



Empresa de Pesquisa Energética

Brazil: Tracking Clean Energy Innovation

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President | EPE

September 2022

Ministério de
Minas e Energia



May
2018



MISSION INNOVATION
Accelerating the Clean Energy Revolution



Enhancing Data Collection on Government and Private Sector Spending for Clean Energy Research and Innovation

Workshop organised in the context of tracking progress in Mission Innovation

22 May 2018, Malmö, Sweden

DRAFT PROGRAMME

OPENING 09:00-09:40

- **Mission Innovation (MI) Secretariat, Sarah Webb** - Welcome and introduction to the MI tracking progress workstream
- **International Energy Agency (IEA), Simon Bennett** – Government spending on clean energy RD&D
- **European Commission-Joint Research Centre (JRC), Alik Georgakaki** – Private sector spending on clean energy RD&D
- **Tufts University (US), Kelly Sims Gallagher** - Approaches, challenges and priorities for data collection on public and private investment in innovation

Aug
2018



IEA-Brazil energy R&D policy peer review and dialogue

Options for cooperation with Brazil under the IEA Clean Energy Transitions Programme

Background: the IEA, its Clean Energy Transitions Programme and Association with Brazil

The International Energy Agency (IEA), as the leading provider of energy data, rigorous analysis, and real-world solutions for energy transitions around the world, has undertaken a variety of efforts over its 40-year history to promote energy innovation. These extensive efforts include tracking public and private global clean energy research and development (R&D) spending trends; undertaking 32 Technology Roadmaps; capturing investment trends through the World Energy Investment report; coordinating 38 Technology Collaboration Programmes (TCPs) encompassing over 6,000 global experts; utilising the World Energy Outlook and Energy Technology Perspectives analytical tools to explore the importance of innovation to achieve long-term goals.

The collaboration between the IEA and Brazil has gathered momentum since the country joined the IEA as an Association country in late 2017, reflecting Brazil's important contributions to the global energy dialogue and its leading role in several areas of technological innovation. The current Joint

Tracking energy R&D spending in Brazil

- Phase I (August 2018 to October 2018): Presentation of IEA methodologies and experiences with tracking energy RD&D budgets via webinar
- Phase II (November 2018 to June 2019): IEA support to the mapping of the Brazilian energy R&D funding system

Transparency in the planning process



- Stakeholders were engaged and webinar series held in Oct 2018 for better understanding of each other's needs, resources, goals and capabilities.
- As a result, we realized that...



- We knew we had the data, but it was fragmented and lacking common structure
- Policy goal of improving governance of energy policies / R&D and innovation policies
- Wish to benchmark and create evidence for better decision making in the allocation of resources



- Had experience in managing and aggregating data from various countries
- Already had methodology and data architecture, allowing for international benchmarking
- Wanted to make its reports even more relevant by adding Brazil to its database and analysis

Funding and international collaboration



2018



GREAT *for* **PARTNERSHIP**
BRITAIN & NORTHERN IRELAND

2019/2020



2020/2021



2019/2020



IEA / Brazil collaboration **laid the foundation** for broader efforts to **institutionalize** R&D tracking process and to mobilize a wider community to contribute but also to use the data and indicators to **push policy forward**

EBP 1.0: Multi-stakeholder framework and engagement



Energy Big Push Advisory Committee

International
Cooperation

Executive Committee

Ministry of Mines and
Energy

Ministry of Science,
Technology and Innovation

Ministry of Foreign Affairs



Energy Planning
and Statistics



Climate change and
sustainable
development agenda



Big Push for
Sustainability



Clean Energy
Transitions
Program

Partner Institutions



EBP: project structure and communication



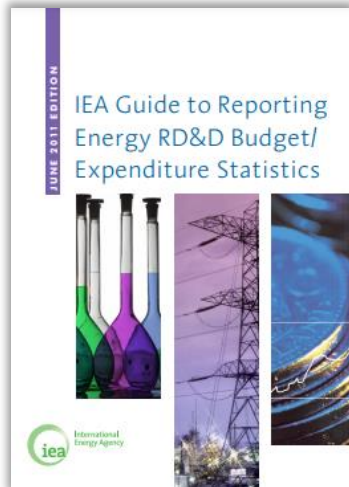
23 Oct 2020
15:00—17:00

Energy Big Push: Accelerating Clean
Energy Innovation in Brazil



IEA helped Brazil gain confidence in the process

Adoption of IEA guidelines for data classification



Energy Efficiency	• Industry, residential, transport, ...
Fossil Fuels	• Oil, gas, coal, CCS, ...
Renewable Energy	• Solar, wind, biofuels, ...
Nuclear	• Fission, fusion
Hydrogen & Fuel Cells	• Hydrogen, fuel cells
Other Power and Storage Technologies	• Power generation, T&D, storage
Other Cross-Cutting Technologies	• Cross-cutting and others, basic research

Major results

- Unprecedented data series on RD&D public and publicly-oriented investments in Brazil (2013-2018)
- Creation of a multi-stakeholder governance process to ensure continuity
- Recommendations for improvement

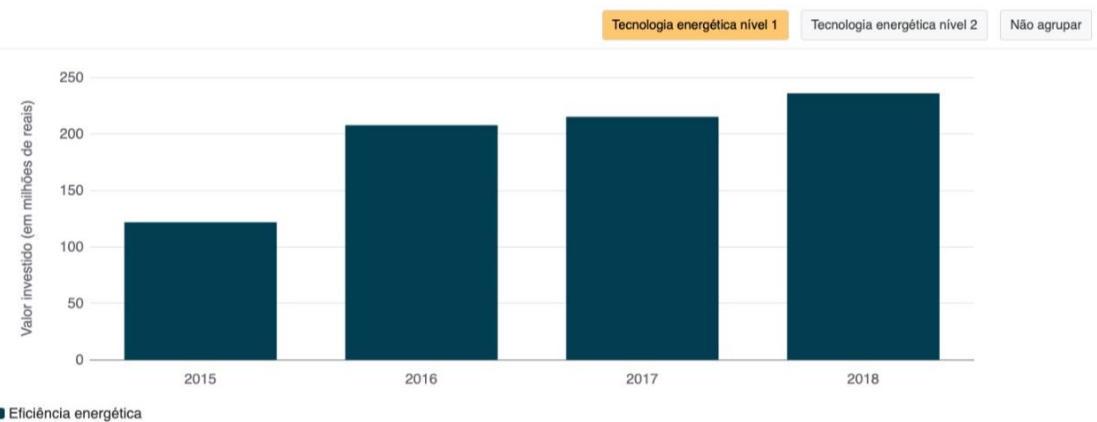
Inova-e platform now hosting the data



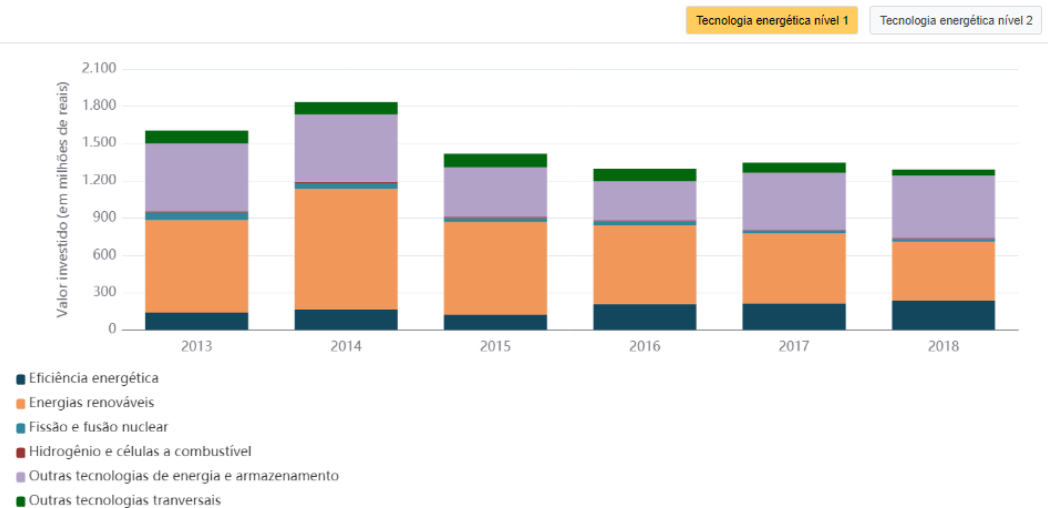
Clean Energy Technologies 2018



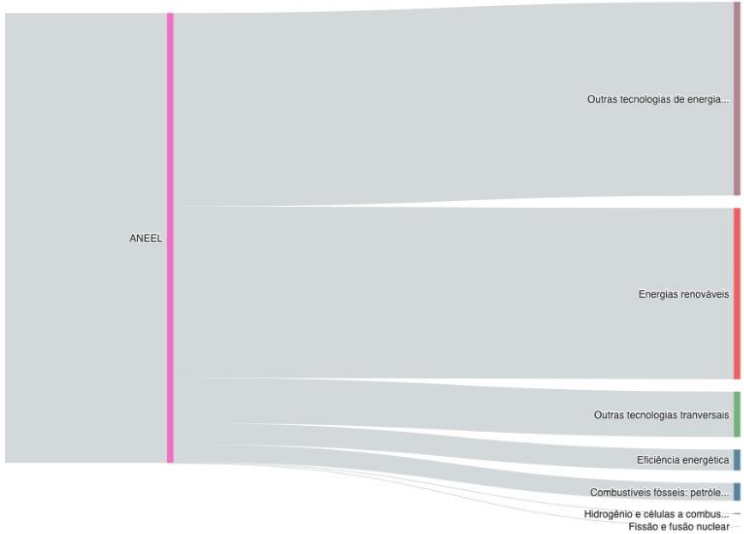
Energy Efficiency: digit 1 and digit 2



Clean Energy Technologies from 2013 to 2018



Energy Technology Portfolio by Institution



Closing remarks about the impact of the collaboration



- RD&D investment data from Brazil incorporated to IEA reports and analysis (Energy Technology RD&D Budgets: Overview). First association country to do that.
 - Inova-e Platform launched in 2021 providing easy access to data and indicators.
 - EBP project was main reference for the Ministry of Mines and Energy to propose to the Energy Policy Council the establishment of new priority areas for publicly-oriented RD&D investment, focused on clean energy solutions:
 - CNPE Resolution #2/2021 → Hydrogen, storage, critical minerals, biofuels, nuclear, etc.
 - As a result of Resolution #2/2021:
 - ANP set a fast-track process for oil & gas companies willing to prioritize RD&D in clean energies
 - ANEEL has strategic funding calls under preparation (e.g. hydrogen)
 - National Hydrogen Program and the Fuel of the Future Program, both have RD&D as one of their 6 pillars
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- **We appreciate the funding for IEA-Brazil collaboration and we look forward to continue collaboration on this topic**
 - Successful collaboration also on carbon markets, energy efficiency, power market reform, hydrogen and others.

- **Inova-e Platform (dashboard):** <http://shinyepe.brazilsouth.cloudapp.azure.com/inova-e-eng/dashboard.html>
- **Inova-e Cast** (5-episode podcast series launched at Mission Innovation in 2021, describing the collaboration work for strengthening clean energy RD&D investments in Brazil, including speakers from IEA):
<https://open.spotify.com/episode/687soNGrBq5VoW9QDbXN9w?si=5hlKvLIfS9uGIV1jryPipA> (first episode)
- **[Report] Overview of energy innovation investments in Brazil – Data for an Energy Big Push:**
https://www.cgee.org.br/documents/10195/7296981/CGEE_EBP_S2000342_en.pdf
- **[Report] A Big Push for Sustainability in Brazil’s Energy sector – Input and evidence for policy coordination:** https://www.cgee.org.br/documents/10195/7296981/CGEE_EBP_S2000320_en.pdf
- **[Report] Performance indicators associated with low-carbon energy technologies in Brazil – Evidence for an energy big push:**
https://www.cgee.org.br/documents/10195/7296981/CGEE_EBP_S2000344_en.pdf
- **[Report] Incentive mechanisms for clean energy innovation in Brazil – Paths for an energy big push:**
https://www.cgee.org.br/documents/10195/7296981/CGEE_EBP_S2000346_en.pdf
- **[Webinar] Energy Big Push - Accelerating Clean Energy Innovation in Brazil:**
<https://youtu.be/USy9qARTC3M>

Thank you!



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