

## Uruguay system renewables

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Is Uruguay a repeatable framework of energy sovereignty for developing countries?

Ramón Mendéz Galain believes so. Uruguay's former national director of energy in the Ministry of Industry, Energy and Mining, who was the impetus for the country's shift away from dirty fuels, has been promoting the country's success as a repeatable framework of energy sovereignty for developing countries.

#### Why did Uruguay change its energy policy?

This volatility strained Uruguay's economy,forcing then-President Tabaré Vázquez to import energy at premium prices due to increasing household energy demands. This challenge led to a revolutionary shift in Uruguay's energy policy under the guidance of physicist Ramón Méndez Galain,who transformed the nation's energy grid.

#### Why did Uruguay rethink its energy strategy?

In the 2000s, facing rising fossil fuel prices and energy demand, Uruguay was compelled to reconsider its energy strategy. Importing oil exposed the country to volatile global markets, as seen in the early 2000s when oil prices soared from \$20 to a record \$145 per barrel.

#### Should Uruguay switch to green electricity?

Uruguay, one of South America's smallest countries, is attracting outsized attention over its transition to green electricity. It didn't happen simply by building a bunch of wind and solar farms, the architect of the strategy said, but by rethinking the entire energy system. And, he said, other countries could do that too.

#### Will Uruguay become a leading country in the development of E-Fuels?

Due to its highly decarbonized energy sector with strong wind and solar capacity, Uruguay is expected to become a leading country in the region in the development of e-fuels, or synthetic fuels that are produced using renewable energy.

How can Uruguay use nontraditional renewables without battery storage?

By balancing complementary resourcesin particular locations and at particular times of day, Uruguay has been able to incorporate large amounts of nontraditional renewables without any battery storage.

In 2005, Uruguay initiated a dramatic shift in its energy strategy, moving from petroleum-based electricity generation to renewable sources. Even with increased fossil generation in 2022 due to severe drought, Uruguay is one of the leading countries in renewable energy in the world.

> Integration of Renewable Energy into Present and Future Energy Systems; Renewable Energy Sources and Climate Change Mitigation. ... In many countries, sufficient RE resources are available for system integration to meet a major ...



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While power systems have been designed to handle the variable nature of loads, the additional supply-side variability and uncertainty can pose new challenges ... to help integrate higher ...

Uruguay has already a high penetration of Variable Renewable Energy (VRE) and a renewable energy share close to 100%. Uruguay's power system has a high interconnection capacity but the lack of an active cross-border market results in high shares of VRE curtailment.

Uruguay"s success story is not just about energy transformation but also about changing the societal narrative around renewables. Initially, renewables faced skepticism due to misconceptions about cost, reliability, and employment impact. Addressing these concerns was key to gaining public support.

renewables. The plan sets a target of 50% primary energy from renewable energy sources by 2015. This includes renewable energy for electricity generation, industrial and domestic heat, and transport. The plan began its inception in 2005, following years of underinvestment1 and a change of government.

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configuration of power systems, enabling the integration of larger shares of renewables. While current efforts



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and a growing number of examples in the region indicate a clear "yes" that 100% renewable-powered systems

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