



Opportunities for a Low Carbon Hydrogen Economy in Brazil

Hydrogen and Energy Transition: Opportunities for Brazil

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Hydrogen domestic market & market potential in Brazil



Existing and new markets

By 2030, 65% of carbon emissions in the Brazilian Energy Sector (484 MtCO₂e) will be in Industry and Transport (EPE - PDE 2030)



Fertilizers



Refinery



Methanol



Mining & Metallurgy



Food & Others



Energy Storage



FC Forklift



Transport



SFAs



Biorefinery

Local & global players / suppliers



Government support to Hydrogen R&DI is not new...



Long-term commitment to hydrogen brought results

Programs, Plans, White Papers, Resolutions

MCTI 2002 MME 2005 MCTI 2010 MCTI 2018



MME-EPE
2020



EPE 2021



CNPE nº 2
2021



CNPE nº 6
2021



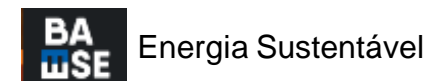
Capacity building



Public and public oriented investments
R&DI reached R\$ 200 millions – 1% of
energy R&DI (1999-2018)

CNPE Resolution nº 2, Feb, 10, 2021
Guidelines for energy R&DI public & public
oriented funds to allocate resources in
priority areas, which includes **hydrogen**.

Start-ups



Brazil's National Hydrogen Program – PNH₂



CNPE Resolution nº 6, April, 20, 2021

MME must present proposal for Directives on the **National Hydrogen Program**, in collaboration with MCTI, MDR and support of EPE.

PNH₂ (August, 2021)

Designed to mobilize public and private sectors, as well as academia, together with international cooperation, to accelerate the development of a comprehensive and competitive hydrogen market.

Potential to be a key player in hydrogen market



- ✓ Huge **natural endowment** for hydrogen production
- ✓ **Government commitment** to hydrogen
- ✓ Sound **regulation & business environment** in energy sector
- ✓ Fair **human capital, technological skills & logistics** to key international markets
- ✓ Policies to get benefits from **national competitive advantages**, while **creates new ones**
 - ✓ **Renewables are blue-chip**, but natural gas and nuclear also matters (zero-carbon + CCUS)
- ✓ **Technological neutrality** rather than lock-in
- ✓ **Existing Market** and **market potential**
- ✓ Wide **international partnerships**

Electricity supply in 2020: **645.9 TWh**



Brazilian Aquarelle



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Thank you