Net Zero

Zero Carbon Analytics

Data · June 2025

Renewables Bulletin: Latin America and the Caribbean edition

Key points

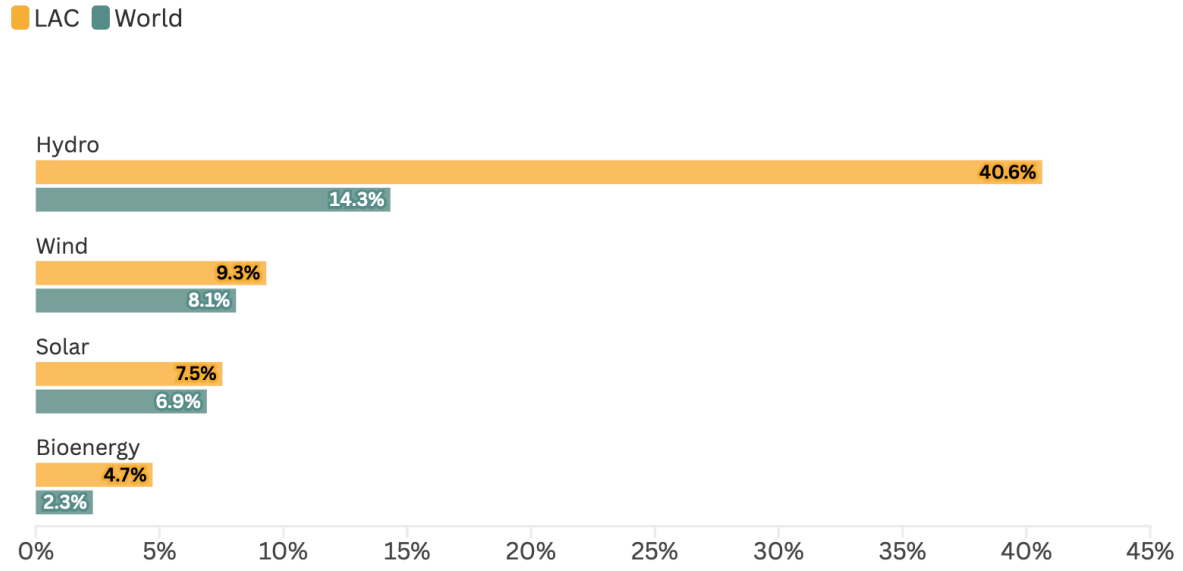
- The Renewables Bulletin is a data product providing timely and ready-to-use data on countries' progress in developing renewables to produce sustainable, zero-carbon energy, one region at a time.
- Access to accurate data and an indication of what we can learn from it supports our collective efforts to hold governments accountable for setting – and delivering – ambitious targets.
- The Bulletin contains interactive graphs that are best accessed online.
- The dataset is curated to enable a country-level assessment of progress against the global effort to triple the world's installed renewable energy capacity and double the average annual rate of energy efficiency improvements by 2030, targets set at COP28.
- Countries covered are Argentina, Bahamas, Barbados, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Jamaica, México, Panamá, Perú and Uruguay.
- A previous Bulletin covered a selection of countries in Africa.

Data you'll find in this piece

Renewables development across Latin America and the Caribbean

The Latin America and Caribbean (LAC) region generated 17% of its electricity from wind and solar in 2024, surpassing the global average of 15%. The region also exceeded the global average for bioenergy at 4% of generation, compared to 2% globally. Thanks to the large proportion of hydropower (41%) and the growing role of wind, solar and bioenergy in electricity generation, the region is responsible for only 5% of global cumulative energy-related greenhouse gas emissions.

Fig. 1: Renewables share of LAC and global energy mix (%)



Source: ZCA estimations based on, Ember, Electricity Data Explorer 2024

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The data presented here covers 14 countries from across LAC, with a wide profile of energy mixes and economic structures, ranging from fossil fuel-dependent economies to those with significant renewable energy (RE) investments.

This selection ensures coverage of LAC's major subregions (South, Central and North America and the Caribbean) and ecosystems, from the Amazon to the Andes to small island states. The selected countries represent 82% of the region's population and account for about 85% of its GDP. Note that, due to data limitations, only selected indicators are available for some countries.

Targets for renewable energy growth

Nearly half of the 33 countries in LAC – including Brazil, Chile, Costa Rica and Colombia – have pledged to achieve net-zero emissions by 2050. Meeting these targets will require a fourfold increase in the average annual investment in clean energy between 2026 and 2030 compared to the previous decade, according to the International Energy Agency (IEA). In the shorter term, 16 countries across the region have signed up to generate at least

80% of electricity from renewable sources by 2030, as part of the Renewables in Latin America and the Caribbean (RELAC) initiative.[1]

However, as current policies lead to increased greenhouse gas emissions despite climate commitments requiring substantial reductions, there is a considerable implementation gap in the region.

Specific targets for 2030 are shown in the table below. Comparing objectives is complicated by the various energy metrics used:

- Renewable energy (RE) is defined by the United Nations Sustainable Energy for All (SE4All) as "derived from natural processes that are replenished at a higher rate than they are consumed." Sources include solar, wind, geothermal, hydro and biomass.
- Non-conventional renewable energy comprises a smaller grouping of intermittent sources, including wind, biomass, and solar, among others, used to complement other energy sources, enhancing diversification and energy security.
- Clean energy refers to energy sources – such as solar, wind, hydropower, geothermal, and certain forms of bioenergy – that emit no greenhouse gases during operation. It can also include nuclear power. These sources are low-carbon or carbon-free alternatives to fossil fuels, but this does not mean they have zero impact on the environment.

[1] The members of RELAC are: Barbados, Bolivia, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Nicaragua, Panama, Paraguay, Peru and Uruguay.

Fig. 2: Renewable energy targets by 2030 *(go online to access source links)*

Country	Target 2030	Category	Link
Argentina	57% total RE in generation; 30% from non-conventional RE	Generation	Source
Bahamas	At least 30% of the energy mix is RE	Energy mix	Source
Barbados	100% RE sources used in the energy mix	Energy mix	Source
Bolivia	50% of the installed capacity (79% of the energy consumed)	Capacity	Source
Brazil	46.6% RE in energy mix; 86% RE installed electricity generation capacity	Energy mix; electricity capacity	Source; Source
Chile	80% RE in electricity generation	Electricity generation	Source
Colombia	79% RE in energy generation	Energy generation	Source
Costa Rica	97% RE in the energy mix (including geothermal and hydropower)	Energy mix	Source
Ecuador	74.17% RE in energy generation (by 2027)	Energy generation	Source
Jamaica	50% RE in the electricity generation	Electricity generation	Source
México	38% clean energy in the electricity system	Electricity generation	Source
Panamá	1,700 MW of the energy mix from RE; 20% non-conventional RE in the electricity generation	Energy mix; Electricity generation	Source; Source
Perú	15% non-conventional RE in the energy mix	Energy mix	Source
Uruguay	97% RE in energy generation	Energy generation	Source

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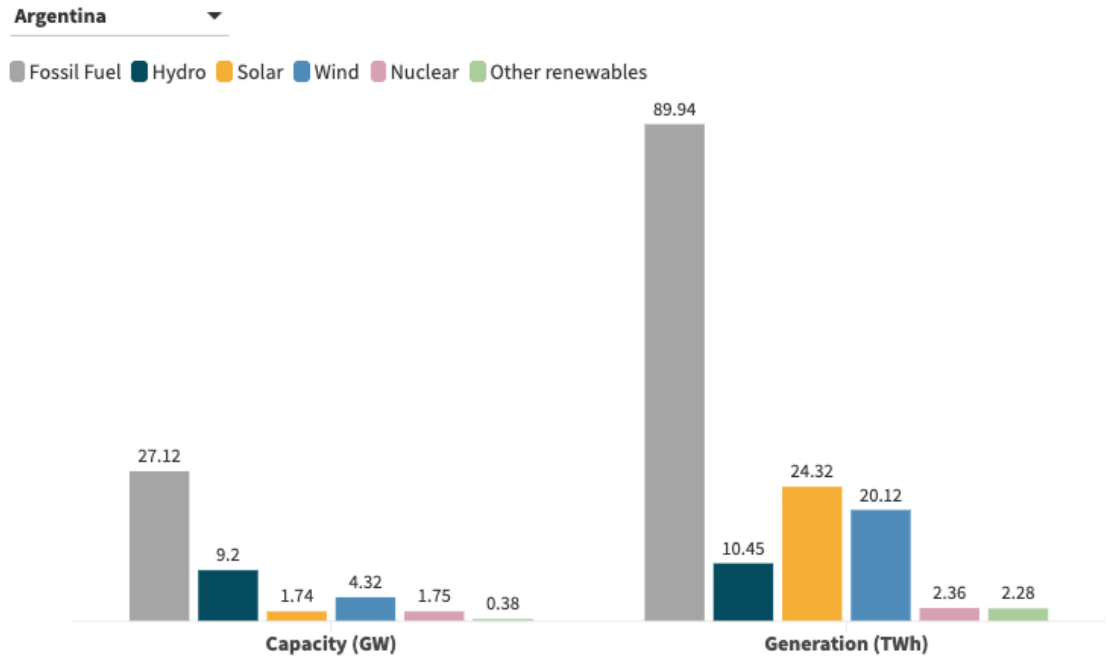
Targeting generation growth is more impactful than capacity

While the global goal to triple renewable energy focuses on installed capacity – the maximum electricity that could theoretically be produced – what ultimately matters is generation: the actual electricity produced and delivered. Generation is what drives energy access, shapes supply, and reduces emissions. Boosting capacity is essential, but true progress depends on how effectively that capacity is turned into reliable renewable generation.

The graph below shows capacity in gigawatts (GW) side-by-side with generation in terrawatt hours (TWh), providing a snapshot of how the selected countries are meeting their energy needs and diversifying their energy mix. The data shows the relative importance of sources like fossil fuels and hydro, with growing sources like solar and wind. It offers insights into each country's progress towards the 2030 targets.

The graphs also reflect the availability of natural resources in each of the countries – those with fossil fuel resources have tended to rely mainly on them to provide electricity, while other countries have rich renewable resources, particularly hydro.

Fig. 3: Installed capacity vs generation *(go online for all country graphs)*



Source: Ember, yearly electricity data (2024) • Generation includes net imports. Fuel with very small shares (<5% of total capacity) may not be displayed. Other renewables includes bioenergy, geothermal, tidal and wave generation. Fossil fuels include generation from coal, gas, oil and petroleum products, as well as manufactured gases and waste. Note: The data for Bahamas (the) and Jamaica is for year 2022 while for Barbados and Panama is 2023.

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More investment is needed to reach targets

Achieving global climate goals in the region will require four times more investment in clean sources than in unabated fossil fuels by 2030, up from a ratio of 1:1 today.

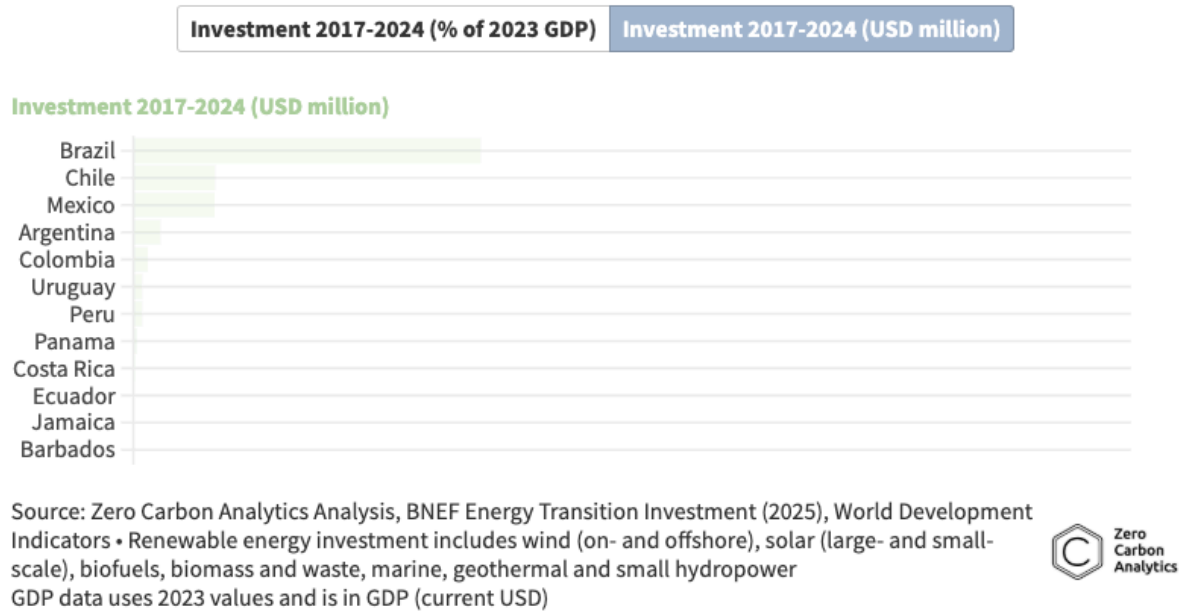
Investing to scale up renewables – primarily wind and solar – to match rising demand will enable the region to expand energy access to remote communities, enhance energy security and self-sufficiency, and generate new green jobs. Reducing the cost of capital –

both through the competitiveness of clean investments and de-risking the macroeconomic environment – will be essential to encourage this investment.

In recent years, the bulk of investment in clean energy in Latin America has come from the private sector. However, challenges to attracting private investment – including high financing costs, political and regulatory uncertainty, and a shortage of domestic credit – will need to be overcome to reach the levels needed, according to the IEA.

The graphs below show investment levels per country both in absolute terms and as a share of GDP to offer insight into both the flow of capital to the region and its relative impact in each individual market.

Fig. 4: Total investment in renewable energy in 2017-2024 in absolute values and as % of GDP *(go online to access the graphs)*



Source: Zero Carbon Analytics Analysis, BNEF Energy Transition Investment (2025), World Development Indicators • Renewable energy investment includes wind (on- and offshore), solar (large- and small-scale), biofuels, biomass and waste, marine, geothermal and small hydropower
GDP data uses 2023 values and is in GDP (current USD)

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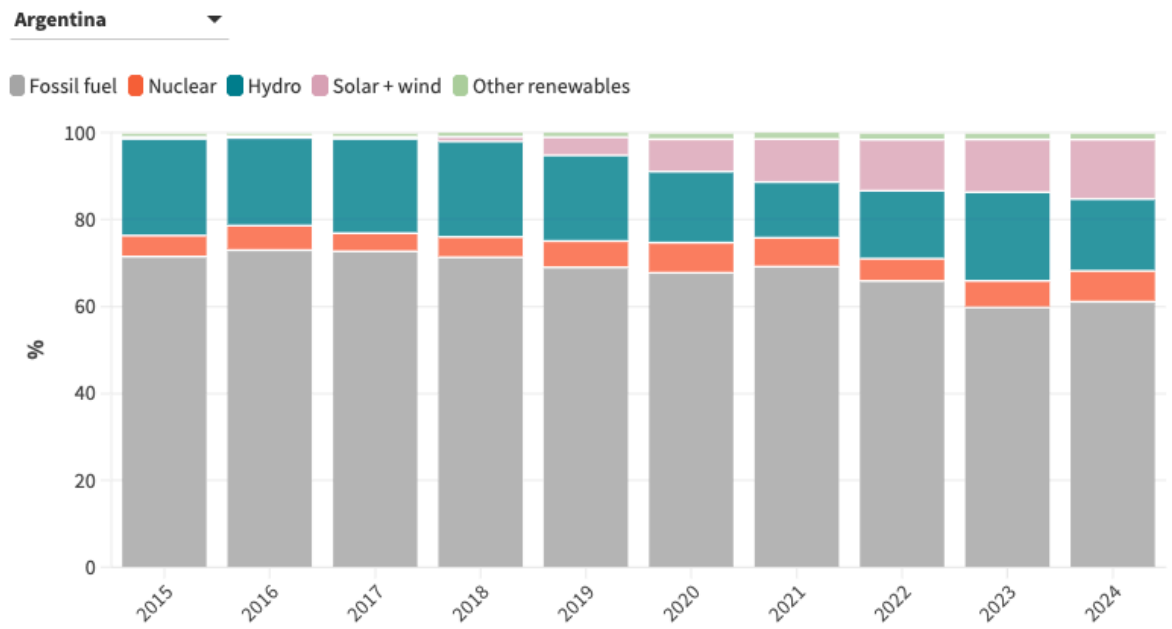
In the mix: Renewables growth can edge out fossil fuels

Although specific targets for increasing electricity generation capacity from renewable sources exist in LAC, ambitions related to the decarbonisation of the existing installed capacity are often limited.

The graphs below show how the energy mix generated in each country has developed over the last 10 years.

Fig. 5: Share of fuel in electricity generation, 2015-2024 (%) *(go online for all country graphs)*



Source: Ember Yearly electricity data 2025 • Note: Other renewables includes bioenergy, geothermal, tidal and wave generation. Fossil fuel generation includes generation from coal, gas, oil and petroleum products, as well as manufactured gases and waste.

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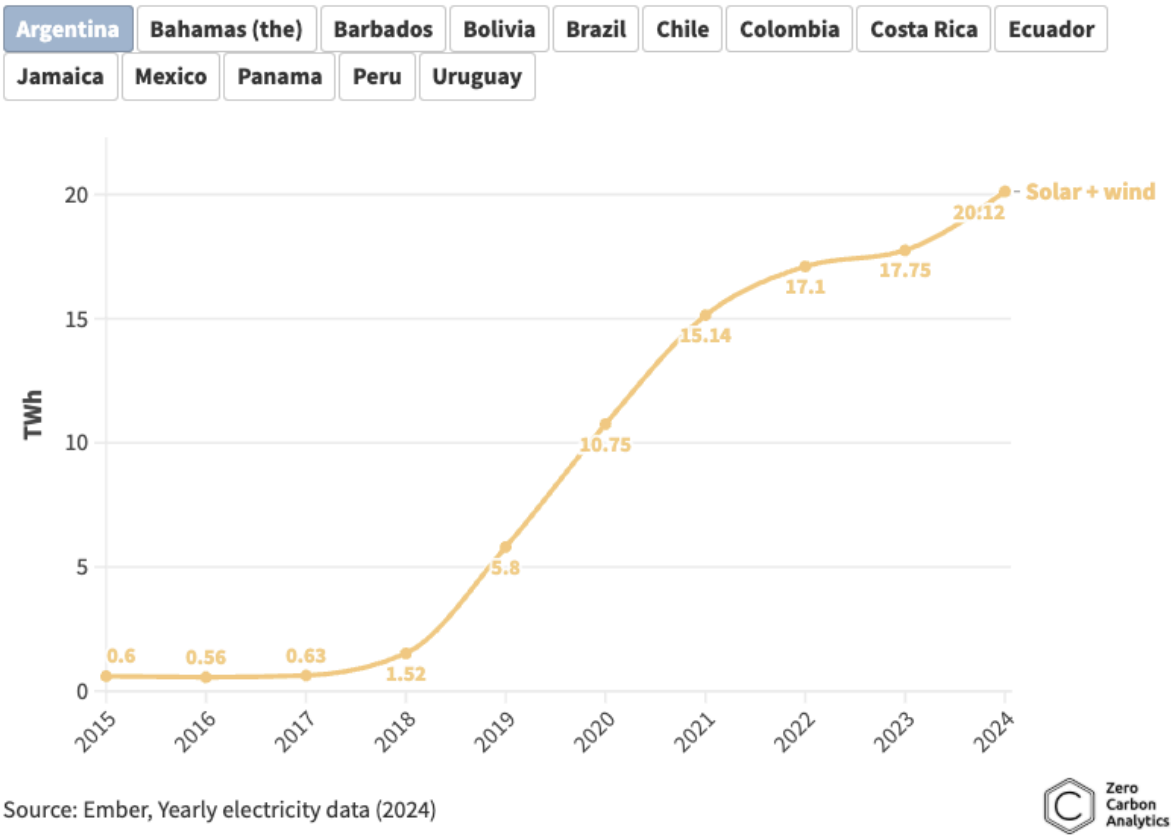
Wind and solar key partners on the way to 1.5C

Although wind and solar PV currently represent a smaller share of the region's electricity generation mix than either hydropower or fossil fuels (see above), a shift is under way: over half of the annual capacity additions between 2020 and 2023 were wind and solar projects.

Fig. 6: Wind and solar generation *(go online for all country graphs)*

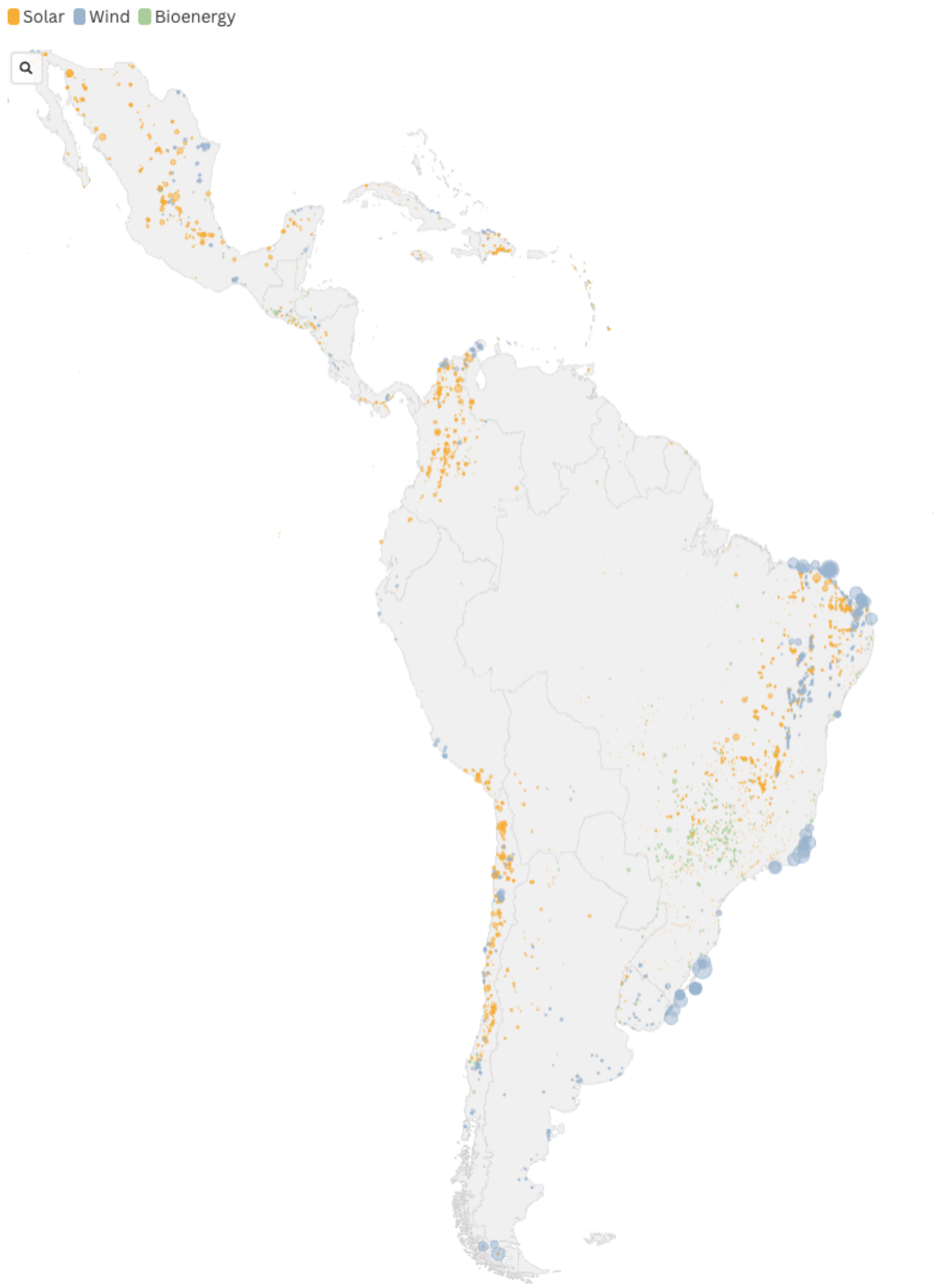


LAC's renewables boom must not endanger biodiversity

This map plots planned and active solar, wind and bioenergy projects across the region. Each dot is scaled to the capacity of the plant it represents. Click on a dot to see more details of that project's capacity (MW) and stage of development, as well as a link to the full project page on Global Energy Monitor.

Solar PV and wind will be critical to achieve the targets in LAC, especially as the future growth potential of hydropower – which is not shown on the map – is more constrained by environmental and social concerns.

Fig. 7: Map of planned and active solar, wind and bioenergy projects *(go online to access project details)*

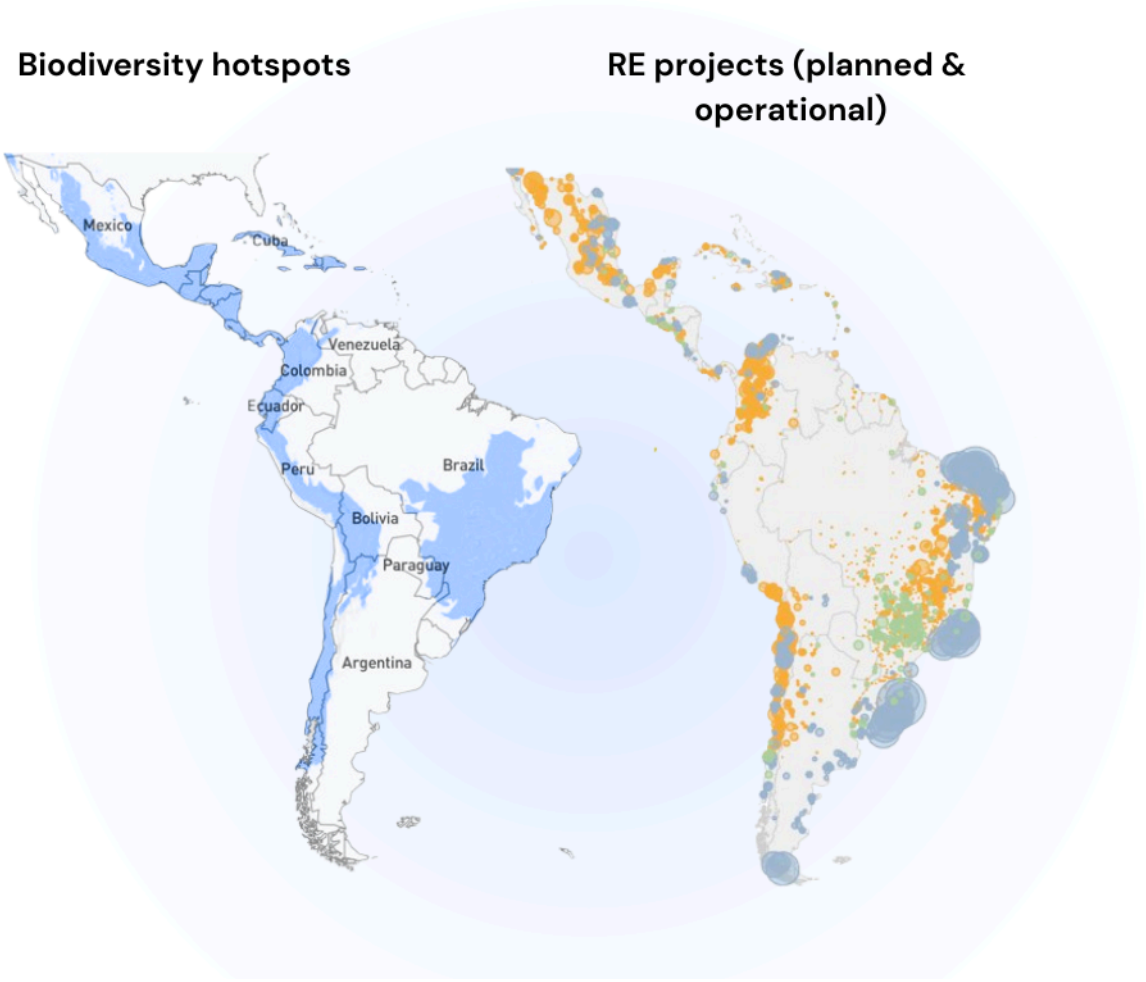


Source: Zero Carbon Analytics Analysis, Global Energy Monitor, Portal Energético para America Latina, May 2025 release.

All RE expansion needs to be undertaken within a safeguard framework to avoid negative impacts on the environment (land use impacts, ecosystem fragmentation) or human rights violations (forced relocation and lack of free, prior, informed consent) that may arise from the use of these technologies.

The image below shows the map of planned and operational RE projects alongside a map of biodiversity hotspots across the region produced by Resource Watch, using the Critical Ecosystem Partnership Fund's classification system. This defines a biodiversity hotspot as an area that "contains at least 1,500 species of vascular plants found nowhere else on Earth (known as "endemic" species)" and "has lost at least 70% of its primary native vegetation." This map only shows the land-based portion of the hotspots, and does not include offshore outer limits.

Fig. 8: Maps of RE projects and biodiversity hotspots

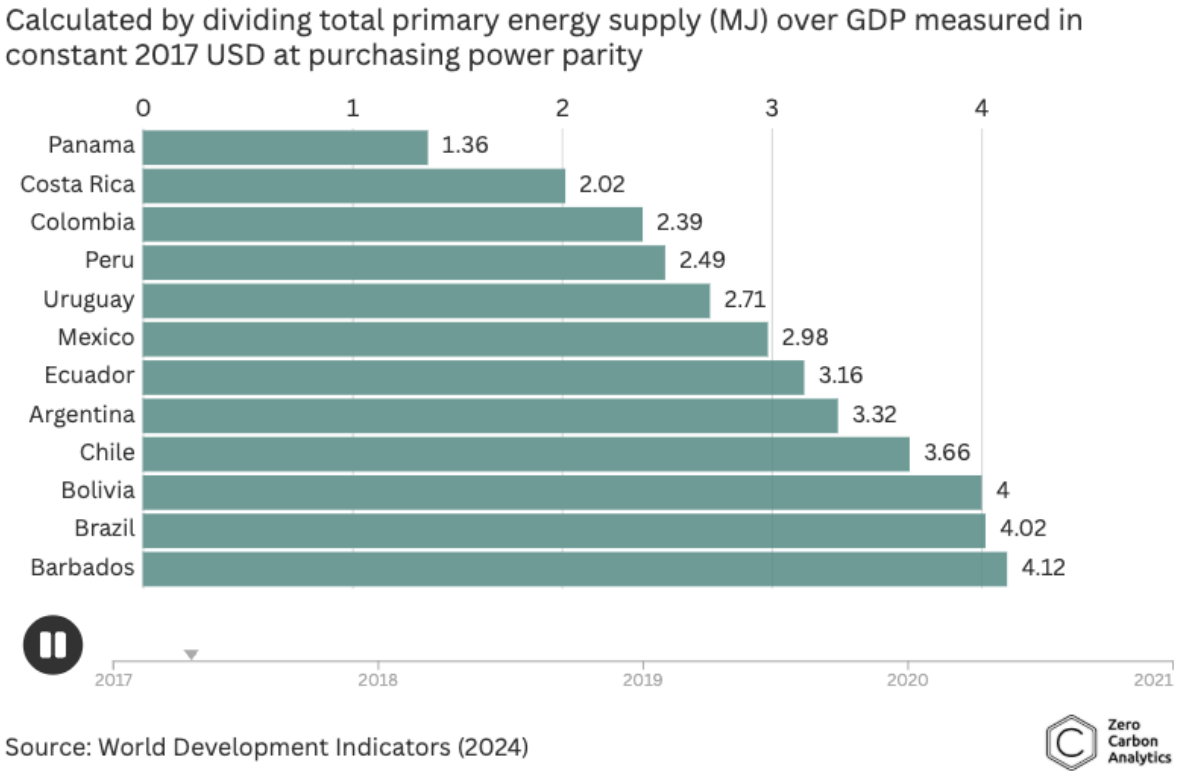


Energy efficiency is key to the energy transition

The global target agreed at COP28 in 2023 is to double the average rate of improvement in global energy efficiency from 2% to 4% a year by 2030. An economy's energy intensity is the most useful proxy for tracking efficiency gains, as it shows how much energy – measured in megaJoules (MJ) – is supplied to produce one unit of economic output. The lower the number, the more efficiently energy is being used.

The first graph below shows changes in energy intensity from 2017 to 2021, which is the most recent available for the countries with data. Scroll down to see this data translated into its energy efficiency improvement rate for the period.

Fig. 9: Energy intensity, 2017-2021 *(go online for fully interactive graph)*



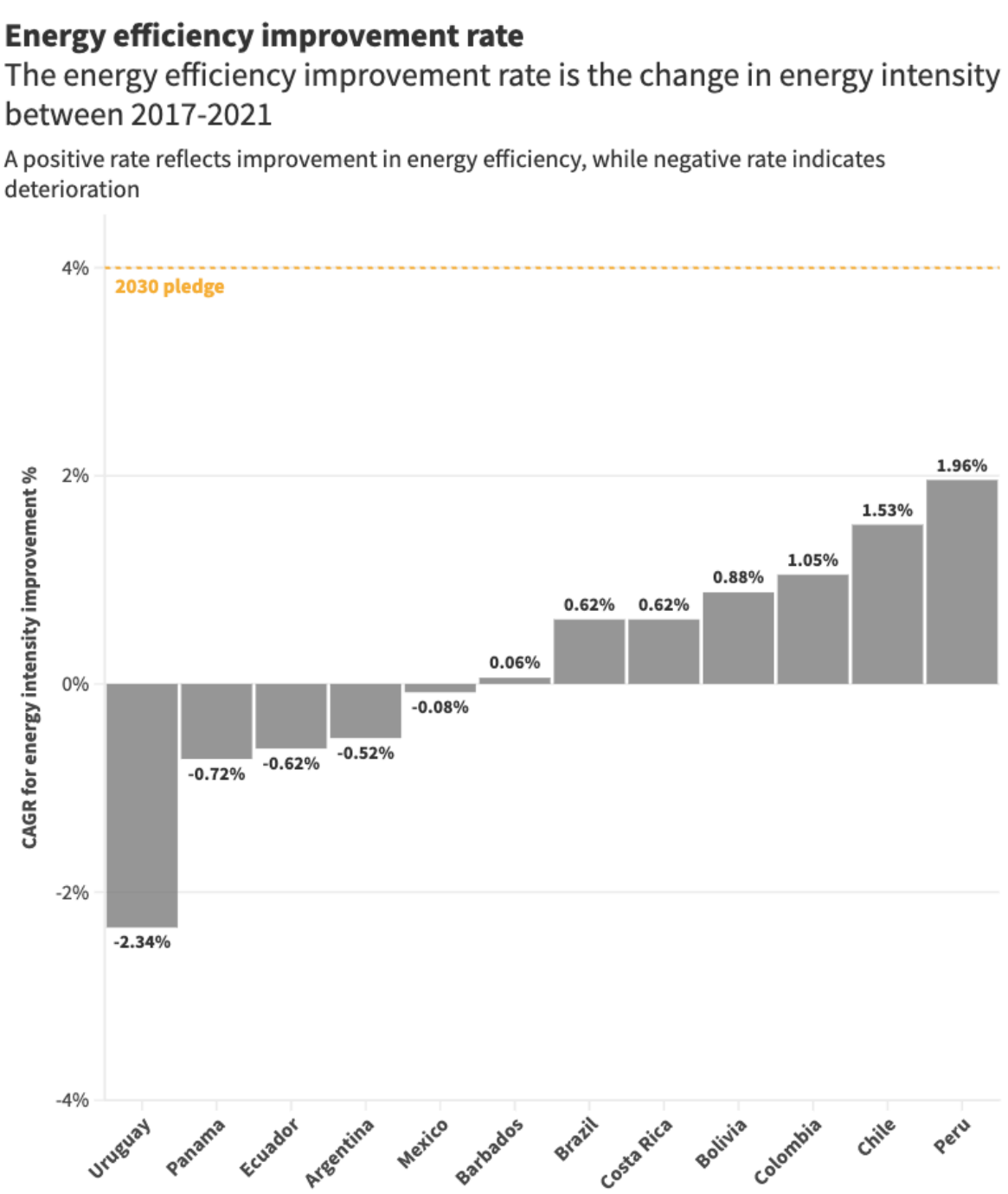
LAC has lower energy intensity than any other region in the world except the European Union. However, while other regions have made significant improvements in reducing their energy intensity, rates in LAC remained relatively stable in the 2000-2015 period.

Low energy intensity in the region doesn't necessarily mean energy is being used efficiently. It reflects limited access to affordable energy or the household appliances and technology that would use this power.

Countries across the region have adopted varied approaches to energy efficiency planning, with a number implementing national strategies or action plans, or being in the process of doing so. The outcomes have been varied. For example, Peru and Chile have seen significant improvements in energy efficiency, while Uruguay has experienced a worsening.

Despite its significant potential, energy efficiency continues to be underexploited due to persistent technical, financial and policy-related obstacles. The indicator for LAC countries has an average annual reduction of 0.4%.

Fig. 10: Energy efficiency improvement rate



Source: World Development Indicators (2024)
Note: Improvements in energy intensity serve as a proxy for increased energy efficiency. The energy intensity improvement rate is calculated using the compound annual growth rate (CAGR) formula, as defined by The International Renewable Energy Agency. This calculation measures the rate at which energy intensity declines over time. To present the improvement (decrease) in energy intensity as a positive value, the calculated CAGR is multiplied by (-1).

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Electricity-based clean cooking is vital to health and the planet

Basic energy access remains a challenge in LAC; 3% of people are still without electricity, and 11% rely on polluting fuels for cooking. This has significant impacts on health for the population.

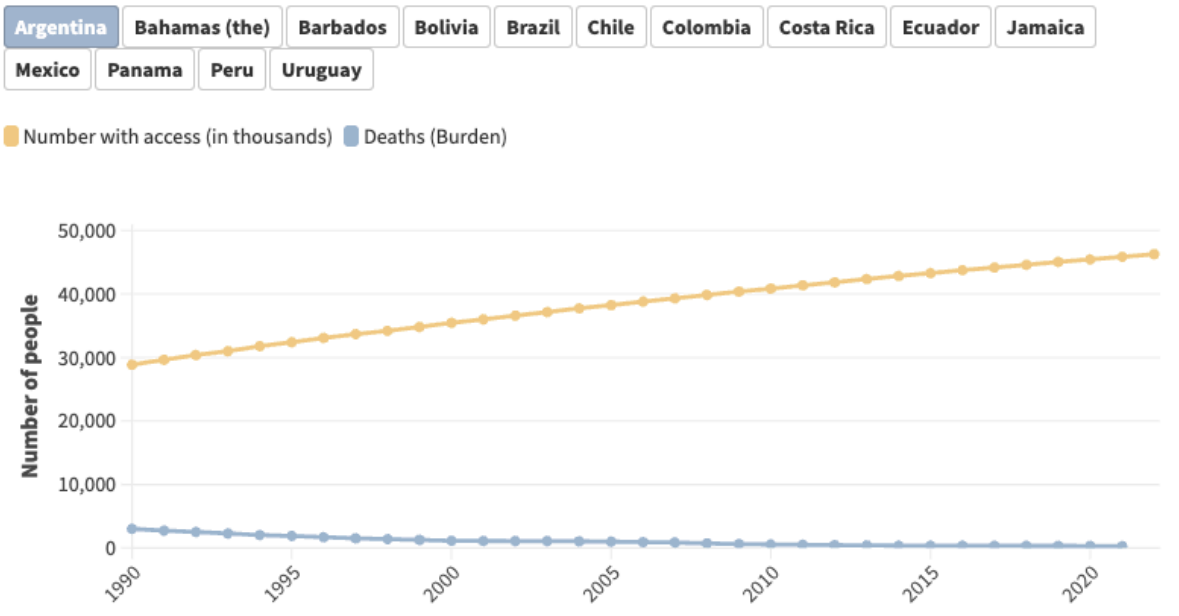
The Health Effects Institute attributes the global decline in deaths from household air pollution partly to expanded access to clean cooking energy, including through wider electricity coverage.

Continuing this downward trend requires ongoing investment in expanding access to clean power. Achieving universal electricity access and decarbonising power generation in line with national expansion plans across LAC will require investments equal to approximately 0.8% of the region's GDP each year – equivalent to USD 577.1 billion through 2030, according to the Inter-American Development Bank (IDB).

The set of graphs below chart the level of access to electricity for cooking against household air pollution deaths in each country over the last 30 years. Electric cooking does not result in household air pollution or greenhouse gas emissions if the electricity is generated using renewable resources.

The graphs for some countries where access to electricity for cooking has expanded over time indicate that there might be a link between using electricity for cooking and a reduction in deaths from household air pollution. However, they do not prove a direct correlation.

Fig. 11: Access to clean energy for cooking and deaths from household air pollution *(go online for all country graphs)*



Source: Health Effects Institute. 2024. State of Global Air 2024. Data source: Global Burden of Disease Study 2021. IHME, 2024., WHO, 2025 Population with primary reliance on fuels and technologies for cooking, by fuel type • The value used for deaths is the burden mean
The WHO definition for clean energy excludes kerosene, coal, biomass and charcoal.

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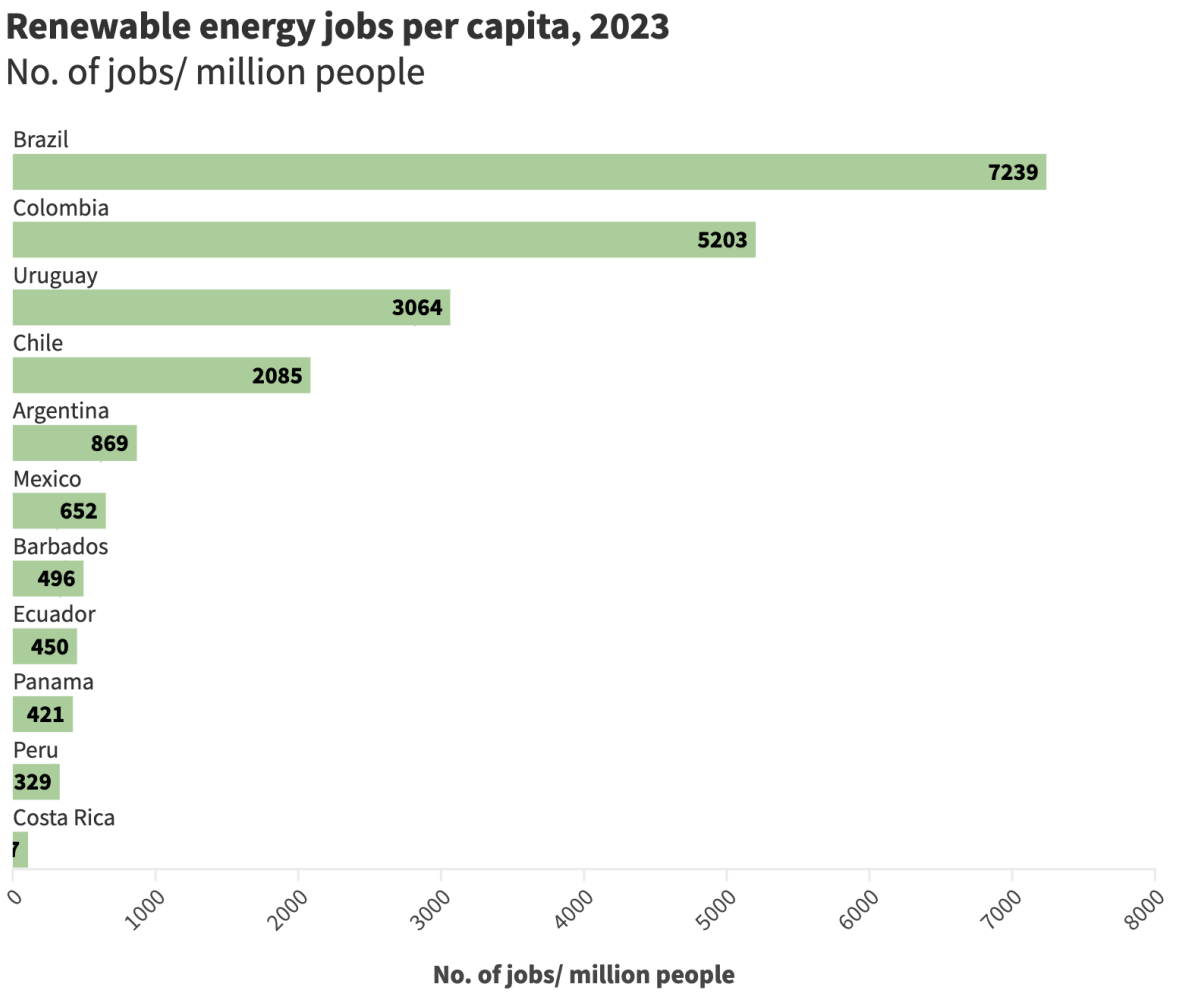
Renewable energy is a source of job creation

The tripling of renewable energy capacity by 2030 is expected to create over 30 million new jobs globally, bringing significant socio-economic benefits. Clean energy transitions also present new employment opportunities for workers across the region. Energy sector jobs, particularly in clean energy technologies and the critical minerals sector, are expected to grow by over 15% in the LAC region by 2030.

According to IRENA, in 2023, there were 16.2 million jobs in the renewable energy sector worldwide, nearly 13% of which were in LAC.

Figs. 12a & b: Renewable energy job creation



Source: Irena, Renewable Energy Employment by Country 2023
Note: Renewables jobs include solar, wind, biomass, biogas, tidal, wave, hydro, geothermal, heatpumps, waste
There is no data available for Bolivia and Jamaica

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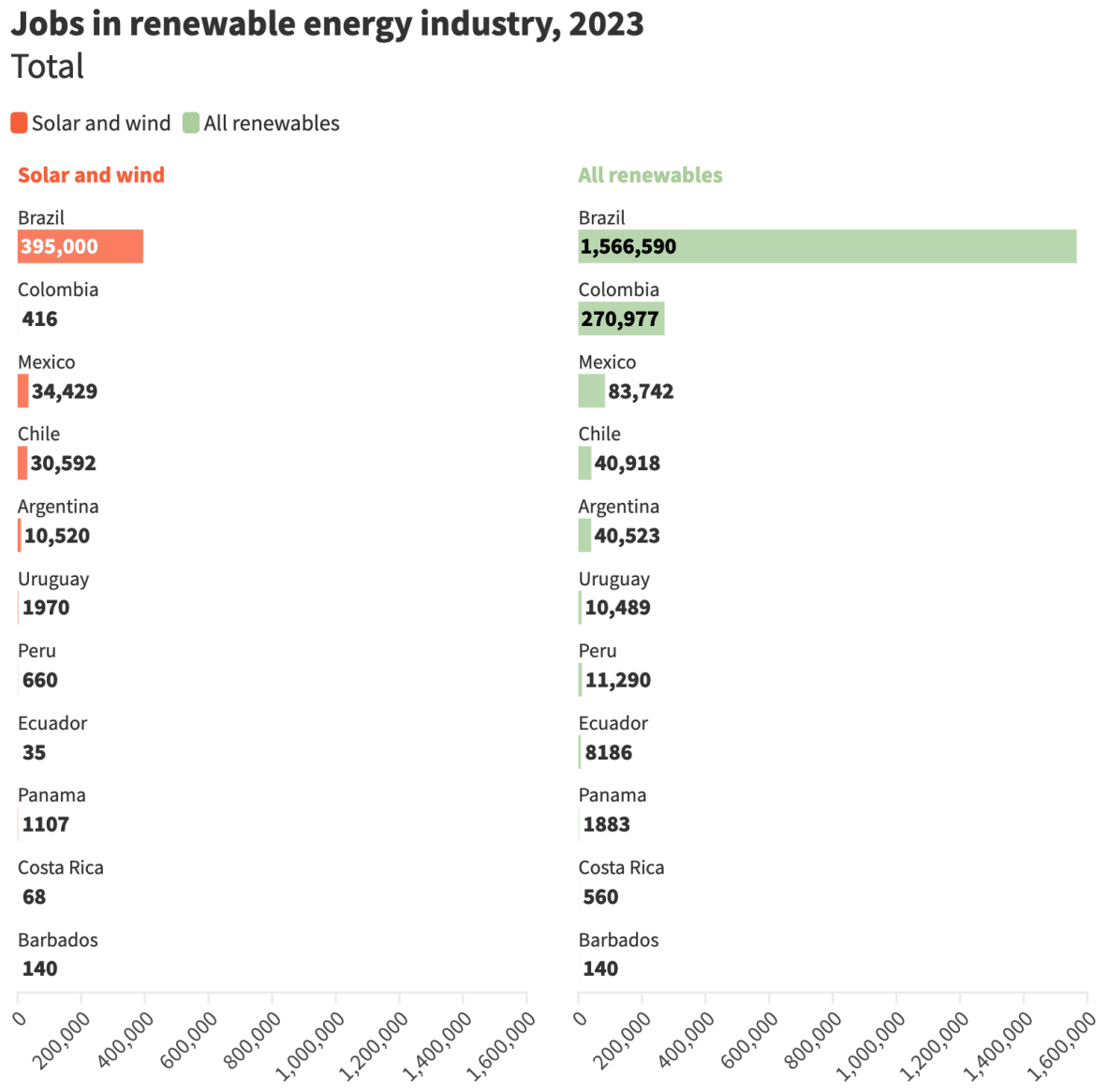
Renewable energy projects like wind and solar create jobs in manufacturing, installation and maintenance, while also boosting local economies, especially in rural areas where access to power is lowest.



Source: IRENA, Renewable Energy Employment by Country in 2023
Note: All renewables jobs include solar, wind, biomass, biogas, tidal, wave, hydro, geothermal, heatpumps, waste
There is no data available for Bolivia and Jamaica

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Resourcing the energy transition must consider socio-economic impacts

The development of clean energy technologies –solar panels, wind turbines, batteries and storage systems, electric vehicles (EV) and various electronic devices – relies on a set of critical minerals of which LAC has significant resources.

The region holds at least a third of the world's lithium, copper, and silver reserves. Chile has the largest lithium reserves, and Argentina has the third-largest, according to the U.S. Geological Survey.

Rising demand for these resources as global decarbonisation efforts ramp up presents significant economic opportunities for the region, including the prospect of a structural transformation to become a clean-energy manufacturing hub. But it also presents the risk of becoming another avenue of resource extraction with little added value for the region and potentially serious socio-environmental impacts if the mineral supply chain is not managed effectively.

Investment over the last two decades has been concentrated in extraction, with less emphasis on developing local capacity to manufacture lithium batteries or the electric vehicles they would power. There are currently two operational battery plants in the region, with another being built and five more announced (see map below).

Moving further up the value chain, BloombergNEF expects 2025 to serve as a crucial test for the viability of local manufacturing.[2] Driven by access to mineral resources and supportive policies for domestic clean vehicle production, Chinese automakers are preparing to begin assembling electric vehicles in Latin America starting in 2025 in Brazil. However, it is unclear to what extent this investment will support local development. Concerns have been raised over labour abuses at one facility, and its final impact on job creation has been questioned.

The graph below shows the main lithium mines in Latin America categorised by type (brine, clay, rock) and the planned and operational lithium battery plants in the region categorised by their stage of development (announced, under construction, fully commissioned).

[2] Bloomberg NEF. "Latin America: 10 Things to Watch in 2025." (January 23, 2025), 3.

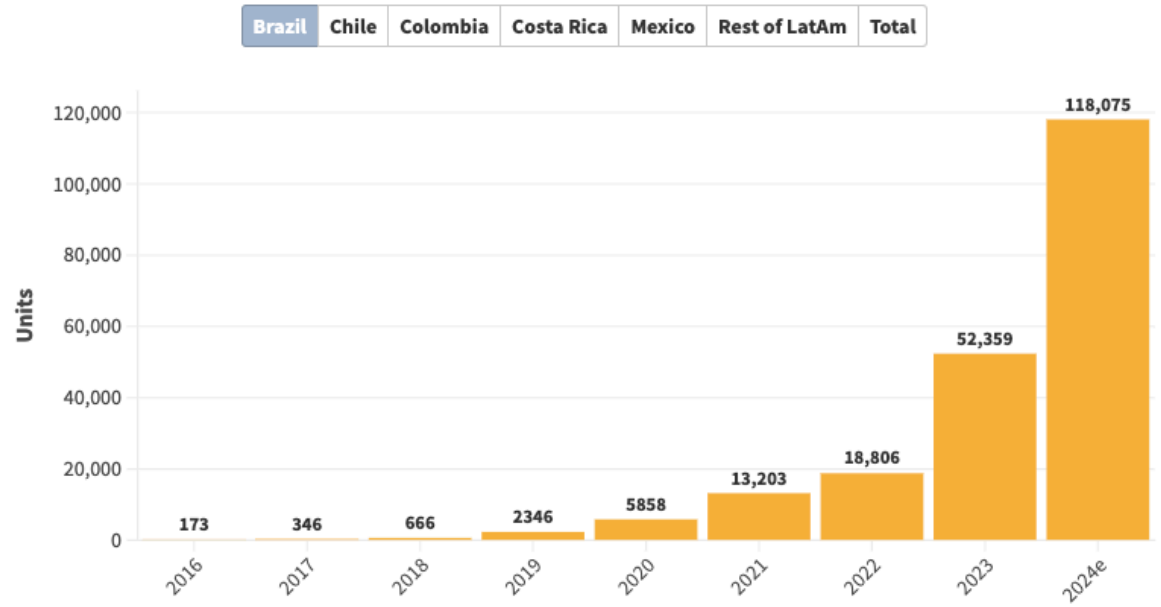
Fig. 13: Map of lithium mines by type and battery plants by stage of development in Latin America *(go online to access project details)*

Source: Zero Carbon Analytics Analysis, CEPAL (November 2024), BNEF Battery Cell Manufacturers (2025)

EV adoption is picking up the pace

In Latin America, 2024 marked the strongest year of growth for electric vehicle adoption, led by Mexico and Brazil. EVs accounted for over 6% of new passenger car sales in Latin America, up from the previous year's share of 2%. EVs will make up between 10% and 20% of new passenger car sales in Latin America by 2028, according to forecasts from Bloomberg NEF. The growth of local Chinese EV manufacturing is expected to contribute to lower costs, helping to drive sales upward over the next four years.[3]

Fig. 14: EV sales in Latin America *(go online for all country graphs)*



Source: Zero Carbon Analytics Analysis, Latin America Electric Vehicle Outlook 2024-28
Electrified vehicles include battery-electric (BEVs) and plug-in hybrid vehicles(PHEVs). For 2024 sales data, BNEF estimated November and December sales based on linear regression. 'Rest of LatAm' includes Argentina, Dominican Republic, Ecuador, Peru, Uruguay, Panama and El Salvador.

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[3] Bloomberg NEF, 1.