Event Brief

1st GERMANY–LATAM
RENEWABLES & HYDROGEN DAY

Flagship Projects in Renewables & Green Hydrogen: The Private Sector Driving Bi-Regional Energy Transformation

1. Introduction

Latin America is a key market for renewables and hydrogen, with abundant natural resources and growing energy demand. In 2023, the region generated 64% of its electricity from clean sources, surpassing the global average of 39%. Wind and solar power accounted for 14% of the electricity mix, with countries like Uruguay, Chile, and Brazil leading in renewable energy production.

As global hydrogen demand is projected to rise significantly by 2030 and 2050, Latin America has the potential to become a major producer of low-cost, low-emissions hydrogen. In 2022, the region consumed 4 million tons of hydrogen, mainly produced from natural gas, contributing to high carbon emissions. However, with its vast renewable energy resources, Latin America can transition to low-emissions hydrogen production, supporting global climate goals.

The private sector plays a pivotal role in driving change and innovation in the renewable energy and green hydrogen sectors across Latin America. In countries like Brazil, Chile, and Argentina, private investment and technological leadership are accelerating the development of flagship projects that are setting new benchmarks for sustainability and scalability. These initiatives not only support national decarbonization goals but also position the region as a strategic player in the global energy transition. By bringing capital, expertise, and agility to the table, private actors are transforming ambitious ideas into operational realities—pushing the boundaries of what's possible in clean energy and green hydrogen production.

The region's transition to hydrogen will boost industrial competitiveness; create jobs, and present new trade opportunities, positioning Latin America as key player in the global hydrogen economy.

2. Renewables and Hydrogen

2.1 Brazil

Brazil is a major energy producer with vast renewable resources, making it a key player in the global energy transition. Nearly 45% of its primary energy demand is met by renewables, giving it one of the world's cleanest energy matrices. Hydropower remains the dominant source, supplying 60-70% of electricity, but its expansion faces environmental and geographical constraints. Solar energy has experienced rapid growth, reaching 30 GW by 2023, driven by strong investments in large-scale and rooftop installations. Wind power, particularly in the northeast, has surpassed 20 GW and continues to expand.

Brazil is also emerging as a key player in the hydrogen economy, attracting significant international investment. Leveraging its strong renewable energy base, the country aims to become a major producer of green hydrogen. Key hubs include Pecém in Ceará, Açu Port in Rio de Janeiro, and the northeast region, where abundant solar and wind resources provide ideal conditions for large-scale hydrogen production.

Brazil's National Hydrogen Program (PNH2) aims to position the country as a leader in the global hydrogen economy. With nearly 90% of electricity generated from renewable sources, Brazil seeks to leverage its resources to produce low-carbon hydrogen, supporting decarbonization in industries like transportation and manufacturing.

Brazil and Germany have a strong energy partnership focused on expanding renewables, improving efficiency, and developing green hydrogen, which is the alliance Brazilian-German Energy Partnership. In March 2023, the energy ministers of both countries reaffirmed this collaboration, emphasizing decentralized power generation, digitalization, and hydrogen production to support a sustainable energy transition.

2.2 Chile

Chile is a global leader in renewable energy, leveraging its vast natural resources to transition toward a sustainable energy system. The country has one of the highest solar radiation levels in the world in the Atacama Desert and strong, consistent winds in Patagonia, making it ideal for large-scale solar and wind power generation. Over the past decade, Chile has significantly increased its renewable energy capacity, with wind and solar now accounting for over 35% of its

electricity generation. The country has committed to phasing out coal by 2040 and aims for 80% of its electricity to come from renewables by 2030.

In 2020, Chile launched its National Green Hydrogen Strategy, aiming to position the country as a top global exporter of green hydrogen by 2040. Key projects include hydrogen production hubs in the Antofagasta and Magallanes regions, where renewable energy potential is highest.

The government has introduced incentives to attract private investment, including a $50 million fund to support early-stage hydrogen projects and regulatory frameworks to ensure safety and environmental sustainability. By 2050, Chile expects to produce up to 25 GW of electrolysis capacity and generate $2.5 billion annually from hydrogen exports. The sector is projected to create around 100,000 jobs and contribute significantly to global decarbonization efforts.

Chile and Germany collaborate on renewable energy through the Energy Partnership Chile-Alemania, established in 2019 to expand renewables and enhance energy efficiency. A key focus is green hydrogen, with a joint task force launched in 2021 and an agreement designating the Port of Hamburg as a gateway for Chilean hydrogen exports, supporting Chile's goal of becoming a top renewable energy exporter by 2030.

2.3 Argentina

Argentina has vast renewable energy potential, leveraging its rich natural resources to diversify its energy matrix and reduce carbon emissions. The country benefits from high quality wind resources in Patagonia, strong solar radiation in the northwest and significant hydro and biomass potential. Over the past decade, Argentina has expanded its renewable energy sector, with wind and solar now accounting for over 15% of its electricity generation.

Argentina also recognizes hydrogen as a strategic component of its energy transition. With vast wind and solar resources, the country has the potential to produce competitive green hydrogen. In 2023, the government introduced the National Hydrogen Strategy (ENH) and a proposed Hydrogen Promotion Law to provide regulatory stability and fiscal incentives, aiming to attract both domestic and foreign investment.

Argentina is focusing on infrastructure development, including electrolysis capacity, storage, and transportation networks. Key hydrogen hubs are planned in Patagonia, Bahía Blanca, and Tierra

del Fuego, regions with strong energy resources and access to deep-water ports. By 2050, Argentina aims to produce 5 million tons of low-emission hydrogen annually, with 80% destined for export, and the sector is expected to generate over 80,000 jobs and attract billions in investment.

Argentina and Germany initiated a bilateral climate and energy dialogue in 2023 to enhance cooperation in areas such as hydrogen production, renewable energy expansion, and energy efficiency. A key project is the "Gaucho Wind to Hydrogen & Green Ammonia" initiative, supported by Germany's H2Uppp program, aiming to produce green ammonia for export using 3 GW of electrolyzes powered by a 4.2 GW wind farm.