to nearly 6 terawatt-hours (TWh) in 2025, congestion the state intends to address through storage, new transmission infrastructure and fast-tracked projects (EMBER, 2025a). Uruguay, another frontrunner with an electricity system that is nearly fully renewable, has turned to its self-described 'second transition' of decarbonising transport and industry, where it now leads the region in EV adoption. This shift brings a new set of challenges, including accommodating higher and more distributed electricity demand, expanding storage capacity and adapting a fiscal base built on imported fuel taxes that widespread electrification will progressively erode (World Energy Council, 2025).

Beyond attracting external capital, states also need the capacity to capture and manage resource rents effectively. Whether resource wealth translates into sustained development gains depends on several factors, including governments' ability to secure a sufficient share of those rents, manage revenues over the commodity cycle, and direct them towards economic diversification (Humphreys et al., 2007). The mechanisms for doing so differ across sectors. In hydrocarbons, fully or partially state-owned companies such as PEMEX, Ecopetrol, Petrobras and YPF can provide an additional channel through which governments capture resource rents, including through dividends, alongside taxes and royalties.⁶ By contrast, mining in LAC is more dependent on private operators, making taxes, royalties and contractual arrangements the principal channels through which the state captures a share of the rents generated (Kostroch and Vasquez-Baos, 2024).

Managing those revenues also requires strong fiscal and institutional frameworks to reduce pro-cyclical spending, smooth income over time and invest temporary windfall revenues before fiscal conditions become more restrictive. Sovereign wealth funds are one possible mechanism for transforming short-lived resource revenues into more durable sources of public income (Grashof and Basilico, 2025; Pereira da Silva, 2026). This issue is particularly urgent for fossil-dependent economies. In these cases, declining global demand and the risk of stranded carbon-intensive assets could gradually weaken public revenues. If action is postponed, fewer resources will be available to finance diversification and adjustment (UNDP, 2023; Cherif et al., 2024; Sidicaro et al., 2025).

State capabilities are also central to using the energy transition as a lever for productive transformation. Green industrial policy requires governments to coordinate instruments across infrastructure, finance, skills, innovation, regulation and supplier development, and to adapt these interventions as technologies and markets evolve (Altenburg and Rodrik, 2017; Andreoni and Chang, 2019; Lebdioui, 2024). Most commonly, this involves building new economic strengths on the basis of existing capabilities or comparative advantages, though it can also extend to entirely new activities. Opportunities linked to the green transition span a wide range of sectors, including not only energy, but also agriculture, the circular economy, construction (Albertone et al., 2025a), and nature-based services such as ecotourism.

Yet productive transformation cannot be driven by state action alone. While state capabilities determine whether a transition strategy can be implemented, the capabilities embedded in firms, workers and institutions shape what that strategy can ultimately achieve. This becomes particularly important in resource-dependent economies, where the decline of carbon-intensive activities creates the need for new sources of growth, employment and fiscal revenue. Among the capabilities required for this process, productive and technological capabilities are especially important because they help determine not only whether countries can enter emerging green industries, but also whether they can participate in their higher-value-added segments.

⁶ The contrast is a matter of degree. Chile keeps Codelco, one of the world's largest copper producers, in public ownership, while a recent wave of policy has expanded the state's role in lithium, from Bolivia's YLB and Mexico's LitoMx to Chile's National Lithium Strategy, under which Codelco takes majority stakes in strategic salt flats (UNCTAD, 2023).

Economies generally diversify into activities related to what they already know how to do (Hausmann and Klinger, 2006; Hidalgo et al., 2007; Aneise et al., 2026).

For mining economies, some of the most accessible opportunities lie in backward linkages rather than immediate downstream processing (Murguía et al., 2023). Equipment, engineering, maintenance, environmental management, software and specialised services draw on capabilities that are more widely available than the scale, energy supply and frontier technologies required for mineral refining or advanced manufacturing (Morris et al., 2012). The same capability-based logic applies to the new value chains created by the transition itself: the most viable entry points are those that build on assets and capabilities a country already possesses. For example, the prospect of green hydrogen production in Chile and Uruguay rests on abundant low-cost renewable electricity, while wind-turbine component manufacturing in Brazil, a dual-track transitioner, builds on an established industrial base.

4.2. Domestic political settlements

The transition redistributes costs, benefits and rents across economic and social actors. This can strengthen some interests while weakening others, reshaping the political coalitions that support or resist change. Fossil fuel subsidy reform, coal-plant closures, new transmission infrastructure and changes in resource taxation can impose concentrated losses on firms, workers, consumers and local communities, while many of their benefits are broader and more diffuse. Their implementation therefore depends not only on policy design, but also on the prevailing political settlement (Kelsall et al., 2022). This shapes which actors support or resist change, the resources they can mobilise, the coalitions governments are able to build, and the extent to which losses can be anticipated, compensated for or negotiated.

These dynamics are especially important in LAC because fossil fuel sectors occupy a prominent place in the economic and political structures of many countries. Their economic weight gives firms, workers and producing regions linked to these sectors a strong stake in how the transition unfolds, while governments themselves often depend on the revenues and economic activity they generate.

Governments therefore face a dual challenge: fostering the activities and technologies that can underpin a lower-carbon economy while continuing to manage the interests, revenues and employment associated with established carbon-intensive sectors. This tension is reflected in Brazil's dual-track trajectory. Workers and producing regions may resist the decline of established activities; incumbent firms may seek to delay regulation or preserve subsidies and market advantages; emerging industries may demand infrastructure, finance or preferential policy support; and consumers may oppose reforms that raise energy or transport costs (Hochstetler, 2021). Transition policy consequently involves bargaining over both the distribution of adjustment costs and the allocation of new opportunities.

Fossil fuel subsidies provide a particularly clear example of these political dynamics. They can become embedded in political settlements on both the supply and demand sides: producers and other beneficiary sectors have incentives to preserve existing support, while households and firms may resist reforms that translate into higher fuel, electricity or transport costs. The fiscal implications can be substantial. In 2024, explicit fossil fuel subsidies in LAC (measured as direct support to producers) averaged 0.62% of GDP, and reached at least 3% in Venezuela, Ecuador and Suriname (OECD et al., 2026). Reform requires managing competing interests and the distributional effects of higher energy prices. This can often be achieved through targeted compensation, careful sequencing and credible communication (Inchauste and Victor, 2017; Moerenhout et al., 2024). Past experiences in countries such as Bolivia and Mexico show that subsidy removal can carry significant political costs, with public trust playing an important role in shaping societal responses (Montes de Oca Leon et al., 2024).

In fossil-locked economies, political resistance can therefore emerge from actors seeking to preserve activities that remain economically and fiscally important even as their long-term prospects weaken. National oil companies, private producers, suppliers, workers and producing regions may all have an interest in delaying reforms that reduce production, subsidies or investment. Governments themselves can also face conflicting incentives when they depend on hydrocarbon revenues to finance public spending and debt repayment. The political challenge is therefore not only to introduce cleaner alternatives, but also to manage the decline of activities around which established interests and fiscal arrangements have developed, while creating credible sources of employment, revenue and investment for the groups and territories exposed to that decline. Colombia illustrates these dynamics: coal-sector incumbents have used institutional, instrumental and discursive strategies to defend extraction against growing economic and political pressures for change (Strambo et al., 2020).

Mining creates a different political economy. Because extraction in LAC is more heavily undertaken by private operators, governments must negotiate larger shares of rent distribution through taxes, royalties, contracts and regulation, while communities and producing regions often bear a disproportionate share of environmental and social impacts. Expansion driven by demand for transition minerals can therefore generate conflict even when it contributes to global decarbonisation. Governments, firms, local authorities and affected communities may disagree over the distribution of revenues, access to land and water, environmental standards, consultation processes, and the local benefits generated by extraction (Díaz Paz et al., 2023).

Social legitimacy is essential. Extraction and transition infrastructure can generate nationally distributed benefits while concentrating environmental disruption, land-use pressures and livelihood losses in particular territories. Where affected communities perceive that costs are borne locally while benefits accrue elsewhere, opposition can delay projects, weaken policy continuity and undermine broader transition strategies (Bainton et al., 2021). Peru, a low-friction straggler, illustrates this tension. Mining is a major source of exports and public revenue, yet political instability, institutional weakness and persistent disputes over the local distribution of costs and benefits have contributed to recurrent socio-environmental conflict. In February 2024, almost 58% of active social conflicts in Peru were socio-environmental, and 65% of these were associated with mining (Gobierno del Perú, 2024). Addressing these challenges requires stronger coordination among authorities, credible dialogue with communities and action against illegal mining (Godfrid et al., 2025).

The political challenges associated with the transition differ across the typology. Fossil-locked economies are more likely to confront resistance from incumbents and constituencies tied to hydrocarbons, particularly when reforms threaten subsidies, production, employment or fiscal revenues. Stragglers, by contrast, may face less organised resistance from fossil fuel incumbents but also tend to lack strong constituencies capable of sustaining transition efforts, leaving reforms more exposed to political fragmentation and local conflict. Low-friction frontrunners increasingly face conflicts arising from the next stages of decarbonisation, as new transmission, storage and other infrastructure redistribute environmental and territorial costs and as the transition deepens on the demand side. For example, in Chile, as renewable deployment has accelerated, transmission projects have encountered community opposition, including mobilisation in Chiloé over the local and environmental impacts of a proposed transmission line (Cabaña, 2026).

A durable transition requires political arrangements capable of managing distributive conflict without repeatedly blocking or reversing change. This means balancing incumbent resistance, emerging interests and the claims of affected workers and communities. At the same time, sustaining sufficient legitimacy for adjustment is essential. Where these arrangements hold, resource wealth and green opportunities can support diversification. Where they fracture, conflict and short-term bargaining can undermine structural transformation.

4.3. External constraints and sources of leverage

Domestic capabilities and political settlement conditions interact with constraints and sources of leverage rooted in each country's position in the global economy. Trade and investment rules, the international financial architecture, and the global distribution of productive and technological capabilities shape the policy space available for any transition strategy. For LAC, these forces often reproduce structural asymmetries in access to finance, technology, markets and bargaining power.

Trade and investment rules shape both the policy space available to governments and the costs of using it. These constraints arise from a layered system of multilateral rules and increasingly deep bilateral and regional trade and investment agreements. Although the multilateral enforcement architecture has weakened in recent years, bilateral and regional agreements often extend beyond multilateral commitments and define the effective boundaries of the national policy space. Such rules can constrain the use of tariffs, certain subsidies, local-content requirements and other performance requirements, as well as preferences in covered public procurement. These commitments do not eliminate government discretion. However, they can narrow the range of instruments available to pursue transition objectives and raise the legal or economic costs of using those that remain.

Deeper integration is therefore double-edged. It secures market access and can enhance policy credibility and reduce perceived risk. But it can sometimes restrict the use of some policy instruments (Schteingart and Möhle, 2026). Chile illustrates this tension. Its dense network of trade agreements, spanning the European Union, the US and China and covering the vast majority of its trade, has anchored export access and investment (Álvarez and Andreasen, 2024; Chumacero et al., 2004). Yet some of these commitments also constrain tariffs, performance requirements and other selective instruments that the government might otherwise use to shape the transition.

A second channel reflects the structural distribution of productive and technological power. Control over the manufacturing and, above all, the refining and processing stages of clean-technology value chains largely determines how much of the value added accrues to resource holders. The lithium triangle of Chile, Argentina and Bolivia (the latter two being fossil-locked) holds a large share of global reserves, while Chile and Peru dominate copper mining. Yet the downstream refining, and cell and component manufacturing activities that capture the highest margins remain concentrated abroad (Aneise et al., 2026). Much of that concentration is centred in China, which has built a dominant position in solar modules, batteries and the processing of critical minerals. However, this dominance is not only a constraint. China can also serve as a source of technology, finance and investment, and the recent expansion of its outward manufacturing, driven by access to host-country and third markets as well as raw material inputs, creates opportunities that recipient countries should seek to capture. The extent to which they can do so depends on the bargaining position each country holds and on the state capabilities needed to attach and enforce conditions such as technology transfer and local linkages (Xue and Larsen, 2025).

The macroeconomic and financial architecture of the global economy similarly puts pressure on governments' ambitions. Countries that do not issue reserve currencies occupy a subordinate position in the international monetary hierarchy. They face tighter external constraints, borrow under conditions they do not control, and often see debt stress translate directly into a narrower fiscal and policy space (Schteingart and Möhle, 2026). For some fossil-dependent economies, these constraints are reinforced by financing arrangements linked to future hydrocarbon sales or revenues, which can pre-commit part of future export earnings and further narrow the scope for adjustment. Ecuador and Venezuela provide prominent examples of oil-linked financing arrangements with external lenders (IMF, 2020; Mihalyi et al., 2020). These pressures can be compounded by the international regulatory framework (see Pereira da Silva, 2025). For example, credit-rating methodologies incorporate risks such as political fragility but often fail to fully

recognise instruments designed to mitigate them, including multilateral development bank guarantees (Godfrid and Pereira da Silva, 2025; Rojas-Suarez, 2025).

Regional coordination offers one way to address these constraints and strengthen the leverage available to individual countries. Small markets, fragmented capabilities and competition for the same pools of foreign investment can reduce the effectiveness of isolated national strategies, particularly when several countries target similar sectors, such as critical minerals, hydrogen, batteries and low-carbon inputs. Without coordination, these efforts can generate duplicated investments, leave gaps across regional supply chains, weaken bargaining power and encourage competition through tax concessions or lower standards.

Existing regional cooperation frameworks have done little to overcome this fragmentation. On the one hand, common markets and free trade areas have had limited impact on productive integration, while intra-regional trade remains low and productive structures remain weakly connected. Overall intra-regional trade in LAC accounts for only around 11% of the region's total trade. This reality holds across trade blocs: intra-regional trade accounts for 10% of Mercosur's total trade, 13% in the Central American Common Market, 7.5% in the Andean Community, and 2.5% in the Pacific Alliance. On the other hand, more ambitious forms of regional cooperation modelled on the EU have also proved difficult to sustain. The most emblematic example of this ambition is the Union of South American Nations (UNASUR), which did not survive the political realignments that followed the decline of the Pink Tide of left-leaning governments in Latin America.

The discussion needs to focus less on integration and more on coordination. Strategic coordination prioritises flexibility over rigid institutional commitments and quick gains over overambitious agendas. It can be advanced through the creation of coordinating councils that help identify complementary specialisations, shared infrastructure needs and supply-chain gaps, support common standards, and strengthen joint bargaining with investors, while leaving countries responsible for designing and implementing their own strategies (Albertone and Lebdioui, 2026; Albertone et al., 2025b).

4.4. Key insights for advancing the transition across the typology

Table 4.1 synthesises key considerations for advancing the energy transition across each ideal type, organised around the three dimensions that shape the policy space. The most binding constraint differs across types.

Table 4.1. Common traits and transition implications by ideal type

	Domestic capabilities: resources to advance action	Political settlements: interests at play	External constraints: position and potential leverage
Low-friction frontrunners	Clean energy deployment capabilities in place; needed capabilities evolve as the transition advances, e.g. from deployment to integration	Conflict shifts as transition deepens, e.g. with demand-side decarbonisation	Upstream leverage in minerals/renewable power; integration secures market access but constrains industrial-policy instruments
Fossil-locked	Productive diversification most necessary; sometimes there is capability to repurpose; fiscal, macro and political conditions often weak	Incumbent resistance over plant closures, rents and subsidy reform	Demand decline and stranded-asset exposure; investment constrained by, e.g. macroeconomic conditions, debt, investment environment
Low-friction stragglers	Binding constraints include small markets, shallow finance, weak grids and limited institutional capacity	Little resistance, but no strong constituency pushing for transition either	Worst terms in the financial architecture; least able to advance without external support
Dual-track transitioners	Capability present on both tracks; coordination and sequencing necessary	Green and fossil fuel coalitions coexist; contestation over fiscal and policy priority	Scale and securing upstream inputs could benefit from regional demand and coordination

Source: Authors

5. Conclusion

The energy transition is, at its core, a process of economic and productive transformation and must therefore be understood as a development challenge, albeit one whose stakes vary across Latin America and the Caribbean. The opportunities and risks countries face vary according to their circumstances. For some, advancing the clean economy and phasing out carbon-intensive activities offers substantial gains with little friction against existing development models. For others, particularly those entrenched within fossil fuel production, decarbonisation entails conducting complex diversification processes, often under conditions of high debt and tight fiscal constraints, that distribute costs unevenly across incumbent industries, workers and affected communities.

Making the transition happen in LAC means working with different development pathways.

Governments need to identify the risks and opportunities associated with their particular circumstances and shape their strategies accordingly. For each group of countries identified in this report, the transition means something different. In every case, however, proactive planning is essential if the transition is to become a driver of development rather than a source of disruption. What countries can ultimately make of these pathways depends on the policy space available to them: their domestic capabilities, political settlements and external room for manoeuvre.

- For **low-friction frontrunners**, the transition is an opportunity to leverage the strategic advantages of a clean energy matrix, deepen decarbonisation beyond electricity, and expand the green economy. The key challenge lies primarily in capabilities, as priorities shift from deployment towards system integration and demand-side decarbonisation, particularly in transport and industry, where interests beyond the energy sector come into play.
- For **fossil-locked economies**, the transition is a diversification imperative, as it calls into question existing development models and exposes the risks associated with dependence on an industry set to decline. The challenge is to address capabilities and political settlements together, with the expansion of green productive capacity playing a central role in making the transition socially and economically viable. As the transition implies substantial reallocation of capital, evolving into a dual-track economy may represent an important intermediate step.
- For **low-friction stragglers**, the transition is a development lever through which long-standing constraints, including high capital costs, small markets, weak grids and limited institutional capacity, can be addressed. Because these constraints are simultaneous and mutually reinforcing, progress depends heavily on international support across finance, infrastructure and institutional capacity.
- For **dual-track economies**, the transition is an opportunity for productive expansion, combining the growth of green sectors with the challenge of preventing the parallel fossil fuel economy from creating deeper lock-ins. One potential pathway is to channel revenues from fossil fuels into the green economy, progressively strengthening its role within the broader development model.

For LAC, the central implication is that climate policy cannot be separated from development strategy. The transition is reshaping sources of growth, employment, fiscal revenue and comparative advantage across the region, while placing new demands on infrastructure, institutions and productive capabilities. Natural-resource dependence makes these shifts particularly consequential, but the broader challenge is how to translate them into more resilient, diversified and higher-value development pathways. Regional scholars have examined these

questions for decades, yet they often remain peripheral to international climate debates. Bringing them to the centre is essential for making the transition feasible and desirable.

Although the typology was developed around the particular configurations found in LAC, its underlying logic may also prove useful for comparing transition pathways elsewhere, offering a potential avenue for future research.

References

- Ahuja K and Hausmann R (2025) *Catalysing economic growth through powershoring*. <https://climate-club.org/wp-content/uploads/2025/11/Industry-on-the-road-to-2050.pdf#page=40&zoom=100,92,114>
- Albertone B, Kadi THE, and Lebdioui A (2025a) Development rethought or forgotten? A review of the UNCTAD Trade and Development Report 2024. *Development & Change* 56(4): 1084.
- Albertone B, Lebdioui A and Yean TS (2025b) *Regional coordination of green industrial policies: what can we learn from the ASEAN experience?* Technology, Industrialisation and Development (TIDE) Centre, University of Oxford, Working Paper 93.
- Albertone B and Lebdioui A (2026) *The regional coordination of industrial policy: a new framework for coordinative optimisation*. Technology, Industrialisation and Development Centre (TIDE), University of Oxford, Working Paper 96.
- Altenburg T and Rodrik D (2017) Green industrial policy: accelerating structural change towards wealthy green economies. In Altenburg T and Assmann C (Eds) *Green industrial policy: concept, policies, country experiences* (pp. 1–20). UN Environment and German Development Institute.
- Álvarez R and Andreassen E (2024) Exploring the effects of FTAs on Chilean exports: heterogeneous responses and financial constraints. *Estudios de Economía* 51(2): 299–324. <https://doi.org/10.4067/S0718-52862024000200299>
- Ameli N, Dessens O, Winning M, Cronin J, Chenet H, Drummond P, et al. (2021) Higher cost of finance exacerbates a climate investment trap in developing economies. *Nature Communications* 12: 4046. <https://doi.org/10.1038/s41467-021-24305-3>
- Andreoni A and Chang HJ (2019) The political economy of industrial policy: structural interdependencies, policy alignment and conflict management. *Structural Change and Economic Dynamics* 48: 136–150. <https://doi.org/10.1016/j.strueco.2018.10.007>
- Aneise AJ, Mendoza F, Möhle E, Bril Mascarenhas T and Vezzato J (2026) *Choosing the ladder. Productive specialization strategies for renewable energy in the Global South*. Fundar.
- Aneise AJ and Möhle E (2024) Argentina in the face of climate change: rethinking development in a transitioning world. *Fundar*. https://fund.ar/wp-content/uploads/2024/11/Fundar_Argentina-in-the-face-of-climate-change_CC-BY-NC-ND-4.0.pdf
- Arena M, Garcia-Huitron A, Huang B, Kolpakova D, Perrelli R, Shah A et al. (2025) *Macro-fiscal impacts of Colombia's energy transition plan*. International Monetary Fund. <https://www.elibrary.imf.org/view/journals/018/2025/145/018.2025.issue-145-en.xml?cid=572090-com-dsp-crossref>
- Bainton N, Kemp D, Lèbre E, Owen JR and Marston G (2021) The energy-extractives nexus and the just transition. *Sustainable Development* 29(4): 624–634. <https://onlinelibrary.wiley.com/doi/full/10.1002/sd.2163>
- Barrera MA, Sabbatella I and Serrani E. (2022) Macroeconomic barriers to energy transition in peripheral countries: the case of Argentina. *Energy Policy* 168: 113117. DOI: 10.1016/j.enpol.2022.113117
- Blimpo MP and Cosgrove-Davies M (2019) *Electricity access in Sub-Saharan Africa: uptake, reliability, and complementary factors for economic impact*. World Bank Publications.
- Cabaña G (2026) Nuestra casa comienza en Chacao: Ecoautoridades, burocracia y transición energética en torno a una carretera eléctrica en Chiloé, Chile. *The Journal of Latin American and Caribbean Anthropology* 31(2). <https://doi.org/10.1111/jlca.70050>
- Calcaterra M, Aleluia Reis L, Fragkos P, Briera T, de Boer HS, Egli F, et al. (2024) Reducing the cost of capital to finance the energy transition in developing countries. *Nature Energy* 9(10): 1241–1251. DOI: 10.1038/s41560-024-01606-7
- Carbon Brief (2026) Santa Marta: key outcomes from first summit on 'transitioning away' from fossil fuels. <https://www.carbonbrief.org/santa-marta-key-outcomes-from-first-summit-on-transitioning-away-from-fossil-fuels>

- Castilla LM (2025) *Situación y fomento de la inversión privada en la exploración y explotación de hidrocarburos en el Perú*. <https://videnzainstituto.org/propuestasdelbicentenario/rumboenergetico/wp-content/uploads/sites/3/2025/11/Situacion-y-fomento-de-la-inversion-privada-en-la-exploracion-y-explotacion-de-hidrocarburos-en-el-Peru.pdf>
- Cherif R, Hasanov F and Sarsenbayev M (2024) *Call of duty: industrial policy for the post-oil era*. International Monetary Fund. <https://www.elibrary.imf.org/view/journals/001/2024/074/article-A001-en.xml>
- Chumacero RA, Fuentes R, and Schmidt-Hebbel K (2004) *Chile's free trade agreements: how big is the deal?* Central Bank of Chile Working Paper No. 264.
- Climate Action Tracker [CAT] (2025) Colombia. <https://climateactiontracker.org/countries/colombia/policies-action/>
- Climate Action Tracker [CAT] (2026a) Brazil. <https://climateactiontracker.org/countries/brazil/>
- Climate Action Tracker [CAT] (2026b) Mexico. <https://climateactiontracker.org/countries/mexico/policies-action/>
- Corrêa KC, Uriona-Maldonado M and Rodrigues Vaz C (2022) The evolution, consolidation and future challenges of wind energy in Uruguay. *Energy Policy* 161: 112758. <https://doi.org/10.1016/j.enpol.2021.112758>
- Cunial S (2024) Policy legacies and energy transitions: greening policies under sectoral reforms in Argentina and Chile. *Energy Policy* 188: 114059. <https://doi.org/10.1016/j.enpol.2024.114059>
- Delgado R, Eguino H and Pereira A L (2021) *Fiscal policy and climate change: recent experiences of Finance Ministries in Latin America and the Caribbean*. Inter-American Development Bank. <https://doi.org/10.18235/0003376>
- DeStephano P, Perez BH, Minoletti CH, Klug T and Plutshack V (2022) Positioned for consensus: market-based approaches, civil society and the role of the state in Chile's coal phase-out. In *The Political Economy of Coal* (pp. 60–77). London: Routledge. <https://www.taylorfrancis.com/chapters/oa-edit/10.4324/9781003044543-5/positioned-consensus-paelina-destephano-beatriz-hernandez-perez-claudio-huepe-minoletti-thomas-klug-victoria-plutshack>
- Díaz Paz WF, Escosteguy M, Seghezze L, Hufty M, Kruse E and Iribarnegaray MA (2023) Lithium mining, water resources, and socio-economic issues in northern Argentina: we are not all in the same boat. *Resources Policy* 81: 103288. <https://doi.org/10.1016/j.resourpol.2022.103288>
- DNV (2025) *Energy transition outlook 2025*. <https://www.dnv.com/energy-transition-outlook/2025/latin-america/>
- Driver T (2024) *Caribbean energy 2024: prospects, challenges & opportunities for oil & gas, renewables and environment*. <https://lacc.fiu.edu/publications/lacc-caribbean-working-paper-series/driver-caribbean-energy-2024-prospects-challenges-opportunities.pdf>
- Economic Commission for Latin America and the Caribbean [ECLAC] (2016) *Horizons 2030: equality at the centre of sustainable development*. Santiago: ECLAC.
- Economist Intelligence Unit [EIU] (2026a) One-click report: Ecuador. <https://viewpoint.eiu.com/analysis/geography/XC/EC/reports/one-click-report>
- Economist Intelligence Unit [EIU] (2026b) One-click report: Bolivia. <https://viewpoint.eiu.com/analysis/geography/XC/BO/reports/one-click-report>
- Economist Intelligence Unit [EIU] (2026c) One-click report: Guyana. <https://viewpoint.eiu.com/analysis/geography/XC/GY/reports/one-click-report>
- Economist Intelligence Unit [EIU] (2026d) One-click report: Peru. <https://viewpoint.eiu.com/analysis/geography/XC/PE/reports/one-click-report>
- EIA (2025) Brazil, Guyana, and Argentina support forecast crude oil growth in 2026. <https://www.eia.gov/todayinenergy/detail.php?id=66884&>
- Eicke L and Weko S (2022) Does green growth foster green policies? Value chain upgrading and feedback mechanisms on renewable energy policies. *Energy Policy* 165: 112948. <https://ideas.repec.org/a/eee/enepol/v165y2022ics0301421522001732.html>

- EMBER (2025a) *The electrotech revolution*. <https://ember-energy.org/latest-insights/the-electrotech-revolution/>
- EMBER (2025b) México depende cada vez más del gas importado de Estados Unidos. <https://ember-energy.org/es/analisis/las-renovables-el-camino-hacia-la-seguridad-energetica-en-mexico/mas-importaciones-de-gas-menor-independencia-energ/>
- EMBER (2026) Latin America and Caribbean. <https://ember-energy.org/countries-and-regions/latin-america-and-caribbean/>
- Galimova T, Ram M and Breyer C (2022) Mitigation of air pollution and corresponding impacts during a global energy transition towards 100% renewable energy system by 2050. *Energy Reports* 8: 14124–14143.
- Gobierno del Perú (2024) *Reporte de conflictos sociales N. 240. February 2024*. <https://www.defensoria.gob.pe/wp-content/uploads/2024/03/Reporte-Mensual-de-Conflictos-Sociales-n.%C2%B0-240-Febrero-2024.pdf>
- Godfrid D, Morandi P, Martínez JP (2025) *Decoding Latin America: key insights to understand climate action in the region*. London: Grantham Research Institute on Climate Change and the Environment and the Centre for Economic Transition Expertise, London School of Economics and Political Science. <https://www.lse.ac.uk/granthaminstitute/publication/decoding-latin-america-key-insights-for-understanding-climate-action-in-the-region/>
- Godfrid D and Pereira da Silva LA (2025) Aligning all finance with sustainability and improving the international regulatory framework. In: *Delivering an integrated climate finance agenda in support of the Baku to Belém Roadmap to 1.3T*. Fourth report of the Independent High-Level Expert Group on Climate Finance. <https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2025/11/IHLEG-on-Climate-Finance-4th-Report-Delivering-an-integrated-climate-finance-agenda.pdf>
- Godfrid D and Pimenta MJ (2026) What are the impacts of energy crises and how can they be avoided? <https://www.lse.ac.uk/granthaminstitute/explainers/what-are-the-impacts-of-energy-crises-and-how-can-they-be-avoided/>
- Godfrid D and Stern N (2026) *What is the role of the state in fostering growth and the green transition?* <https://www.economicsobservatory.com/what-is-the-role-of-the-state-in-fostering-growth-and-the-green-transition>
- Grashof N and Basilico S (2025) Divergent paths for green transition: regional disparities in technology diversification. *Regional Studies* 59(1): 2363327. <https://www.tandfonline.com/doi/full/10.1080/00343404.2024.2363327>
- Hausmann R and Klinger B (2006) *Structural transformation and patterns of comparative advantage in the product space (CID Working Paper No. 128)*. Center for International Development, Harvard University.
- Hidalgo CA, Klinger B, Barabási AL and Hausmann R (2007) The product space conditions the development of nations. *Science* 317(5837): 482–487. <https://doi.org/10.1126/science.1144581>
- Hochstetler K (2021) *Political economies of energy transition: wind and solar power in Brazil and South Africa*. Cambridge University Press. DOI: 10.1017/9781108920353
- Humphreys M, Sachs J D and Stiglitz JE (Eds) (2007) *Escaping the resource curse*. Columbia University Press.
- Inchauste G and Victor D (2017) *The political economy of energy subsidy reform. Direction in development*. Washington DC: World Bank Group. <http://documents.worldbank.org/curated/en/745311489054655283>
- Inter-American Development Bank Group [IDB] (2026) *Landscape of opportunities in Suriname*. <https://publications.iadb.org/en/bideconomics-landscape-opportunities-suriname>
- International Energy Agency [IEA] (2023) *Latin America energy outlook 2023*. <https://www.iea.org/reports/latin-america-energy-outlook-2023>
- International Energy Agency [IEA] (2024) Colombia. Electricity. <https://www.iea.org/countries/colombia/electricity>

- International Energy Agency [IEA] (2025a) *Electricity 2025. Analysis and forecast to 2027*.
<https://www.iea.org/reports/electricity-2025>
- International Energy Agency [IEA] (2025b) *Chile 2050 energy transition roadmap*.
<https://www.iea.org/reports/chile-2050-energy-transition-roadmap>
- International Energy Agency [IEA] (2025c) *World energy investment 2025*. Paris: IEA.
<https://www.iea.org/reports/world-energy-investment-2025>
- International Monetary Fund [IMF] (2020) *Ecuador: first review under the extended arrangement under the Extended Fund Facility and request for modification of quantitative performance criteria (IMF Country Report No. 20/325)*. International Monetary Fund.
<https://doi.org/10.5089/9781513565743.002>
- International Monetary Fund [IMF] (2023) *Fiscal monitor: climate crossroads: fiscal policies in a warming world*. DOI: 10.5089/9798400250286.089.
- International Monetary Fund [IMF] (2025) *Macro-fiscal impacts of Colombia's energy transition plan*.
<https://www.elibrary.imf.org/view/journals/002/2025/281/article-A002-en.xml>
- International Trade Administration [ITA] (2026) Mexico – oil and gas. US Department of Commerce, 12 February. <https://www.trade.gov/knowledge-product/mexico-n-oil-and-gas>
- IRENA (2021) *Renewables readiness assessment: Paraguay*.
<https://www.irena.org/Publications/2021/Sep/Renewables-Readiness-Assessment-Paraguay>
- Kelsall T, Schulz N, Ferguson WD, Vom Hau M, Hickey S and Levy B (2022) The idea of a political settlement. In *Political settlements and development: theory, evidence, implications*. Oxford Academic.
<https://doi.org/10.1093/oso/9780192848932.003.0002>
- Kim J, Jaumotte F, Panton AJ and Schwerhoff G (2025) Energy security and the green transition. *Energy Policy* 198: 114409.
- Kostroch DC and Vasquez-Baos T (2024) The green transition in Latin America and the Caribbean: considerations for the Public Sector. In: *Climate Change Challenges and Opportunities in Latin America and the Caribbean*, 107.
<https://www.elibrary.imf.org/display/book/9798400240577/CH007.xml#CH007fn04>
- Lamby L, Venturi L, Hernández JI and Hausmann R (2026) *Bolivia's economic pivot: reviving the energy sector (Growth Lab Working Paper No. 263)*. Growth Lab, John F. Kennedy School of Government, Harvard University.
- Lebdioui A (2024) *Survival of the greenest: economic transformation in a climate-conscious world*. Cambridge University Press. <https://doi.org/10.1017/9781009339414>
- Lema R, Hanlin R, Hansen U E and Nzila C (2018) Renewable electrification and local capability formation: linkages and interactive learning. *Energy Policy* 117: 326–339.
- Marín A, Möhle E, and Aneise AJ (2025) Environmental crisis and sustainable development in South America. *Oxford Research Encyclopedia of Climate Science*.
<https://doi.org/10.1093/acrefore/9780190228620.013.964>
- Marshall S, Gompertz D and Senlen O (2026) *NDC Energy Commitments Tracker*.
<https://www.e3g.org/publications/ndc-3-0-energy-commitments-tracker/>
- Mihalyi D, Adam A and Hwang J (2020) *Resource-backed loans: pitfalls and potential*. Natural Resource Governance Institute.
<https://resourcegovernance.org/publications/resource-backed-loans-pitfalls-and-potential>
- Moerenhout T, Gencer D, Arizu B, Lee MA, and Braun H (2024) *Energy subsidy reform in action: political economy analysis and communications for energy subsidy reform: approaches and insights from recent technical assistance*. Energy Sector Management Assistance Program, World Bank.
- Möhle E, Aneise A, Mendoza F and Bril Mascarenhas T (2026) *The Renewables Diamond: Toward a Place-Based Energy Transition in the Global South*. Fundar.
- Montes de Oca Leon M, Hagen A and Holz F (2024) The political economy of fossil fuel subsidy removal: evidence from Bolivia and Mexico. IMF Working Papers No. 230. DOI:10.5089/9798400290480.001

- Morris M, Kaplinsky R and Kaplan D (2012) One thing leads to another – commodities, linkages and industrial development. *Resources Policy* 37(4): 408–416. DOI: 10.1016/j.resourpol.2012.06.008
- Murguía D, Marín A, Delbuono V and Freytes C (2023) *Supplier development for the mining sector: institutional challenges and strategic policy guidelines*. Fundar. https://fund.ar/wp-content/uploads/2023/09/Fundar_Desarrollo-de-proveedores-para-el-sector-minero-2.pdf
- Nabuurs GJ, Mrabet R, Abu Hatab A, Bustamante M, Clark H, Havlík P, et al. (2022) Agriculture, forestry and other land uses (AFOLU). In Shukla PR, Skea J, Slade R, Al Khourdajie A, van Diemen R, McCollum D, et al. (Eds) *Climate change 2022: mitigation of climate change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (pp. 747–860). Cambridge University Press. <https://doi.org/10.1017/9781009157926.009>
- OLADE (2024) *Panorama Energético de América Latina y el Caribe 2024*. <https://www.olade.org/publicaciones/panorama-energetico-de-america-latina-y-el-caribe-2024/>
- OLADE (2026) *Panorama 2025 Producción y comercio exterior de petróleo y gas natural en ALC*. <https://www.olade.org/wp-content/uploads/2026/05/Documento-de-trabajo-Petroleo-y-Gas-Natural-en-ALC-202543.pdf>
- Organisation for Economic Co-operation and Development [OECD] (2026) *Revenue statistics in Latin America and the Caribbean 2026*. https://www.oecd.org/content/dam/oecd/en/publications/reports/2026/05/revenue-statistics-in-latin-america-and-the-caribbean-2026_436209c8/2f21f131-en.pdf
- Our World in Data (2026) Share of electricity generation from solar and wind. https://ourworldindata.org/grapher/electricity-mix?time=2024&source=solar_and_wind&metric=share_of_generation&frequency=annual
- Ozkan C and Okay N (2024) Does renewable energy convey information to current account deficit?: evidence from OECD countries. *Sustainability* 16(18): 8241.
- Pedersen M (2025) *Climate change and monetary policy in Latin America and the Caribbean*. Macroeconomics of Development Series No. 220, LC/TS.2025/22. Economic Commission for Latin America and the Caribbean.
- Pereira da Silva LA (2025) *Unlocking climate capital for emerging markets and developing economies: an adaptive regulatory and policy reform agenda*. CETEx Discussion Paper. London: Centre for Economic Transition Expertise, London School of Economics and Political Science.
- Pereira da Silva LA, Arbache J, Lima R, Gimenes F and Castro Pires M (2026) *Brazil's investment-led growth in the ecological transition*. CETEx Discussion Paper. London: Centre for Economic Transition Expertise, London School of Economics and Political Science.
- Roger DD and Arroyo JI (2023) Elementos para una transición energética sostenible y progresiva en Argentina. *Ciencia, Tecnología y Política* 6(11): 101. DOI: 10.24215/26183188e101
- Rojas-Suarez L (2025) *Aligning international banking regulation with the SDGs*. Center for Global Development. <https://www.cgdev.org/sites/default/files/aligning-international-banking-regulation-sdgs.pdf>
- Rosenow J and Mealy P (2024) *Green capabilities and the twin transition: pathways for sustainable industrial development*. World Bank. <https://documents1.worldbank.org/curated/en/0999336402072438837/pdf/IDU127b390ef1155014bd91aea9110575d799ce6.pdf>
- Ross ML (2012) *The oil curse: how petroleum wealth shapes the development of nations*. Princeton University Press.
- S&P (2026) *Research update: Trinidad and Tobago 'BBB-' sovereign ratings affirmed; outlook remains negative*. <https://www.spglobal.com/ratings/en/regulatory/article/-/view/type/HTML/id/3598861>
- Schleich J, Rogge K and Betz R (2009) Incentives for energy efficiency in the EU Emissions Trading Scheme. *Energy Efficiency* 2(1): 37–67.
- Schteingart D and Möhle E (2026) *When will is not enough. A global map of green industrial policy space*. Fundar.

- Seto KC, Davis SJ, Mitchell RB, Stokes EC, Unruh G and Ürge-Vorsatz D (2016) Carbon lock-in: types, causes, and policy implications. *Annual Review of Environment and Resources* 41(1): 425–452. <https://doi.org/10.1146/annurev-environ-110615-085934>
- SENER, Secretaría de Energía (2025) *Plan de Desarrollo del Sector Eléctrico 2025–2039 (PLADESE)*. Gobierno de México. <https://www.gob.mx/sener/articulos/plan-de-desarrollo-del-sector-electrico-pladese>
- Sidicaro N, Aneise AJ, Argoitia JM, della Paolera Carola, Freytes C and Schteingart D (2025) *Comodoro Rivadavia and the end of an era. towards a just transition in the Golfo San Jorge Basin*. Fundar. https://fund.ar/wp-content/uploads/2025/12/Fundar_Comodoro-Rivadavia-and-the-End-of-an-Era_CC-BY-NC-ND-4.0.pdf
- SOAS Development Leadership Dialogue (2025) *From crisis to energy security: how Uruguay built national backing for its renewable energy revolution [Case study, The Art of the Possible: SOAS DLD Case Study Series]*. SOAS University of London. <https://www.soas.ac.uk/sites/default/files/2025-07/SOAS%20DLD%20case%20study%20Uruguay%20renewables.pdf>
- Strambo C, González Espinosa AC, Puertas Velasco AJ, and Mateus Molano LM (2020) Contention strikes back? The discursive, instrumental and institutional tactics implemented by coal sector incumbents in Colombia. *Energy Research & Social Science* 59: 101280. <https://doi.org/10.1016/j.erss.2019.101280>
- Suriname (2025) Third Nationally Determined Contribution (NDC 3.0): an update of Suriname's second NDC with enhanced 2030 and 2035 targets. <https://unfccc.int/sites/default/files/2025-11/NDC%203%20report%20Suriname%20251104%20Final%20Publication%20Version.pdf>
- United Nations Conference on Trade and Development [UNCTAD] (2023) *Chile – launches a new national strategy for lithium [Medida de política de inversión]*. Investment Policy Monitor, 20 April. <https://investmentpolicy.unctad.org/investment-policy-monitor/measures/4305/chile-launches-a-new-national-strategy-for-lithium>
- United Nations Development Programme [UNDP] (2023) *Global decarbonization in fossil fuel export-dependent economies fiscal and economic transition costs*. <https://www.undp.org/sites/g/files/zskgke326/files/2023-05/Global%20Decarbonization%20in%20Fossil%20Fuel%20Export-Dependent%20Economies.pdf>
- World Bank [WB] (2024a) *Ecuador country climate and development report*. <https://openknowledge.worldbank.org/server/api/core/bitstreams/34af663f-ee69-400e-8cfd-63fbee1e49c/content>
- World Bank [WB] (2024b) *Paraguay country climate and development report*. <https://openknowledge.worldbank.org/server/api/core/bitstreams/28634bfe-5173-4bcf-baa8-2aa16c3f4531/content>
- World Bank [WB] (2026) The World Bank Group in Ecuador. <https://ieg.worldbankgroup.org/evaluations/world-bank-group-ecuador/overview>
- World Economic Forum [WEF] (2025) *Energy transition readiness: Latin America and the Caribbean*. https://reports.weforum.org/docs/WEF_Latin_America&Caribbean_Energy_Transition_2025.pdf
- World Energy Council (2025) *Uruguay energy issues monitor 2025 country commentary*. World Energy Council. <https://www.worldenergy.org/world-energy-community/members/entry/uruguay>
- Xue X and Larsen M (2025) *China's green leap outward: the rapid scale-up of overseas Chinese clean-tech manufacturing investments (Policy Brief No. 11)*. Net Zero Industrial Policy Lab, Johns Hopkins University. <https://www.netzeropolicylab.com/china-green-leap>
- Zero Carbon Analytics (2026) *Renewables bulletin: Latin America and the Caribbean edition*. <https://zerocarbon-analytics.org/insights/briefings/renewables-bulletin-latin-america-and-the-caribbean-edition/>