Cooperation with emerging economies:

Opportunities, challenges and lessons learned

Agnes M. A. da Costa

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ABOUT BRAZIL
ENERGY MATRIX AND ELECTRICITY MATRIX

Energy Matrix - Brazil 2018

- Oil & Derivatives: 34.4%
- Biomass: 25.7%
- Natural Gas: 12.5%
- Hydro: 12.6%
- Coal: 5.8%
- Nuclear: 1.4%
- Solar, Wind & Others: 7.5%

Domestic Energy Supply Total: 288.4 Mtoe
Renewables: 46.7%

Electricity Matrix - Brazil 2018

- Hydro: 66.6%
- Oil & Derivatives: 9.6%
- Nuclear: 2.5%
- Coal: 2.2%
- Natural Gas: 8.6%
- Solar, Wind & Others: 13.1%

Domestic Electricity Supply Total: 636.4 TWh
Renewables: 83.3%

¹ Others includes Renewables and Non-Renewables.
TRANSMISSION GRID AND EXPANSION CHALLENGE
GOVERNANCE

MME’s Competences

Planning and execution of the mines and energy sectors policies

Fostering sustainability and economic, social and environmental development

Incentive to the development and use of new technologies

Search for the structural and conjunctural balance of the system and of supply and demand of energy resources
WORKING GROUP ON THE MODERNIZATION OF THE ELECTRICITY SUPPLY INDUSTRY

Thematic Groups:

1st Wave
- Price Formation
- Supply Criteria
- Sustainability of Distribution
- Sustainability of Transmission
- Procurement Processes
- Simplification of Processes
- Adoption of New Technologies

2nd Wave
- Energy and Capacity Markets
- Energy Reallocation Mechanism (MRE)

3rd Wave
- Market Opening
- Cost and Risk Allocation
- Subsidies Rationalization
- Governance
- Auction Design

OTHER WORKSHOPS*

National Workshops on Supply Criteria, on Price Formation and on the Procurement of capacity

International Workshop with international experts about:
1. The future of Distribution
2. Procurement of capacity
3. Price Formation

* foreseen
NEW GAS MARKET - POLICY

Brazilian Government Program to build an open, dynamic and competitive natural gas market

Expected Results

- Monetization of the natural gas from pre-salt, Sergipe-Alagoas and other basins
- Attract midstream investments
- Make feasible natural gas fired thermal power plants, reducing energy prices
- Foster industrial activity

Axis

Development of competition

Integration of the gas to power and to industrial markets

Conciliate local* and federal regulations (27 States)*

Reduce tax barriers
RENOVABIO

Brazilian Government Program to expand the production of biofuels in Brazil

• No subsidies

• Biofuel Decarbonisation Credit (CBIO)
ENERGY EFFICIENCY – MAIN PROGRAMS AND NORMS

Brazilian Label Program
1984: applied to manufacturers and suppliers

Energy Efficiency Program
2000: applied to Distribution Companies

PROCEL
1985: Electricity Conservation National Program

Law 10.295
2001: Energy Efficiency Law

CONPET
1991: National Program for the rational Use of Oil and Gas

PNEf
Energy efficiency national Plan
2011: Directives
Brazil and the IEA – within TCPs

- Hydropower TCP – MME, Cepel
- Bioenergy TCP – MME, Itaipu
- Greenhouse Gas R&D (GHG TCP) - Petrobras
- Gas and Oil Technology TCP (GOT TCP) – FINEP
- Concentrated Solar Power (PACES TCP) – MME, Cepel

Effect of climate change on reservoirs + resilience

CIBio – energy from biogas

CCUS in O&G

New technologies for O&G
Brazil and the IEA – within CETP

- Big Push for R&D
- Renewables Integration, Power System Flexibility, Energy Transitions Dialogues
- Biofuture Platform
- Energy Efficiency for Emerging Economies – E4

Development of database about R&D investments
New system requirements
Dissemination of technical info, visibility
EE indicators
Agnes M. da Costa
Head of the Regulation Advisory Office at the Ministry of Mines and Energy - Brazil
agnes.costa@mme.gov.br