

# Brazil's low-carbon energy storage system





## Overview

---

Here an energy system model is used to assess the BECCS decarbonization potential in Brazil, considering uncertainty in low-carbon biomass resources, and storage potential, injection rates and costs o.

Does a low-carbon Brazilian energy system have a potential for BECCS?

This methodological framework allows to assess the potential for BECCS within a low-carbon Brazilian energy system for 2050, including its deployment pathways and its impact on the energy system (total system costs and energy mix), considering uncertainty in biomass sources, CO<sub>2</sub> transport options, injection rates and storage potential of CO<sub>2</sub>.

Does Brazil have a decarbonization potential?

Here an energy system model is used to assess the BECCS decarbonization potential in Brazil, considering uncertainty in low-carbon biomass resources, and storage potential, injection rates and costs of CO<sub>2</sub> storage, assessed in eight scenarios.

How much CO<sub>2</sub> is stored in Brazil?

The total amount of stored CO<sub>2</sub> between 2010 and 2050 ranges between 2.84–2.95 Gt CO<sub>2</sub>, which is approximately 18% of the entire Brazilian carbon budget for that period (see Section 2.1 for details on the carbon budget). The stored CO<sub>2</sub> originates from biomass in all scenarios. When comparing the six scenarios, two things stand out.

Is BECCS a cost-competitive option to decarbonize the Brazilian energy system?

This shows that BECCS is a cost-competitive option to decarbonize the Brazilian energy system, even under pessimistic estimates of CO<sub>2</sub> storage potential and costs, and low biomass availability. The cheapest sink locations are selected, in the high development scenario. When CCS development is low, injection rates are the limiting factor.

Does Brazil have a good energy transition?



On the one hand, Brazil's energy transition is well under way. The country has the cleanest electricity generation among Group of 20 members and has seen a significant increase in wind and solar generation in the past few years. Energy storage is expected to take off soon.

Are CCS and biomass a viable option for a low-carbon energy system?

This shows that both CCS and biomass are key options that can ensure the transition towards a low-carbon energy system in Brazil, while minimizing the total system costs. However, the development of both factors is very uncertain and therefore it is important to explore several potential development pathways. 2.4.1. Biomass availability



## Brazil s low-carbon energy storage system

---



### Brazil: Hydrogen, Energy Storage and Smart Grids , Carbon ...

CLT delivered a study mapping global low carbon hydrogen strategies and roadmaps, projects and technologies, identifying how these supported the successful development of low carbon ...

[Product Information](#)

### Lap et al. (2023): BECCS as climate mitigation option in a Brazilian

In this study an energy system model is used to assess the BECCS decarbonization potential in Brazil, considering uncertainty in low-carbon biomass resources, ...

[Product Information](#)



### [Lap et al. \(2023\): BECCS as climate mitigation option in a ...](#)

In this study an energy system model is used to assess the BECCS decarbonization potential in Brazil, considering uncertainty in low-carbon biomass resources, ...

[Product Information](#)

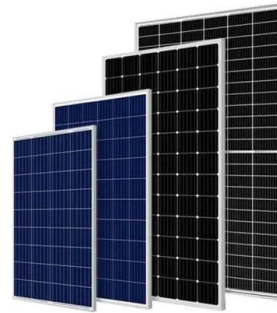


## Brazil Transition Factbook

Introduction The spotlight of the energy transition is on Brazil. As this year's G-20 President and the host of COP30 in 2025, Brazil is embracing a historic opportunity to lead the global ...



## [Product Information](#)



## **Brazil Transition Factbook 2025: The Numbers Behind the Ambition**

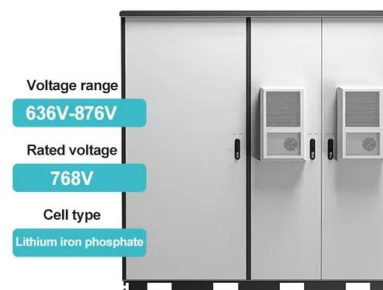
Energy storage is expected to take off soon. And after reaching six figures for the first time in 2024, electric vehicle sales are on track for another big bump, as Chinese ...

## [Product Information](#)

## **BECCS as climate mitigation option in a Brazilian low carbon energy**

Here an energy system model is used to assess the BECCS decarbonization potential in Brazil, considering uncertainty in low-carbon biomass resources, and storage ...

## [Product Information](#)



## [Brazil Energy Storage Regulatory Framework](#)

The document highlights challenges such as the high upfront cost of storage technologies and prioritizes policies to integrate storage with renewables, aiming to reduce ...

## [Product Information](#)



## Researchers seek to make energy and carbon storage feasible ...

Sustainable Storage with Compressed Air (Caes), a pioneering proposal in Brazil, aims to manage load fluctuations in the grid and support the integration of renewable energies.

[Product Information](#)

18650<sup>3.7V</sup>  
RECHARGEABLE BATTERY Li-ion  
**2000mAh**



## China Energy Transition Review 2025

In buildings, roughly 12 TWh of electricity replaced fossil fuels, primarily by substituting loose coal heating in northern China with low-carbon technologies such as heat pumps and geothermal ...

[Product Information](#)

## Brazil: Hydrogen, Energy Storage and Smart Grids , Carbon ...

Solution: CLT delivered a study mapping global low carbon hydrogen strategies and roadmaps, projects and technologies, identifying how these supported the successful development of low ...

[Product Information](#)



## Unleashing Brazil's Low Carbon Hydrogen Potential o CisCos

Unleashing Brazil's low carbon hydrogen potential - Unleashing Brazil's low carbon hydrogen potential is a crucial step towards a sustainable future. Brazil boasts significant ...

[Product Information](#)



## How likely is Brazil to achieve its NDC commitments in the energy

This paper offers perspectives on the development of low-carbon energy technology in Brazil, pinpointing changes that have occurred since our former publication in 2011.

[Product Information](#)



## Envision Energy to Build Net Zero Industrial Park in Brazil ...

As Brazil accelerates its transition toward a hydrogen-based economy, China's Envision Energy plans to develop a Net Zero industrial park in the country, anchored by the ...

[Product Information](#)

## [Top 100 Energy Storage Companies in Brazil \(2025\) . ensun](#)

Top Energy Storage Companies in Brazil The B2B platform for the best purchasing decision. Identify and compare relevant B2B manufacturers, suppliers and retailers Supplier discovery ...

[Product Information](#)



## How likely is Brazil to achieve its NDC commitments in the energy

This paper offers perspectives on the development of low-carbon energy technology in Brazil, pinpointing changes that have occurred since our former publication in 2011. It takes ...

[Product Information](#)



## Energy Storage and the Strategic Role of Hydropower in the ...

In addition to providing clean, low-carbon energy, hydropower reservoirs account for more than 90% of Brazil's total water storage capacity, according to data from the National ...

[Product Information](#)



## New Energy Storage Projects in Brazil: Powering the Future with

With abundant sunlight, ambitious climate goals, and a hunger for grid stability, Brazil's renewable energy sector is dancing to a new rhythm. In 2025 alone, projects like the ...

[Product Information](#)

## Contact Us

---

For catalog requests, pricing, or partnerships, please visit:  
<https://www.les-jardins-de-wasquehal.fr>