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Electricity Generation

Report in Latin America and
the Caribbean





Energy joins us

This document was prepared under the direction of the
**Latin American Energy Organization
(OLADE)**

Year 2024:

Electricity Generation Report in Latin America and the Caribbean

*With this report, we launch the new “**OLADE Monthly Electricity Generation Report**,” which provides an analysis of the performance of the electricity system in Latin America and the Caribbean (LAC). It presents data on electricity generation, the share of different energy sources, as well as year-over-year, monthly, and seasonal variations.*

On this occasion, in addition to the data corresponding to the month of December 2024, an analysis of electricity generation for the entire year 2024 is included.

The electricity sector in LAC plays a key role in the region’s sustainability and economic development, with a generation mix characterized by a high share of renewable sources.

Monitoring electricity generation is essential to understand market developments, energy security and progress towards decarbonization and a fairer and more resilient energy transition.

1. Electricity Generation 2024

In 2024, electricity generation in LAC grew by 5.5%, driven mainly by the expansion of wind and solar photovoltaic plants, as well as by a greater share of natural gas in the electricity matrix. See Figure 1.

The countries that have the greatest influence on the growth of regional electricity generation by 2024 are in order of importance: Brazil, Mexico, Argentina, Chile and Colombia according to the size of their energy systems and annual growth rates.

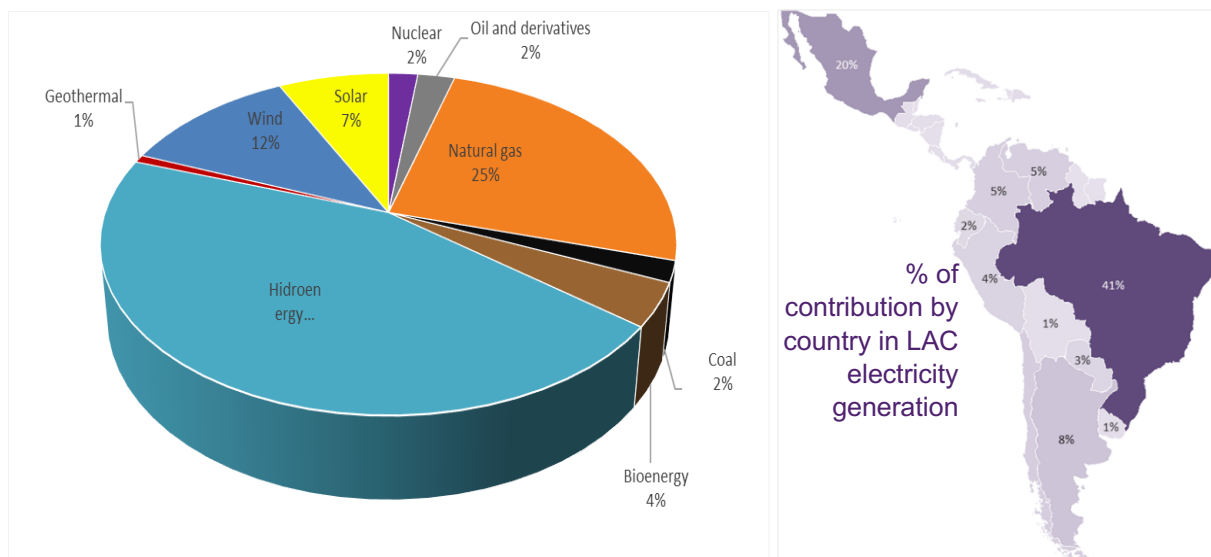
The share of electricity generation by source in 2024 was as follows:

- Hydropower (45%)
- Natural gas (25%)
- Wind (12%)
- Solar (7%)
- Bioenergy¹ (4%), mineral coal (2%), nuclear (2%), petroleum derivatives (2%) and geothermal (1%).

¹Bioenergy includes biogas, biomass (mainly cane bagasse) and biofuels.

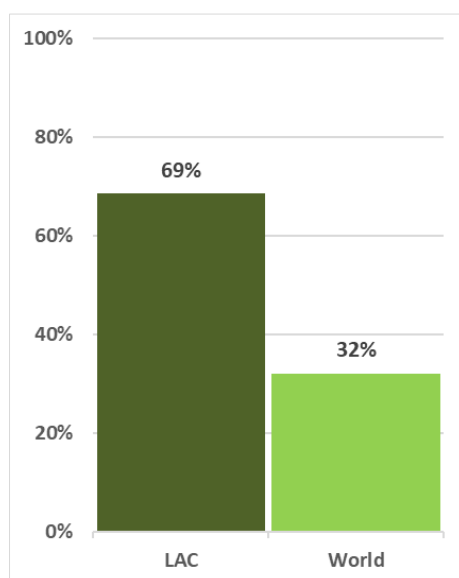
The sources of electricity generation that registered growth were geothermal (48%), solar (39.7%), wind (37.3%), natural gas (7.8%), hydroelectric (5.9%), nuclear (1.2%) and bioenergy (1.7%). In contrast, decreases were observed in the use of oil and its derivatives (-58.8%) and coal (-36.9%).

Figure 1: Total electricity generation by source and contribution from Lac countries, 2024.



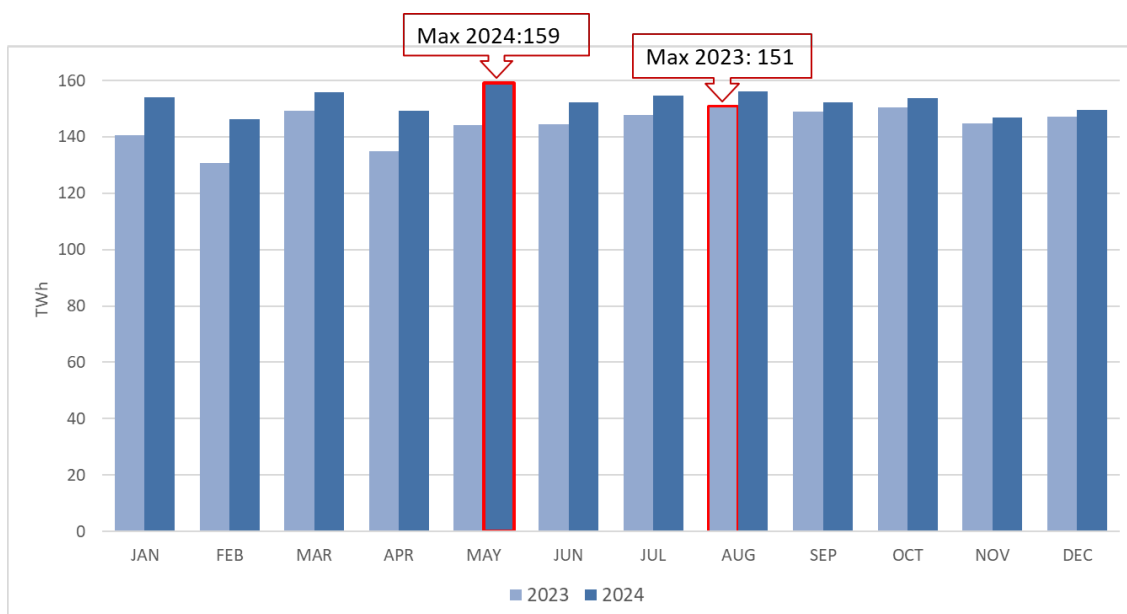
As a result, the renewability index, which measures the proportion of electricity generated from renewable sources compared to total electricity generation, reached 69%. This was nearly twice the global average, driven mainly by hydropower. See Figure 2.

Figure 2: Renewability index of LAC, 2024.



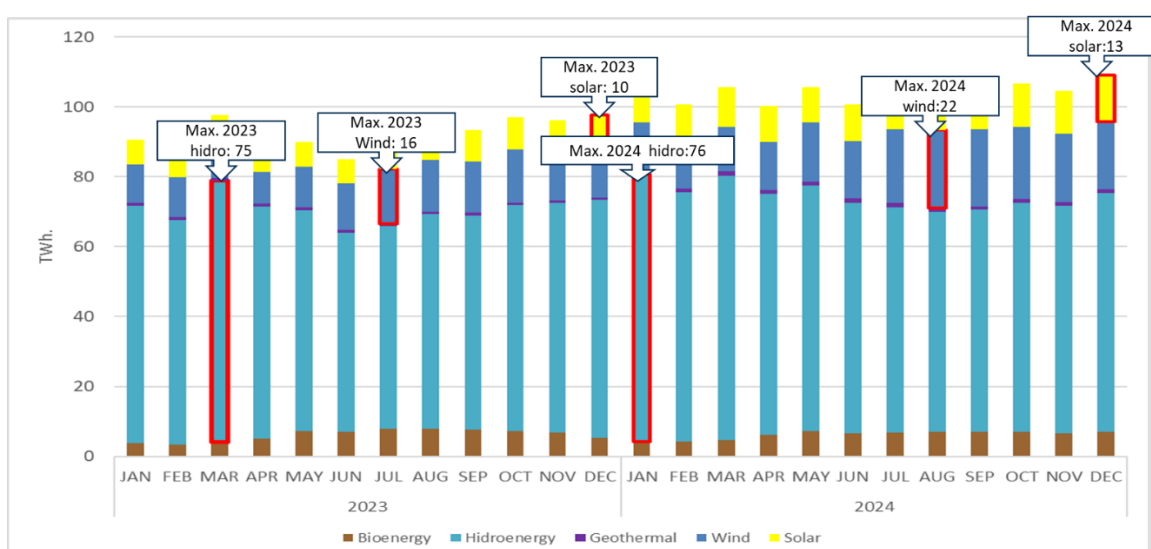
During 2023 and 2024, it is observed that **climate seasonality** affects electricity generation due to the region's high dependence on renewable sources, primarily hydropower, solar, and wind energy. The months with the highest electricity generation were August 2023 (151 TWh) and May 2024 (159 TWh). See Figure 3.

Figure 3. Months with highest total electricity generation in LAC, 2023-2024.



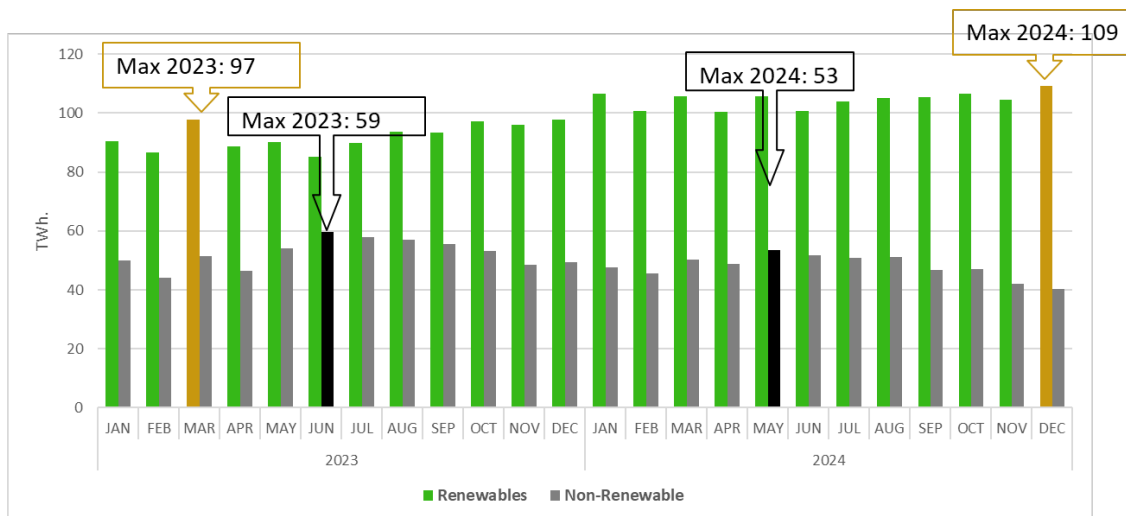
In terms of hydroelectric generation, the highest values were recorded in March 2023 (75 TWh) and January 2024 (76 TWh). Solar generation peaked in December of both years, 2023 (10 TWh) and 2024 (13 TWh). Finally, wind generation had its highest production in July 2023 (16 TWh) and August 2024 (22 TWh). See Figure 4.

Figure 4. Months with increased renewable electricity generation: hydro, wind and solar in LAC, 2023-2024.



Electricity generation from renewable sources in LAC peaked during the months of March 2023 and December 2024, as shown in Figure 5.

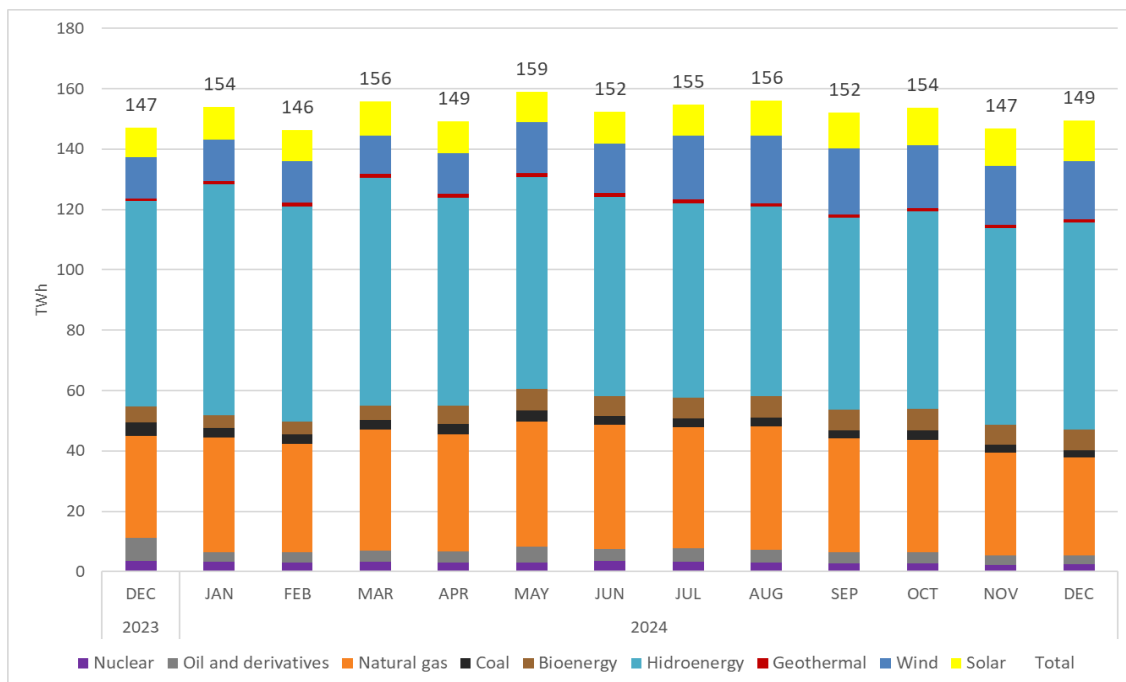
Figure 5. Months with highest total electricity generation in LAC, 2023-2024.



2. Electricity Generation - December 2024

In December 2024, **electricity generation** in LAC reached 149 TWh, which represented an increase of 1.3% in the year-on-year comparison with respect to December 2023. See Figure 6.

Figure 6. Electricity generation by source, LAC

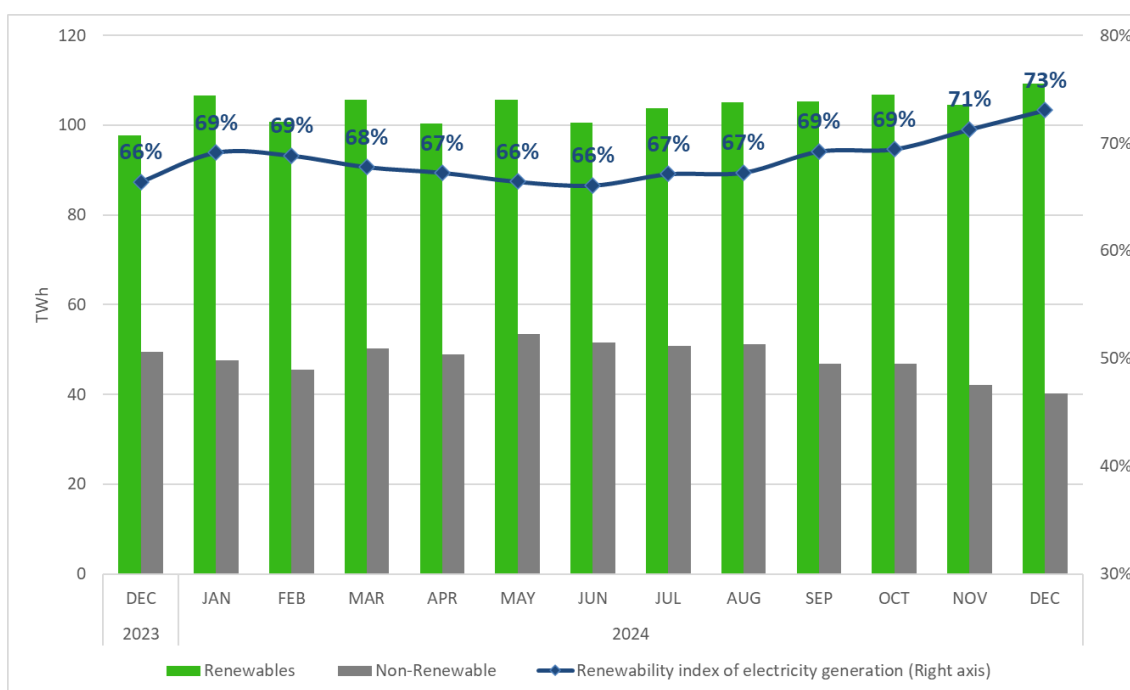


As for the share of **electricity generation by source**, in December 2024 it was:

- Hydropower (46%)
- Natural gas (22%)
- Wind (13%)
- Solar (9%)
- Bioenergy (5%)
- Mineral coal (1%), oil and petroleum products (2%), nuclear (1%) and geothermal (1%).

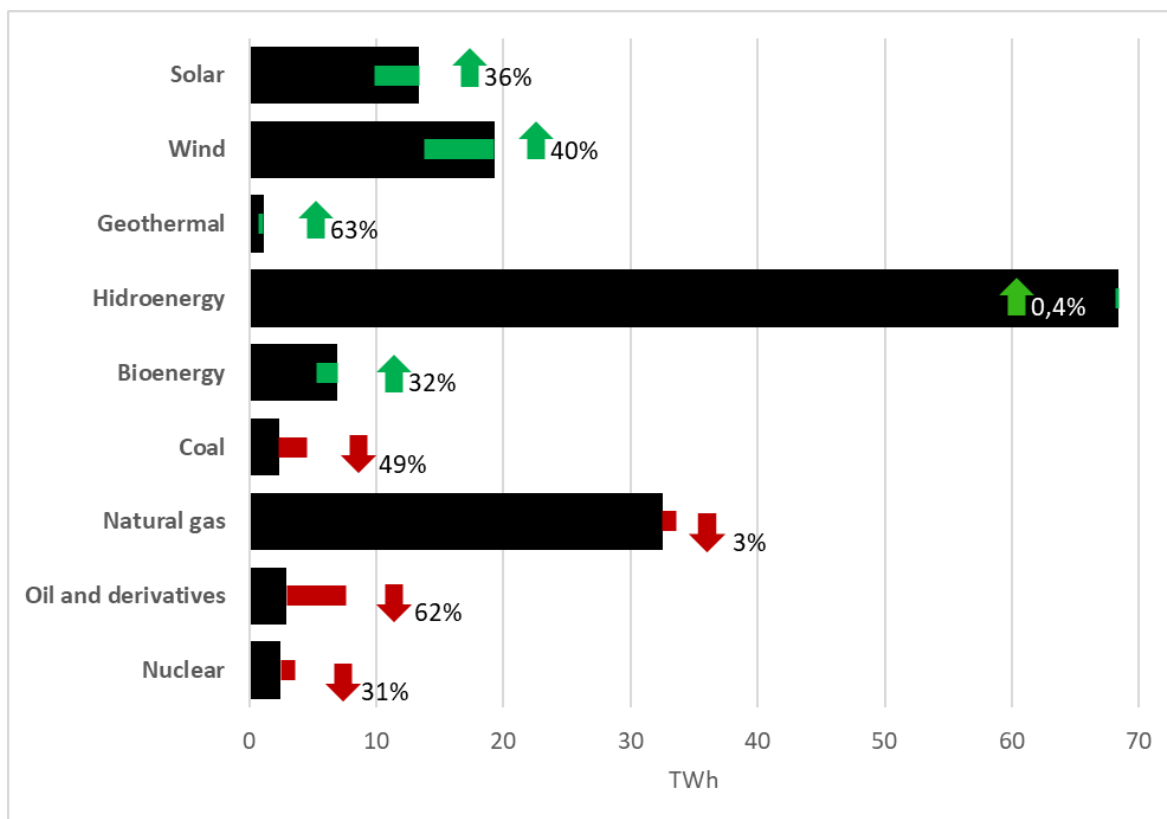
In December 2024, generation from non-renewable sources reached 40 TWh, while renewable sources accounted for 109 TWh, resulting in a renewability index of 73%. Approximately 10 countries in the region contributed significantly to this result, with renewability indices above 75%, of which 6 were from South America and 4 from Central America (see Figure 7).

Figure 7. Renewability Index in Electricity Generation, LAC



The **year-over-year variation**, compared to the same month of the previous year, showed a reduction in generation from oil and its derivatives (-62%), coal (-49%), nuclear energy (-31%), and natural gas (-3%). On the other hand, increases were recorded in geothermal generation (63%), wind energy (40%), solar energy (36%), bioenergy (32%), and hydropower (0.4%). See figure 8.

Figure 8. Year-over-Year Variation in Electricity Generation in LAC, as of December 2024.



	Annual dec 23/dec 24	
Nuclear	-31%	↓
Oil and derivatives	-62%	↓
Natural gas	-3%	↓
Coal	-49%	↓
Bioenergy	32%	↑
Hidroenergy	0.4%	↑
Geothermal	63%	↑
Wind	40%	↑
Solar	36%	↑



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