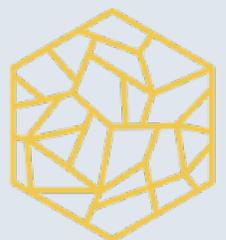




Beyond net-0: An international perspective on how decarbonisation strategies can foster a just transition and global cooperation



INETTT
International
Network of
Energy Transition
Think Tanks



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National context

Mexico is among the 15 largest economies in the world and the second largest economy in Latin America (World Bank, 2022).

GDP – \$1,272,839.33

(World Bank, 2021)

Mexico is the 13th GHG emitter (WRI, 2023).

653.9 MtCO₂e

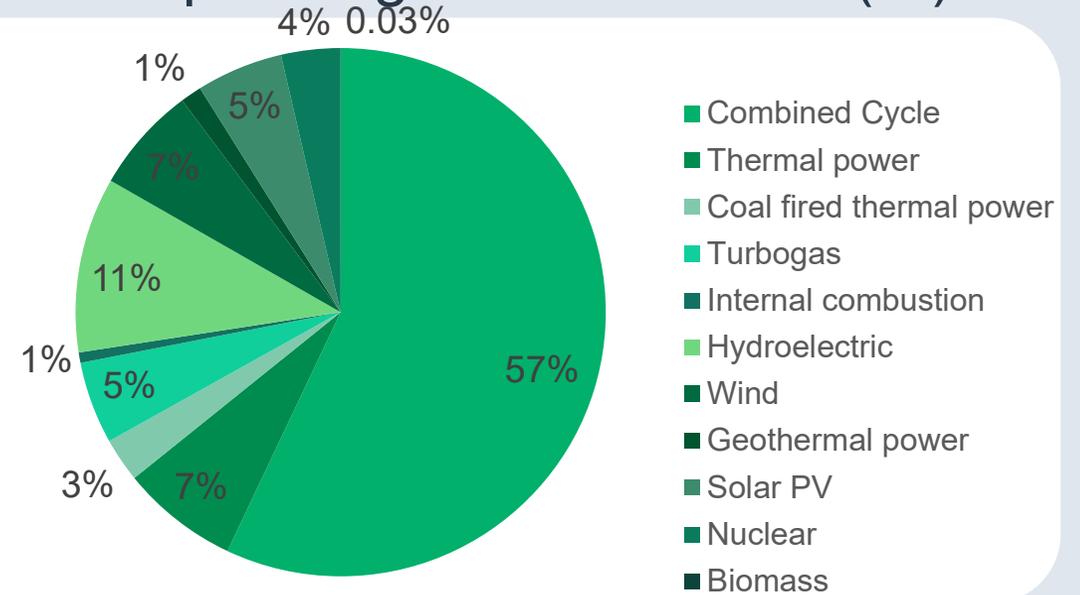
Mexico is also one of the top manufacturing countries



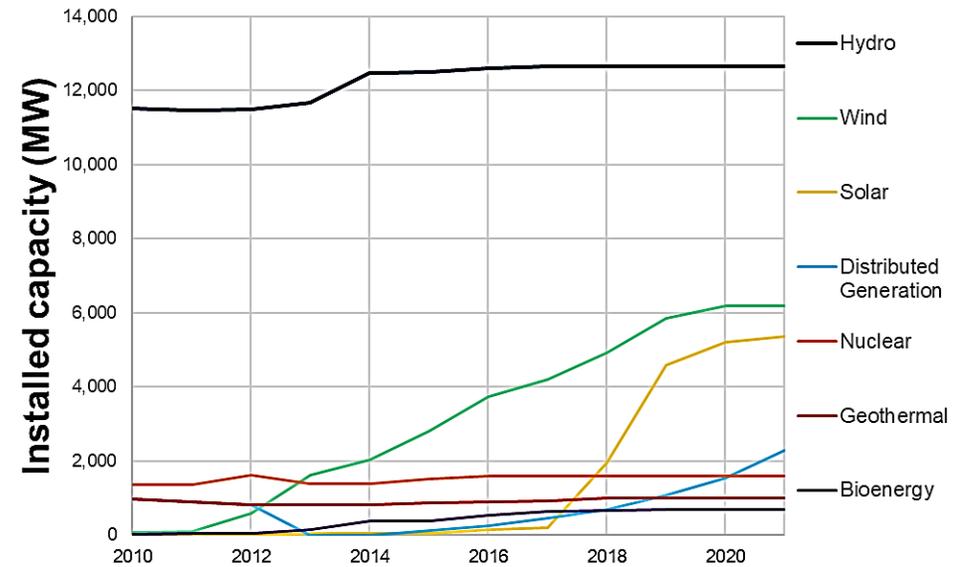
Mexican Power Sector

- Liberalization and restructuring of the electricity, oil, and gas sectors in 2013. Increased participation in private investment.
- Wholesale electricity market: Short-term market, power balance market, clean energy certificates market, financial transmission rights auctions, medium and long-term auctions (important way to increase renewables).
- Three long-term auctions took place and resulted in the acquisition of 23 TWh of clean energy, 23 million clean energy certificates, and 2,826 MW of installed capacity.
- However, since the new administration took office, there have been four attempts to backtrack the energy reform

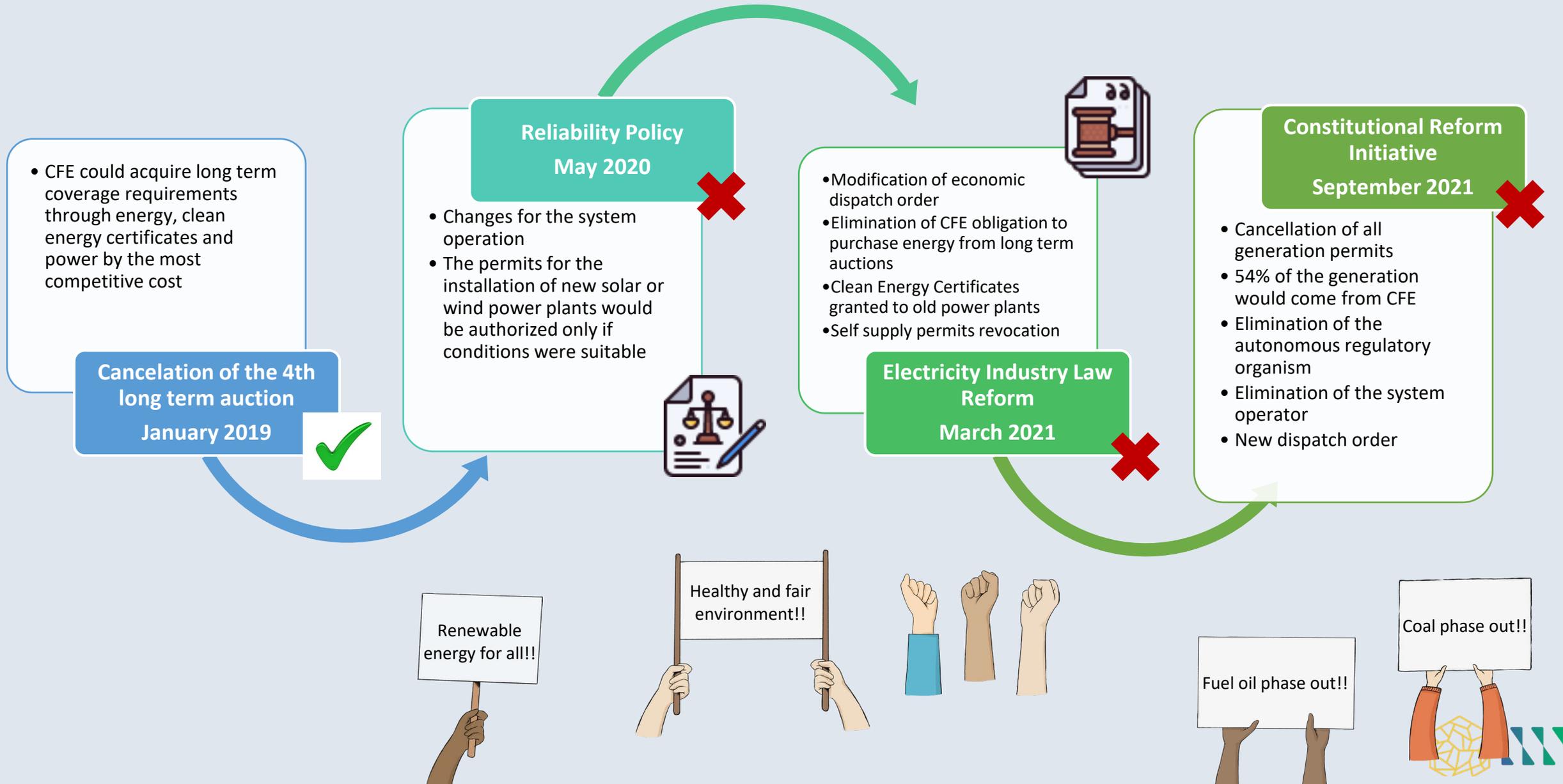
Net power generation 2021 (%)



Installed capacity 2010 - 2021



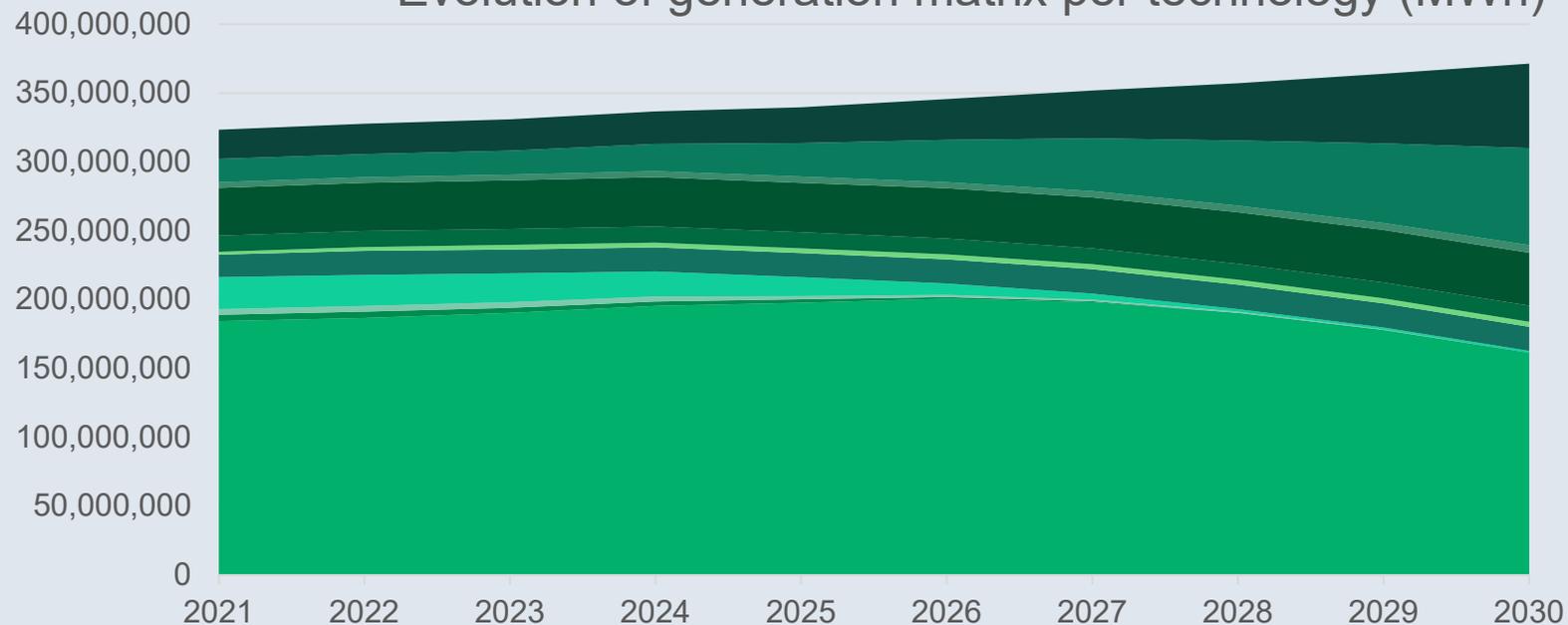
Four attempts to backtrack the 2013 Energy Reform



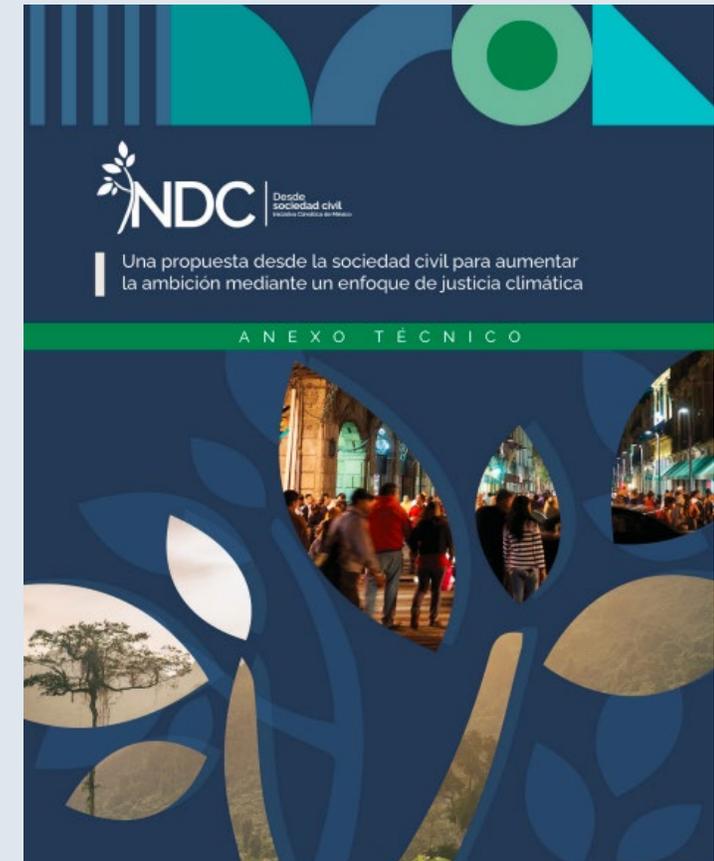
A clean energy transition is possible, but rapid transformative changes are needed

A 41% reduction in the power sector is technically and economically feasible and needed to achieve a 30% national reduction in 2030.

Evolution of generation matrix per technology (MWh)



- Combined cycle
- Coal Comb
- Fluidized bed
- Fuel Oil comb
- Peaker
- Internal Comb
- Nuclear
- Hydro
- Geothermal
- Solar PV
- Wind



Available at: <https://iniciativaclimatica.org/ndc/>



9 power actions that are needed to comply with the NDC

1. Transformative, rapid, and sustained changes to the energy policy

- Lift all administrative barriers (e.g., permitting, delays, litigation, stringent requirements) that have been stalling new renewable energy projects.
- Clear signals to regain the confidence of investors.

2. Reactivate market mechanisms and adopt new ones to accelerate the deployment of renewable energy and new technologies

3. Expand and strengthen the National Transmission Network and the General Distribution Networks.

4. Fossil fuel phase out of the power matrix

- Eliminate the use of coal and fuel oil by 2030
- Limit the installation of new natural gas-fired power plants

5. Set up a policy and regulatory framework that allows the development of new technologies (e.g., energy storage, green hydrogen, smart grids)

6. Deploy and scale up distributed generation projects that trigger social and economic benefits

- Ejido Solar and Hogares Solares

7. Strengthen the energy planning at the federal and subnational level

- Create a participatory process that involves all relevant stakeholders in the planning.
- Set up transparency mechanisms.

8. Energy Efficiency implementation in all sectors

9. Ensure the transition is just and inclusive



Electrification

The **car manufacturing industry** in Mexico has more than **doubled** since 2005 levels and its total gross value has been constantly growing by almost **5% per year**. In 2022, it represented **17%** of the manufacturing industry's gross value (INEGI, 2023).

Mexico has become a leader in exporting light duty vehicles and is among the **top 10 countries** in the world.

Tesla recently announced the construction of a new electric vehicle (**EV**) **gigafactory** in Mexico, but other companies are **converting their plants** to produce EVs (The Economist, 2023).

Mexico has a **skilled labour force** and a highly developed **supply chain infrastructure** for the car manufacturing industry. It has also a potential for battery production because of **lithium reserves**.



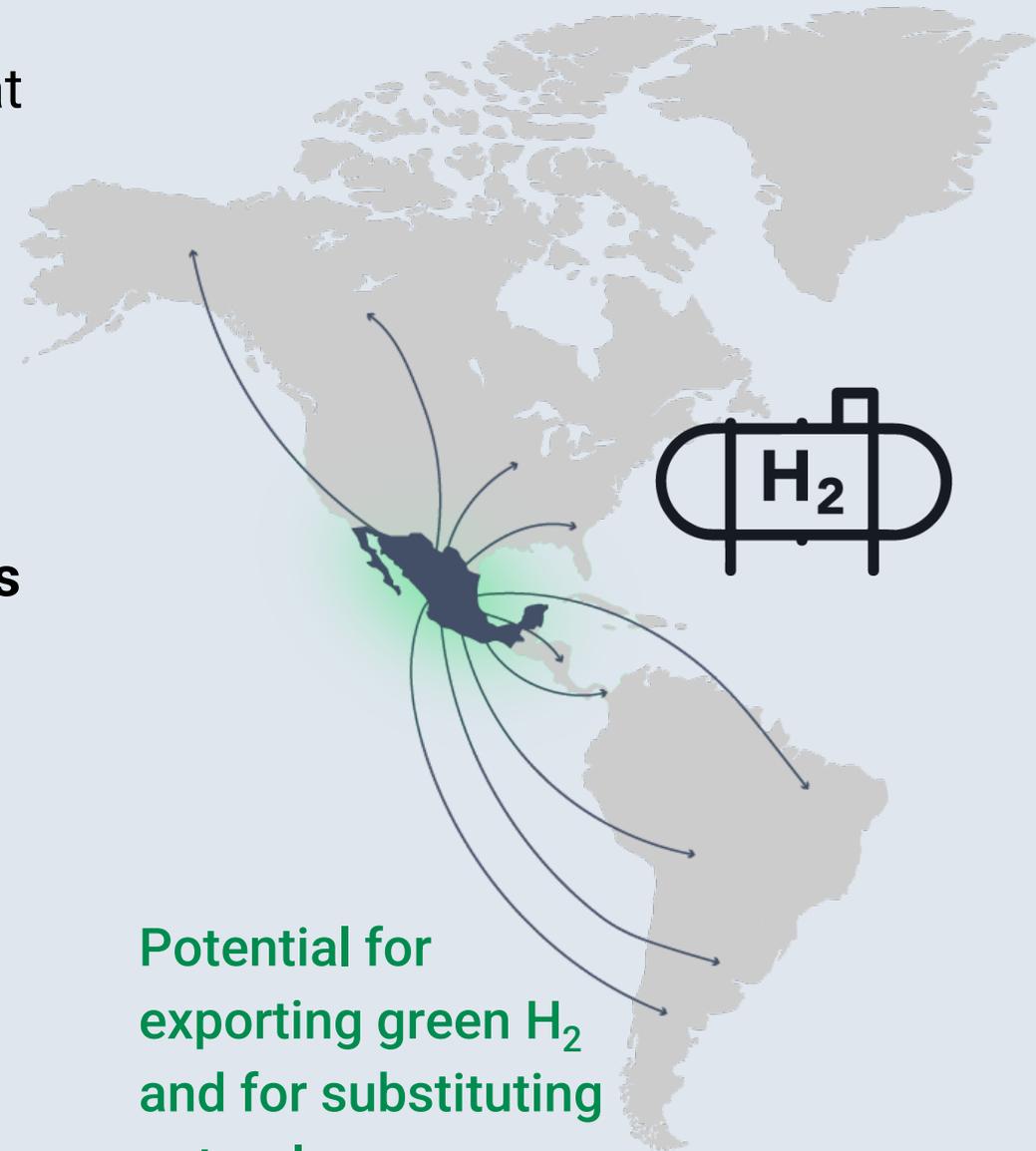
Green H₂

Green Hydrogen will be required to decarbonize sectors that are difficult to electrify, such as iron and steel, cement and petrochemicals, and in other sectors, such as transport and energy.

It has been identified that the country has the potential to install **22 TW of electrolyzer** capacity by 2050, avoiding the emission of **40 MtCO₂e** per year and create **90,000 new jobs** (GIZ, 2021).

The **levelized cost of hydrogen (LCOH)** could be between **2.55 USD per kg** in 2030 and **1.22 USD per kg** in 2050 (GIZ, 2021).

Opportunities have been identified in the **mining** industry (vehicles), **steel**, **ammonia**, **methanol**, and in the **energy** sector. Replacement of existing H₂ demand could mitigate more than **5 MtCO₂e per year** (CMM, 2022).



Potential for exporting green H₂ and for substituting natural gas





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