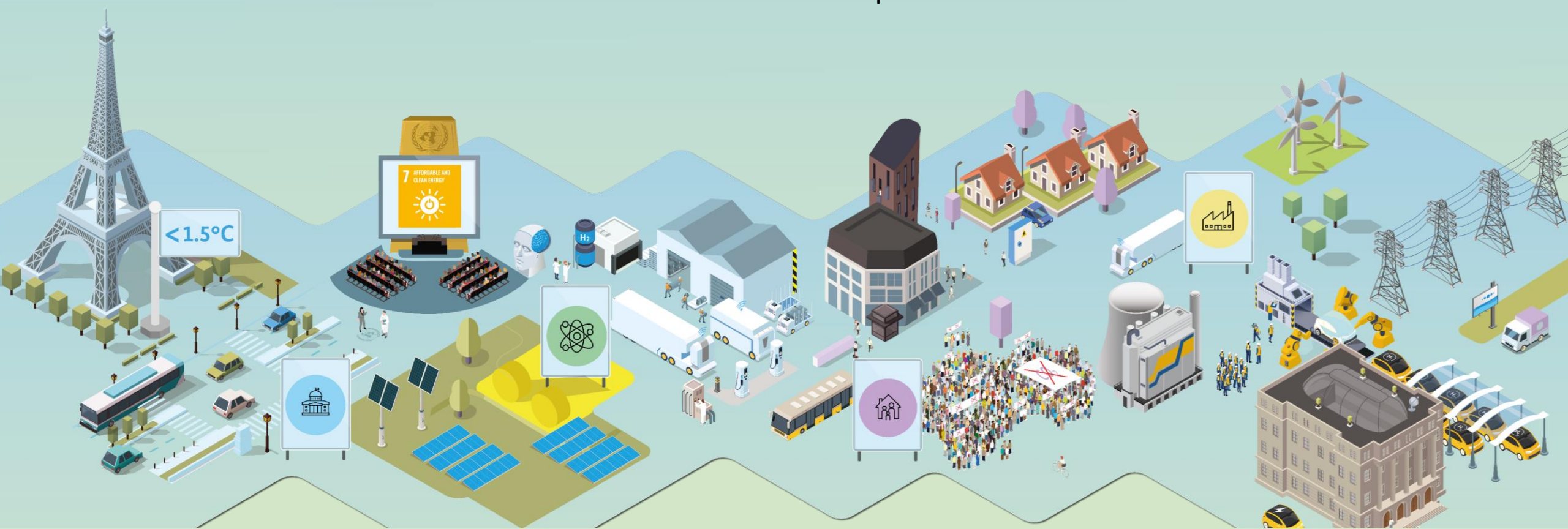


Travelling Exhibition: Energy in Transition – Powering Tomorrow

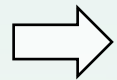
Colombian-German cooperation



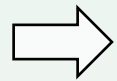
Colombia's NDC to the Paris Agreement

Within the framework of the Paris Agreement to limit climate change, Colombia has set out ambitious goals regarding their Nationally Determined Contribution (NDC) to achieve the Agreement's goals.

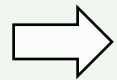
Colombia's 2021 Nationally Determined Contribution to the Paris Agreement:



Reduction of greenhouse gas emissions by 51% below business-as-usual scenario in 2030.



40% reduction of black carbon emissions in comparison to 2014 levels.



Establishing a pathway towards net-zero emissions by 2050.

Source: International Energy Agency (2025), [NDC to the Paris Agreement: Colombia](#).

Greenhouse Gas Emissions in Colombia

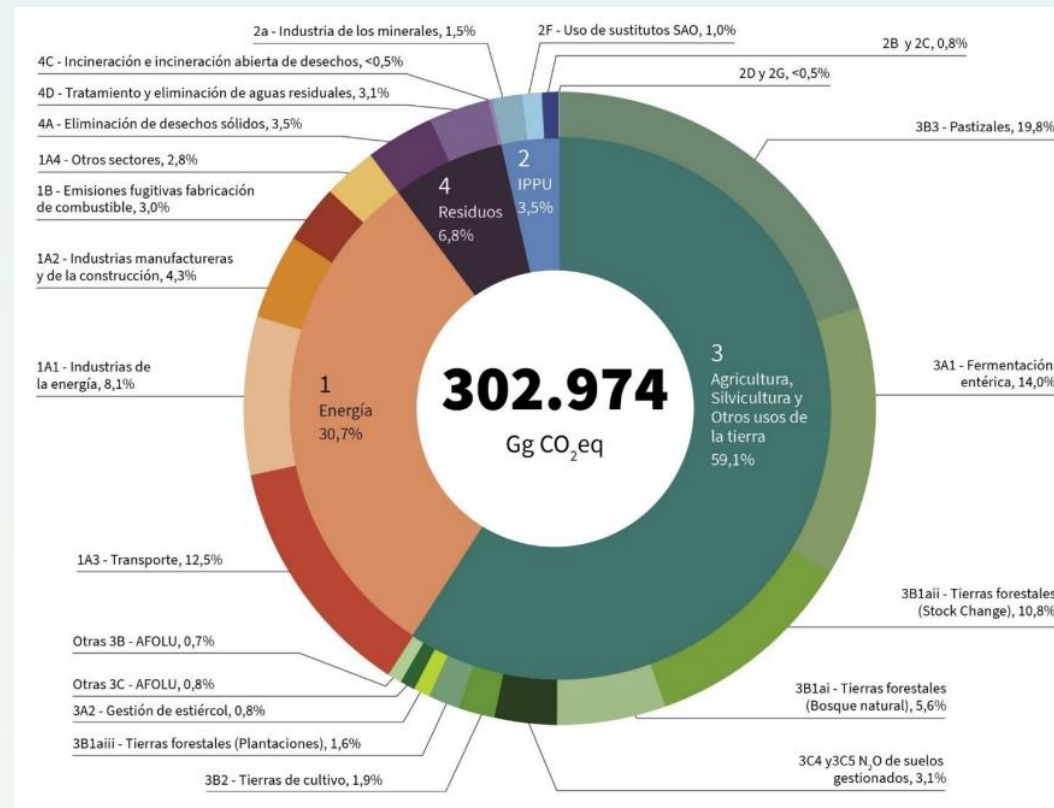


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Together with Agriculture, Forestry and other Land Uses (AFOLU), the energy sector is one of the large emitting sectors in Colombia, comprising more than 30% of its greenhouse gas emissions.

Greenhouse gas emissions in Colombia by sector

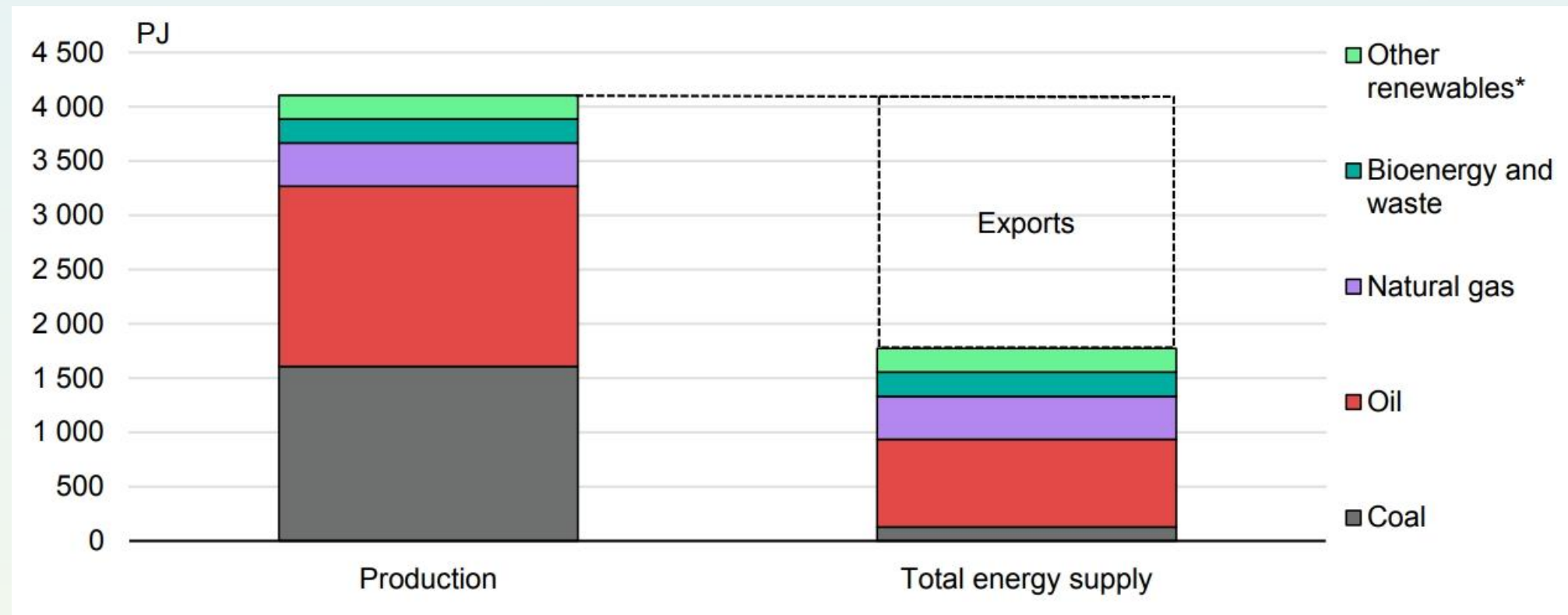


Source: XXXXXXXXXX, year?

Energy Production in Colombia

Colombia's energy production must decarbonize to achieve its NDC. At the moment, oil and coal are still dominant in the country's export-oriented energy sector.

Energy production and supply in Colombia by source (2021)



Source: International Energy Agency (2023), Energy Policy Review Colombia, p. 15.

Energy Demand in Colombia

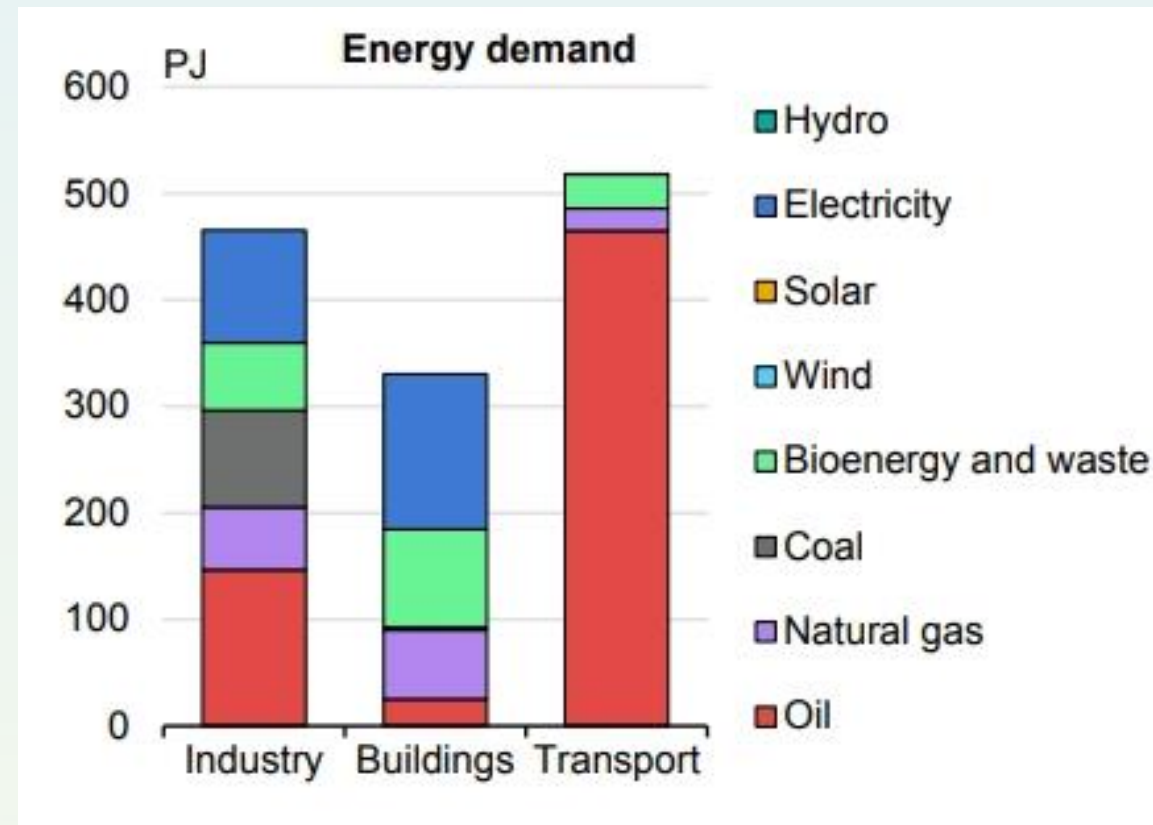


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Colombia's energy demand is split mainly between its industry, buildings and transportation. In order to become carbon neutral by 2050 (as set in Colombia's NDC), all of these sectors must undergo transformation.

Energy demand in Colombia by fuel (2021)

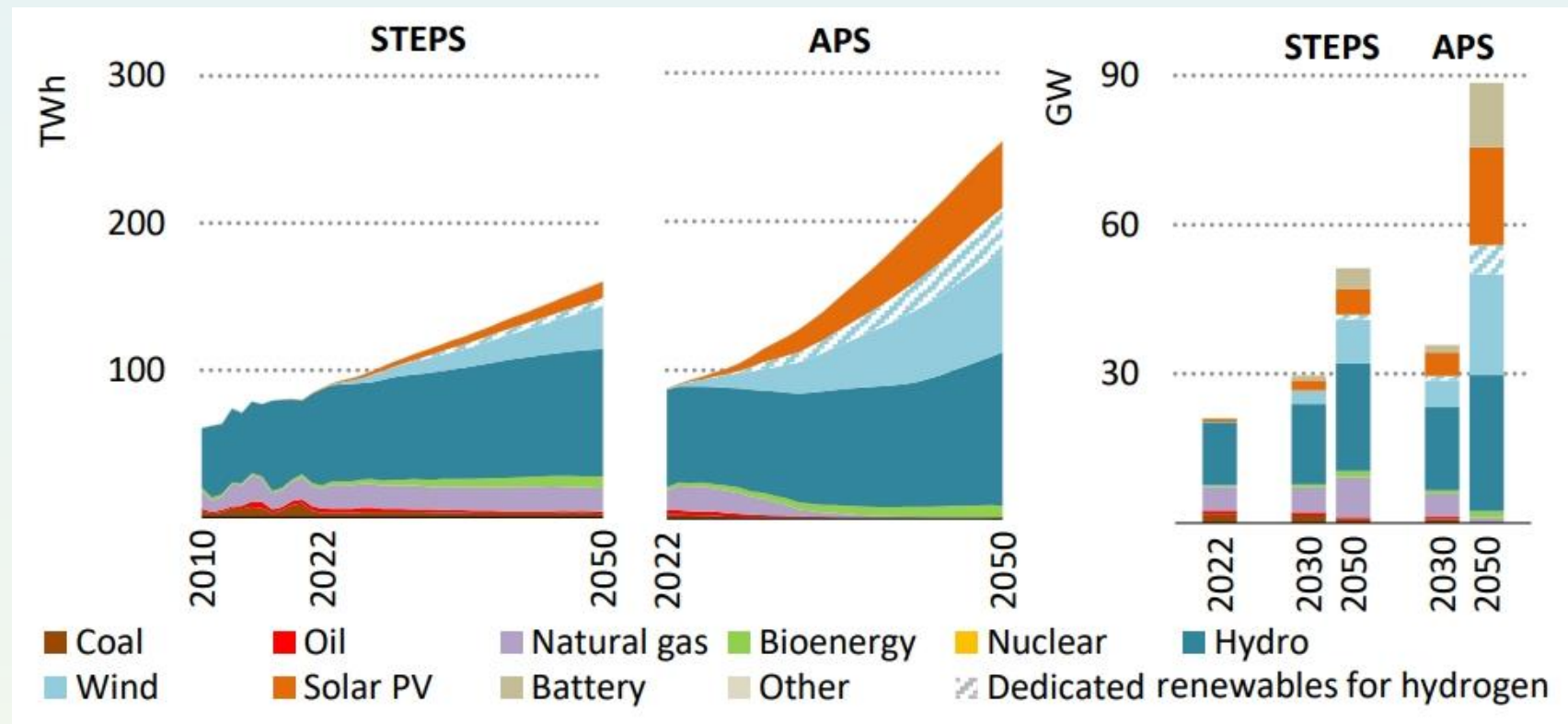


Source: International Energy Agency (2023), Energy Policy Review Colombia, p. 17.

Electricity Production in Colombia

Status Quo – Colombia's electricity production is already strong on renewables, but must diversify and adapt to rapidly changing climatic conditions to match domestic energy demand until 2050.

Electricity generation in Colombia by source - forecast



STEPS = Stated Policies Scenario; **APS** = Announced Pledges Scenario.

Source: International Energy Agency (2023), Colombia Energy Profile as part of the Latin America Energy Outlook 2023.

Renewable Energies in Electricity Production

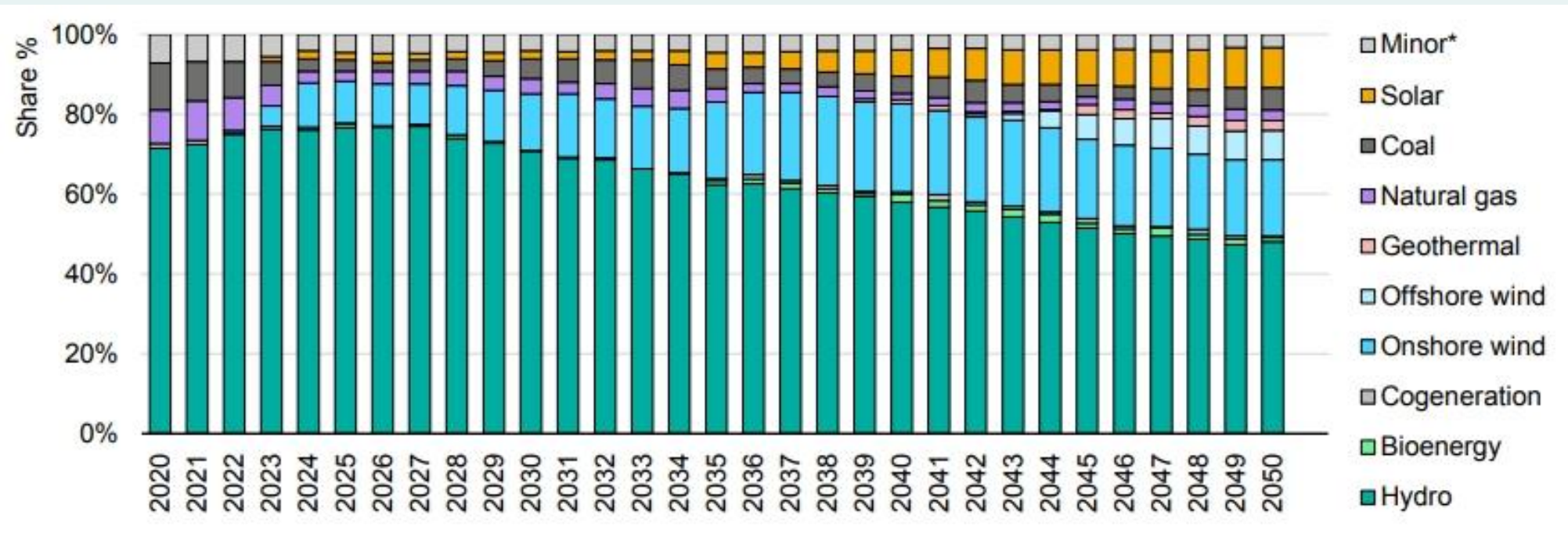


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Hydro-energy is Colombia's biggest asset when it comes to renewables. Decreasing amounts of rainfall are a threat to the long-term viability of this energy source, making solar and wind energy vital for the transition.

Electricity generation in Colombia by source – forecast II

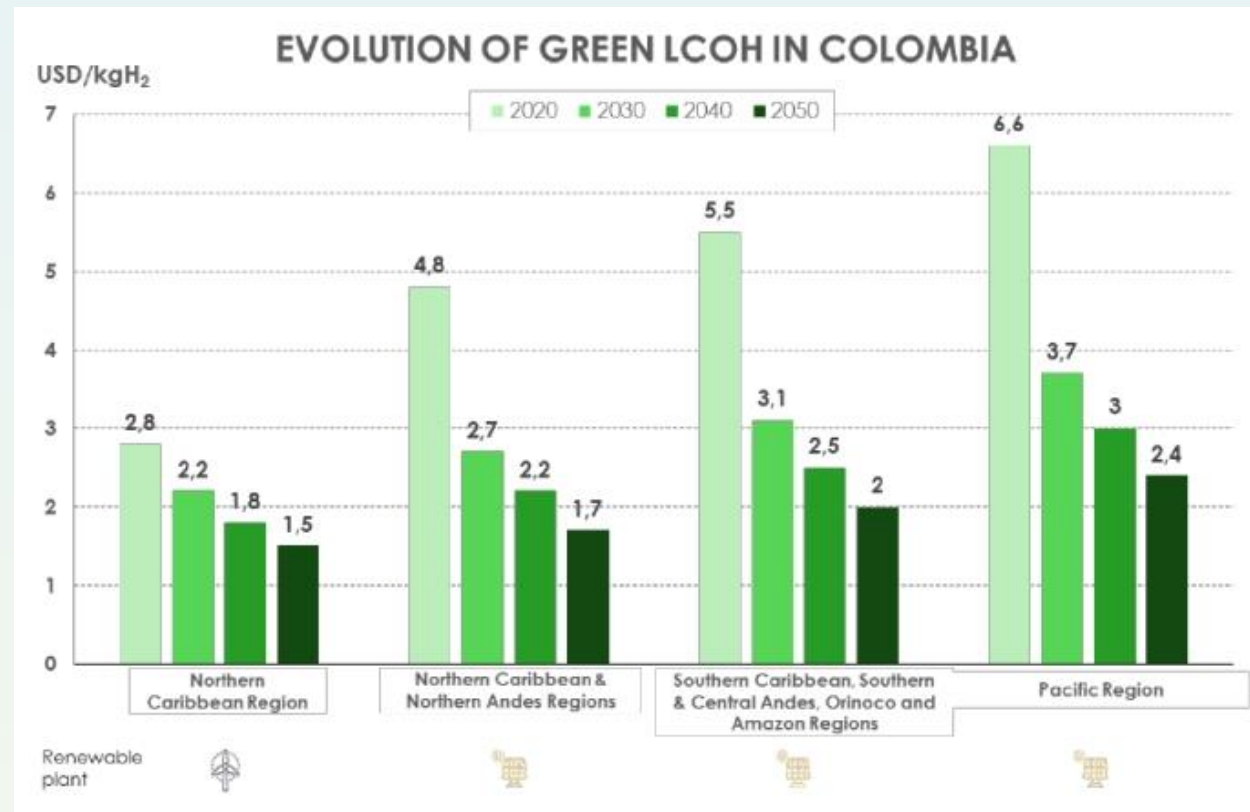


Source: International Energy Agency (2023), Energy Policy Review Colombia

Economic viability of renewables

With decisive long-term investments in renewable energy and H2-infrastructure comes a steady decline in production prices, paving the way for not only an environmentally but also a socially just transition.

Development of prices for green hydrogen production in Colombia by region



Source: Colombia's Hydrogen Roadmap (2021) & Transmilenio website (2023) – „[Conoce el primer bus a hidrógeno verde ensamblado en el país](#)“

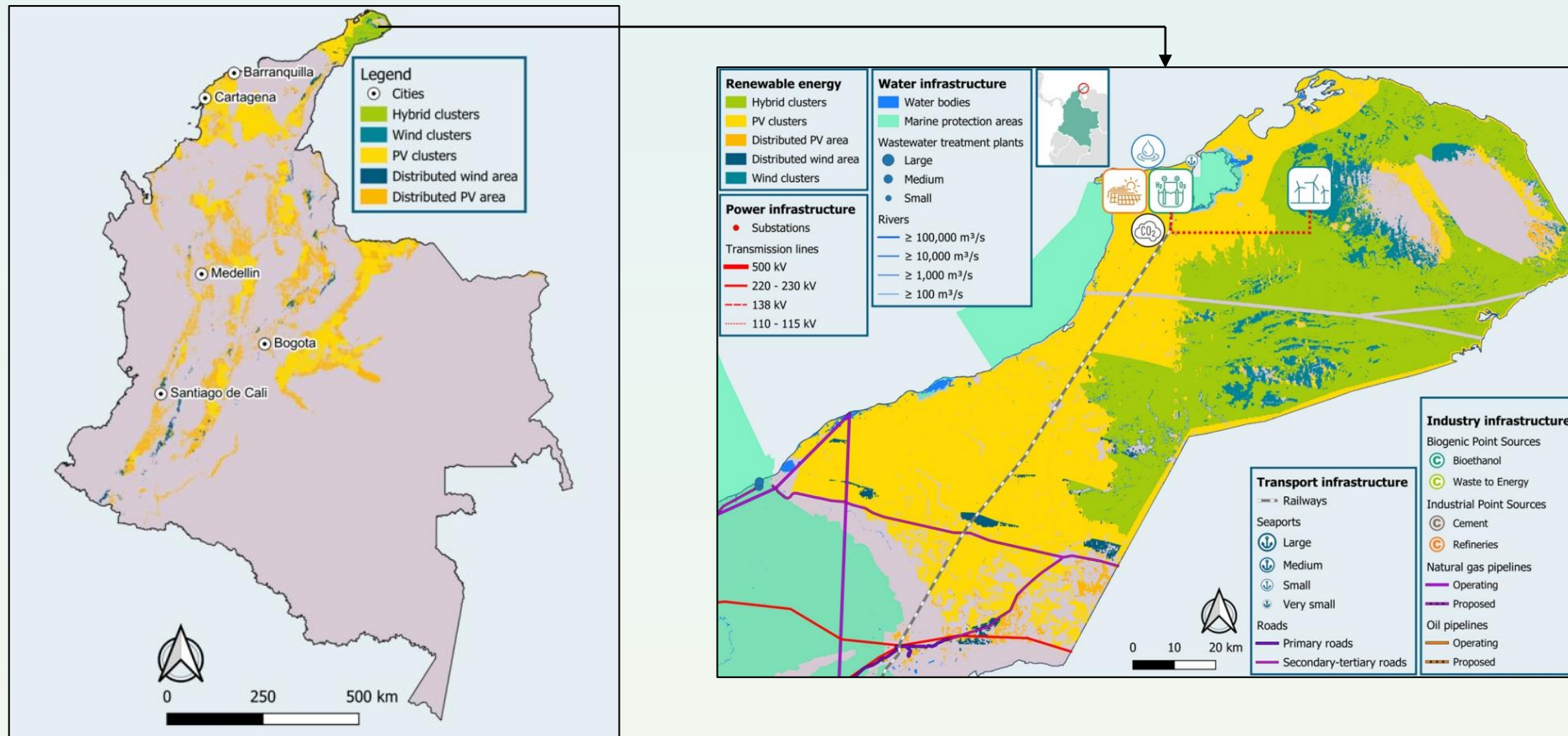
Colombia's Potential for Renewables



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Taking into account Colombia's protected areas and site suitability, there is much potential to implement the necessary capacities for electricity production and for storage and shipment of surplus energy (Power-to-X).



Source: Fraunhofer ISE 2024, Power-to-X Colombia

Potentials for Green Hydrogen

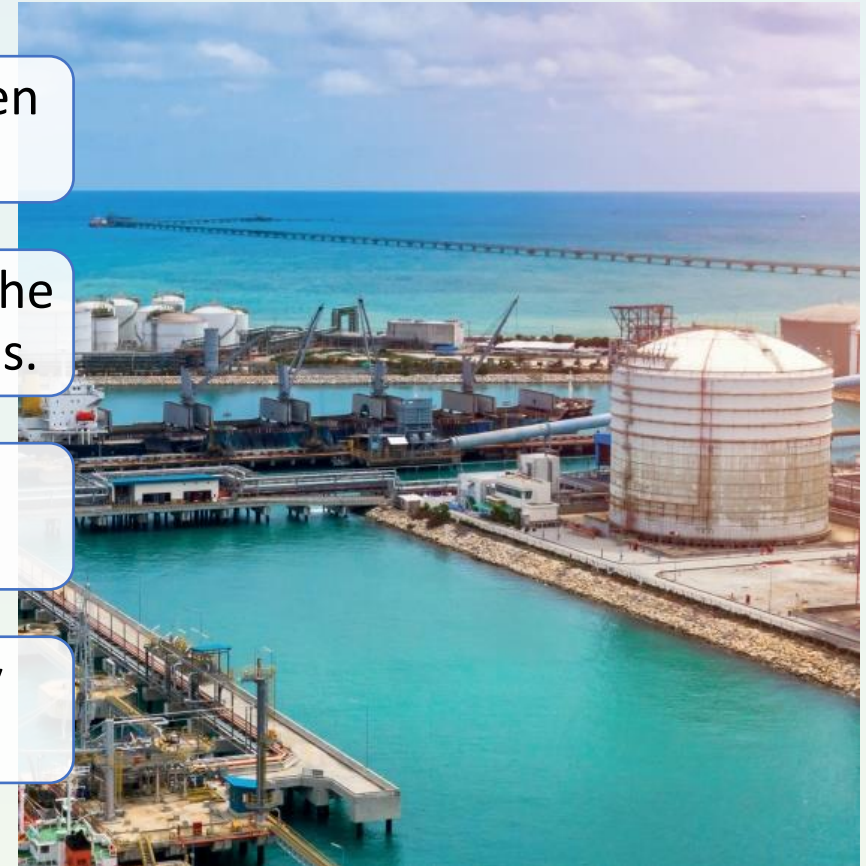


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By investing in production of and infrastructure for Green Hydrogen, Colombia might cover its own energy demand and become a frontrunner in exporting renewable energy.

- In the process of energy production, hydrogen can be used to store surplus energy.
- Hydrogen is called “green hydrogen”, when the energy stored comes from renewable sources.
- In this way, renewable energy can be stored, transported and shipped.
- Thus, Colombia could export its domestically produced renewable energy.



Source image: Fraunhofer ISE 2024, Power-to-X Colombia

Enabling a Just Transition

Colombia and Germany both face the challenge to cushion the economic and social transformation in areas dependent on coal exploitation. Investing in renewables offers potentials for future-proof employment.

A just transition entails multiple interconnected elements:



- Programs targeting affected groups

- Skills development



- Fostering innovation and investment



- Addressing gender gaps

- Addressing informal employment



- Management of long-term environmental issues of mining activities



Enabling a Just Transition

In Colombia, multiple political stakeholders are working towards the implementation of policies to make the just transition happen.

Colombia's measures to foster a just transition for its citizens



Source: World Resources Institute, What Is a Just Transition and Why Is it Crucial for Colombia? (2025)

Enabling a Just Transition

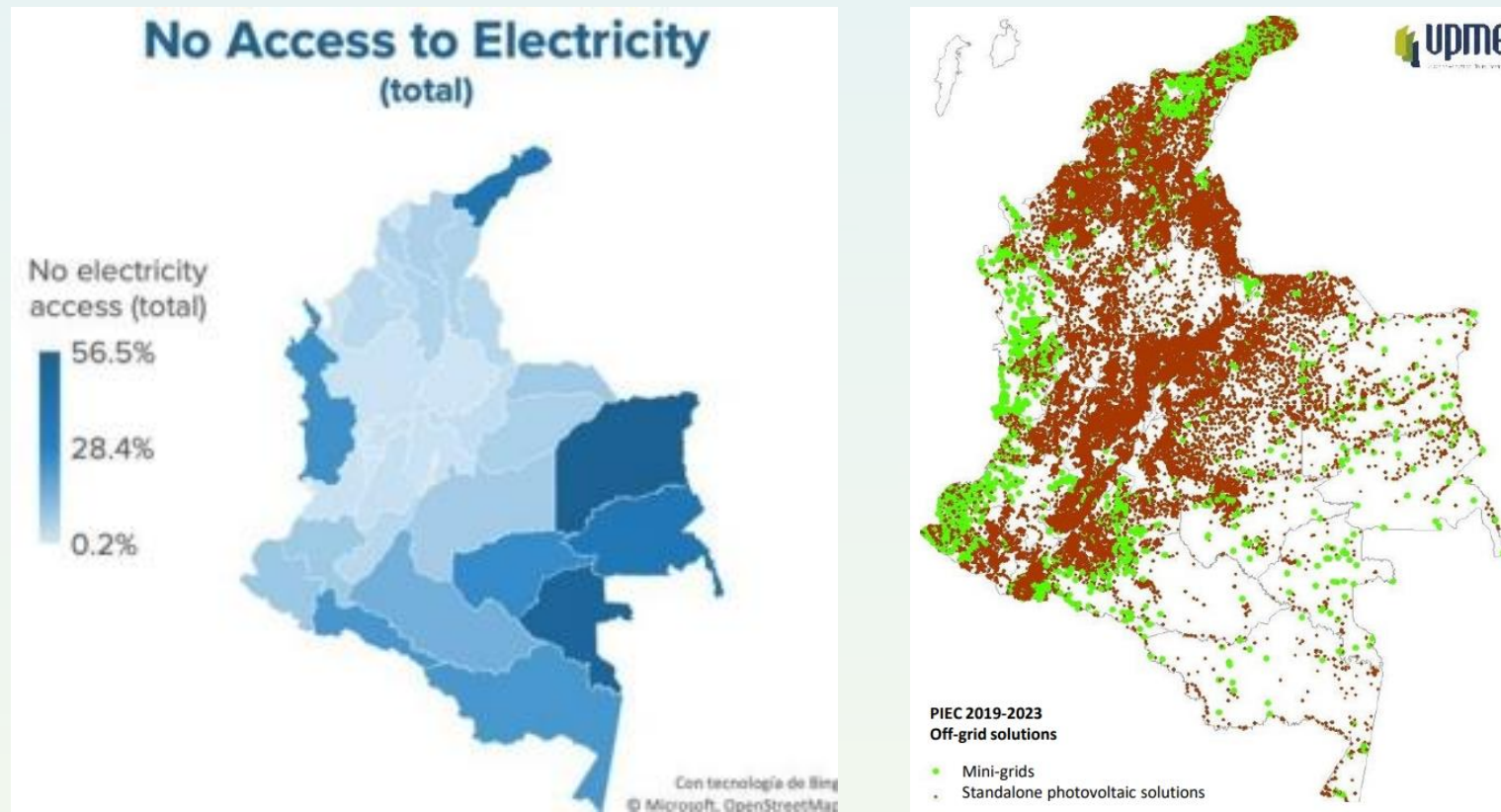


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Colombia is keen to supplement its national energy grid with so-called „microgrids“ which can serve non-interconnected areas of the country with renewable energy, fostering a socially inclusive transition process.

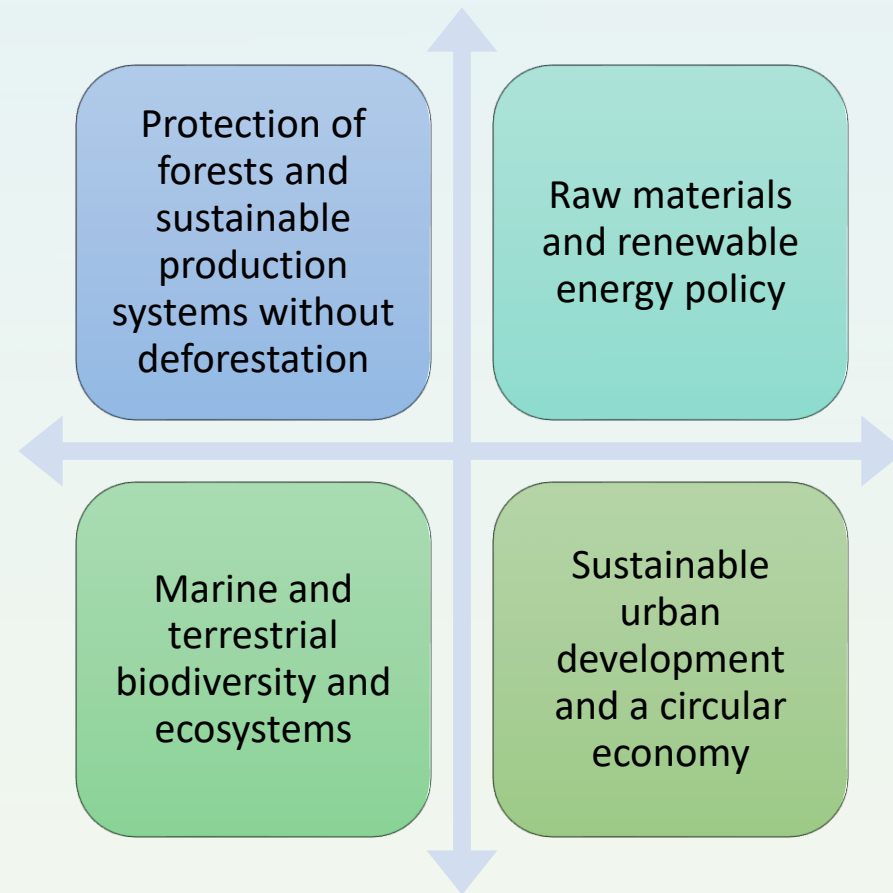
Percentage of Colombians with access to electricity (2020) & distribution of off-grid solutions (2023)



Source: LSE, Colombia's Just Energy Transition – A People-Centered Cost Benefit Analysis & OECD (2023), Distributed Renewable Energy in Colombia

Colombian-German Cooperation

Colombia and Germany are close strategic partners in the area of energy policy, which is emphasized by their **Partnership for the Climate and Just Energy Transition of 2023**. The countries collaborate in various policy areas.



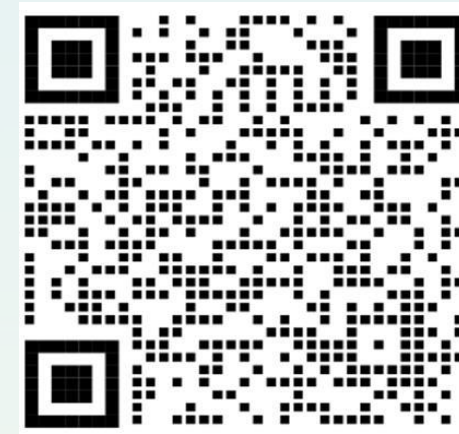
Source: International Power to X Hub (2023), [Colombia advances as a strategic partner of Germany](#)


Colombian-German Cooperation

The Colombian Ministry of Mines and Energy cooperated with GIZ to create a digital hub that contains all of Colombia's efforts and innovations in the H2 sector – the website **Ecosistema H2 Colombia**:



➡ www.minenergia.gov.co/es/ecosistema-hidrogeno-colombia

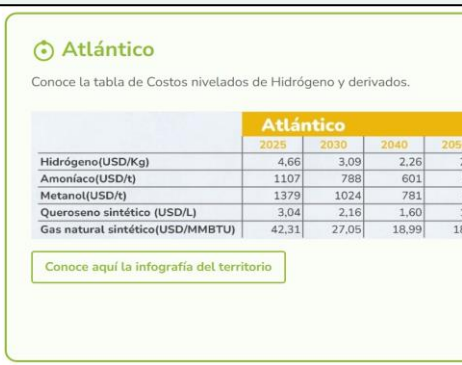




Ecosistema H₂ Colombia

Aquí encontrarás todo lo que necesitas saber sobre el desarrollo del hidrógeno en Colombia

- Atlántico
- Bolívar
- Valle del Cauca
- La Guajira
- Antioquia
- Caldas



Atlántico

Conoce la tabla de Costos nivelados de Hidrógeno y derivados.

	2025	2030	2040	2050
Hidrógeno(USD/Kg)	4,66	3,09	2,26	2,26
Amoníaco(USD/t)	1107	788	601	601
Metanol(USD/t)	1379	1024	781	781
Queroseno sintético (USD/L)	3,04	2,16	1,60	1,60
Gas natural sintético(USD/MMBTU)	42,31	27,05	18,99	18,99

Conoce aquí la infografía del territorio



¿Quieres ser parte de la Transición del Hidrógeno en Colombia?

Energía del Cambio

Source: Ecosistema H2 Colombia – [Proyectos](#) / [Mapa de Hidrógeno](#) / [Inicio](#)



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Thank you for your visit!

