



# Energy transition powering transformative sustainable development in Latin America and the Caribbean

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**CEET Consultation with Latin America and the Caribbean (LAC) Region**

**May 16th**



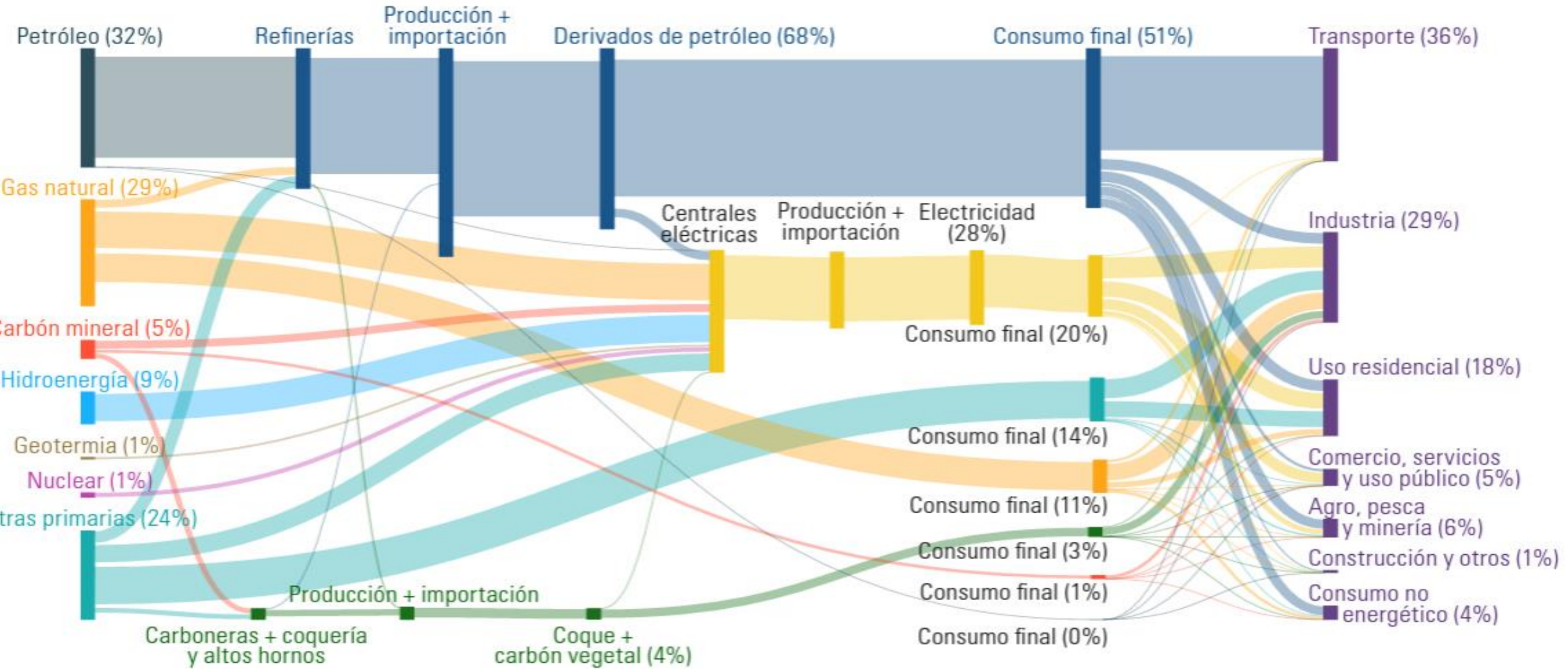
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# LAC Energy balance 2021: 66% of primary energy supply is fossil based, oil (32%), natural gas(29%), and coal (5%)

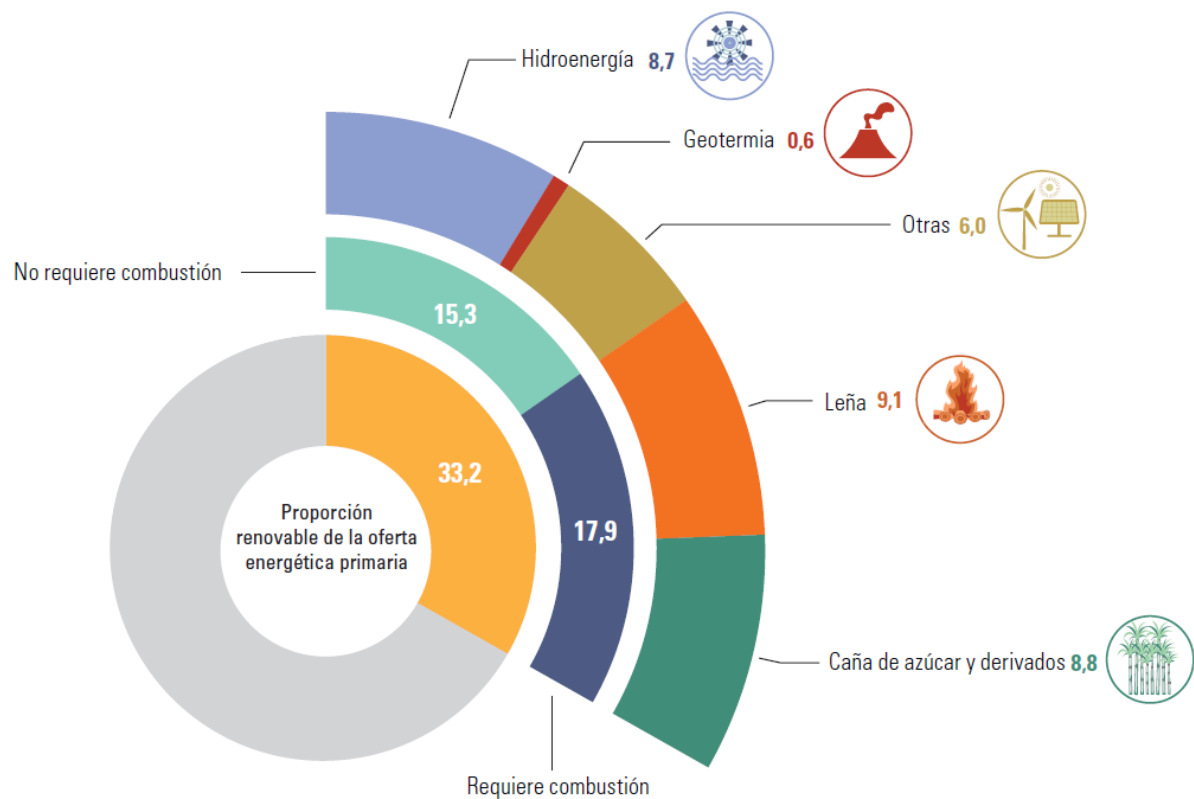


Fuente: Organización Latinoamericana de Energía (OLADE), Sistema de Información Energética de Latinoamérica y el Caribe (SIELAC) [base de datos en línea] <https://sielac.olade.org>

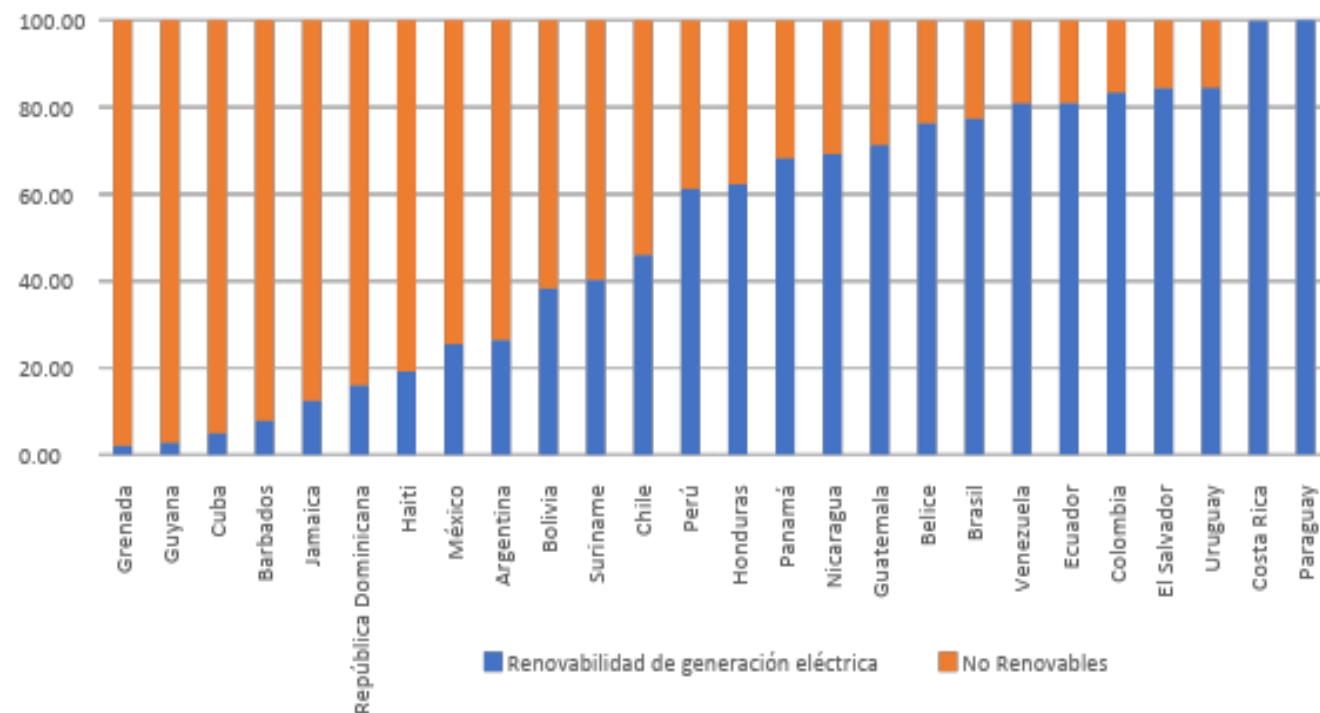
Nota: Todos los flujos que proceden de la izquierda corresponden a la oferta total de cada una de las fuentes de energía. La categoría "otras primarias" incluye biogás, residuos vegetales, productos de caña, leña, solar y eólica

# LAC 2021: Primary energy supply is 33% renewable while electricity is 61,3% is renewable

## LAC: Renewable Primary Energy Supply by source, 2021



## LAC (26 countries): Renewable electricity generation, 2021



Fuente: CEPALSTAT en base a OLADE

# Main energy challenges in LAC region

**16.1 million people do not have access to electricity** and **77 million do not have access to clean cooking systems** (wood and coal are used). Quality of electricity and energy poverty standing issues.

SDG 7.1

The energy matrix is **mostly based on fossil fuels (67%), only 33% is renewable**. Transport is the main final energy consumer, which relies on fossil fuels and accounts for 36% of total consumption, followed by industries (29%) and the residential sector (18%).

SDG 7.2

**Energy intensity of GDP has decreased since 1990. Energy efficiency is stagnant,** transport has shown a slight improvement in efficiency.

SDG 7.3

**Inadequate governance** of the electricity system **has concentrated private investment in the generation subsector**. Deteriorated and insufficient transmission and distribution networks, had led to a reduction in quality and had increased energy insecurity in the face of external shocks.

SDG 7.a

Existing electricity and natural gas transmission infrastructure represents **an opportunity for interconnection** of renewable electricity and green hydrogen in the region, but there is a lack of political agreements.

SDG 7.b

SDG7 LAC  
región: halfway  
to 2030



The goal has been achieved or is likely to be achieved with the current trend.  
The trend is correct, but the progress is too slow to reach the goal.  
The trend is moving away from the goal.

New lost development  
decade 2014-2023: 0.8%  
growth GDP LAC region

# LAC pillars of Energy Transition



1. Universalize the **access** to electricity based on renewables and reducing energy poverty



2. Increase **renewable energy** in the matrix



3. Increase **energy efficiency** in all sectors the economy, including residential and buildings.



4. Strengthen **complementarity, integration and interconnection** among the region's energy systems.



5. Increase regional energy **security and resilience** to external shocks

**INVESTMENTS** equivalent to **1.3% of the region's annual GDP** over a decade would:

- Universalize access to electricity based on renewable sources
- Generate 7 million green jobs
- Reduce 31.5% CO2 emissions
- Improve integration, resilience and energy security

# Enabling policies to accelerate the energy transition in the region



To develop a new ecosystem based on **effective governance, active participation** from the public and private sectors, and community collaboration. This innovative approach will allow us to overcome obstacles and achieve a more sustainable and resilient future for everyone.



Improving **long-term planning** and regional energy integration to maximize the use of renewable energy and ensure energy security and sustainability in the region.



Unblock and mobilize the necessary **financing** to drive the energy transformation towards a sustainable and resilient economy. A new governance ecosystem to achieve the energy transition.

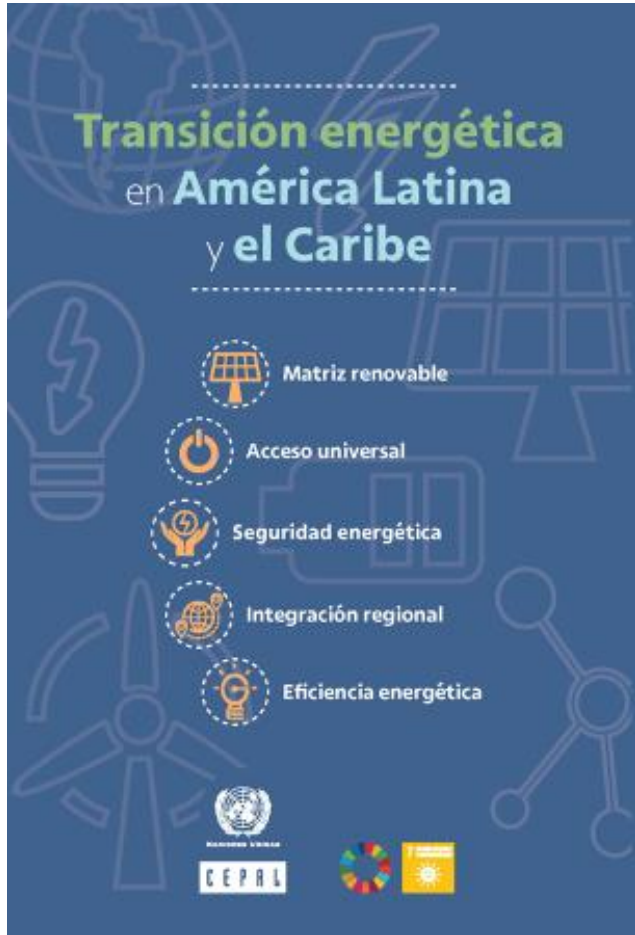


Accelerate deployment **energy efficiency programs** in all productive sectors to reduce energy consumption and GHG emissions, while fostering competitiveness and sustainability in industries.



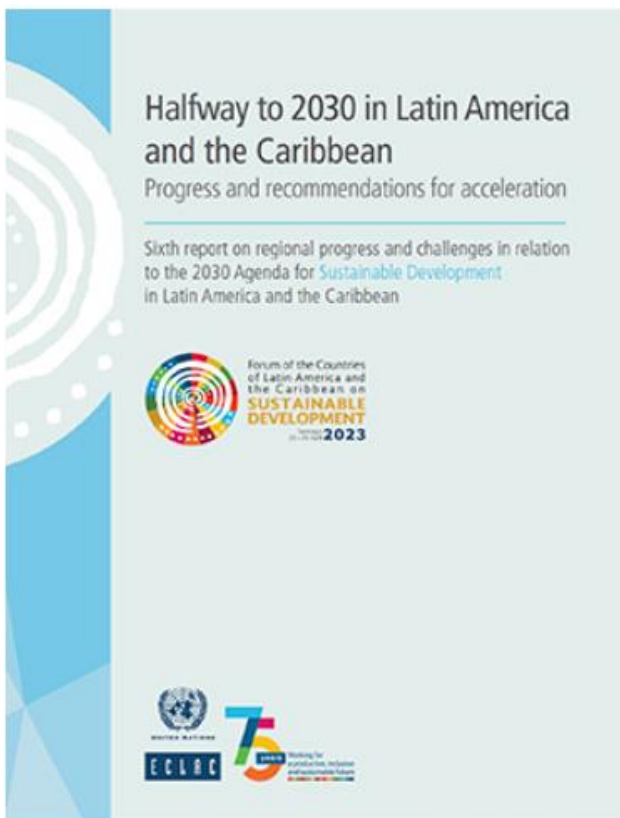
Boosting the **demand and supply of renewable energies** is a crucial challenge to accelerate the energy transition towards a more sustainable and resilient future, promoting innovation, employment, and economic growth at the same time.

# Energy transition and related industries in LAC



- ECLAC strongly promotes energy transition paths as a **new engine of transformative productive development**
  - expanding new related industrial sectors,
  - producing more value added and capturing it throughout productive chains,
  - While creating green jobs and income.
- How? Capitalizing existing knowledge, engineering capacities, pilot experiences in renewable energy sources and critical minerals.
- Five key technological developments stand out in the region for their transformative and synergistic potential: **Eolic and solar, storage, green hydrogen, lithium & copper and electromobility.**

# Energy transition and related new industries in LAC



**Eolic and Solar & Storage.** Growing more rapidly in the region than non renewables, with diminishing LCOE prices for both electricity generation and storage.

**Green hydrogen:** It is estimated that green hydrogen will come to represent 18% of final energy demand by 2050, reduce emissions by 20% to 25%, generate US\$ 2.5 trillion in annual sales and more than 30 million green jobs worldwide

## Critical minerals

**Lithium:** Latin America and the Caribbean is home to 56.8% of the world's lithium resources and currently contributes 31.4% of the world's lithium production.

**Copper:** Chile and Perú are the main global producers with 7.4 million metric tons in 2022. Global copper production has experienced a considerable increase in recent years.

**Electromobility:** The electric vehicle share of global sales in the light passenger car segment increased from 2.2% to 8.3% between 2018 and 2021. Electric buses have also increased their share to 4% of the global fleet in 2021.



# Projects highlights in the LAC region



## Haru Oni Project Project, Magallanes (Decarbonizing transportation)

- It is part of the **Strategy for the development of green hydrogen industry in Chile.**
- Pilot plant under construction to produce green hydrogen and e-fuels, from wind energy of Magallanes (Chile).
- In the pilot phase, e-Methanol production will reach around 750,000 liters per year by 2022. Part of the e-Methanol will be converted into e-Gasoline (130,000 liters per year). In the second step, the capacity is planned to increase to 55 million liters of e-Gasoline per year by 2024 and to over 550 million liters per year by 2026.
- The synthetic fuel emits approximately 90 percent less CO2 than its fossil counterpart.
- Company: AME/ Siemens, Gasco and Porsche, and collaboration with ENEL and ENAP.



Source of the images: Siemens Energy: <https://www.siemens-energy.com/mx/es/soluciones/energia-renovable/soluciones-de-hidrogeno/haru-oni.html>

# Projects Highlights in the LAC region



Source of the image: Acciona



Source of the image: <https://elpais.com/mexico/2023-02-03/el-parque-fotovoltaico-mas-grande-de-america-latina-se-encendera-en-abril-en-sonora.html>

## **Puerto Peñasco Project (Plan Sonora, Mexico): Large photovoltaic park**

- Initiated first stage of the photovoltaic park, which will generate 120MW and 1,000MW by 2027.
- In the short and medium term, a cluster will be generated to integrate the supply generation and logistics chain for the production of electric vehicles, promote lithium production (state-owned company LitoMx) for battery manufacturing, and further boost electricity generation in the last stage.
- 1.4 million tons of CO<sub>2</sub> will be avoided, which is equivalent to taking about 270,000 cars off the road.
- It will be located on a total of 2,000 hectares. The capacity of clean electricity generation will be sufficient to illuminate 100 million energy-saving light bulbs, benefiting 536,000 households.
- Company: Comisión Federal de Electricidad, Empresa Productiva del Estado.

# Conclusions

- Main challenges: significant gaps in access/quality to electricity and clean cooking technologies, primary energy supply is still dominated by fossil fuels, transport and industry sectors, insufficient investment in electricity transmission grids and distribution infrastructure, insufficient governance of the electricity sector.
- Build a **new governance ecosystem** to achieve the energy transition that includes the modernization and strengthening of institutions, policy development, and public-private and community participation and cooperation.
- Moving towards achieving SDG 7 in LAC region requires **interlinked and innovative policies**
- Opportunities to overcome the main challenges: **investment, and developing new renewable technologies value chains, powering new styles of development in LAC countries**
- **Renewable distributed energy** is the technological solution for the electrification of the last-mile.



**Thank you for your attention**

**Natural Resources Division, ECLAC**

Energy: <https://www.cepal.org/es/subtemas/energia>



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