

VI Reunión Plenaria del Foro Técnico Regional de Planificadores de Energía – FOREPLEN

Session 4: Analysis and mapping of best practices in regional energy planning

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December 2022









Federal institution, part of the structure of the Ministry of Mines and Energy



We develop energy planning studies and statistics to support formulation, implementation and assessment of the national energy policy



Member of the National Council for Energy Policy (CNPE)

Portfolio of services, studies and publications





Integrated perspective of the energy sector, including oil, natural gas, biofuels, electricity, energy efficiency, environment, hydrogen...

Examples of energy scenarios...



- Global scenarios to give a broad perspective of challenges and opportunities
- National and regional scenarios for better strategy customization and analysis for integration to global value chains



Energy Scenarios and Plans developed by EPE in Brazil





10-Year Energy Plans

- Annual Editions
- Projected emissions
- Under guidelines of the Ministry of Mines and Energy

- Reference Scenario
- Two additional Scenarios of economic and energy demand growth (Upper and Lower)
- What-if sensitivity analysis

<image><text><image>

National Energy Plan 2050

- +30-year perspective
- New editions every 5 Years
- Under guidelines of the Ministry of Mines and Energy

- No Reference Scenario
- Two Scenarios: "Growth Challenge" and "Stagnation"
- +60 sensitivity analysis for power generation mix





Share of Renewables in the Electricity Mix



PNE 2050 Dashboard





10-Year Energy Plan (2031 Edition)





In the decade, the electricity load in the Reference Scenario grows by 26.6 average-GW, with average annual increases of 2.5 average-GW in the first five-year period and 2.8 average-GW in the second five-year period.

10-Year Energy Plan (2032 Edition): DG forecast



Different regulatory scenarios 45,2 40 38,6 37,1 35,0 31,7 29;2 Potência [GW] 10 0 2022 2024 2026 2032 2016 2020 2028 2030

Projected Installed Capacity of Distributed Generation (GW)

Nota: Data base da projeção: fevereiro de 2022

 ⊷
 Referência
 ⊷
 TE + 100% Custos
 ⊷
 TE + 60% Custos

 Cenário
 ⊷
 TE + 40% Custos
 ∞
 TE + 20% Custos
 ∞
 TE + 10% Custos

 ⊷
 TE + 0% Custos
 ∞
 TE + 0% Custos
 ∞
 TE + 10% Custos

Summary of results

Different regulatory scenarios

Regulatory scenario	Adopters (2032) MM	Capacity (2032) GW	Generation (2032) GW average	Investment (2022 a 2032) R\$ billion
TE + 100% C	5,8	45,2	7,5	148,8
TE + 60% C	5,0	38,6	6,3	121,5
Referência	4,8	37,1	6,0	115,4
TE + 40% C	4,6	35,0	5,6	106,8
TE + 20% C	4,2	31,7	5,0	93,5
TE + 10% C	4,0	30,3	4,8	88,3
TE + 0% C	3,8	29,2	4,6	83,9



Access the methodology used in the projections

DG Dashboard



Interactive tool for detailed information about EPE's scenarios for DG



https://www.epe.gov.br/pt/publicacoes-dados-abertos/publicacoes/painel-de-dados-de-micro-e-minigeracao-distribuida-pdgd-



Some examples of the impact of energy planning

Renewable electricity and electrification alone won't be enough... (epe













IEA NZ 2050

Annual CO2 emissions savings in the net zero pathway, 2030 and 2050, relative to 2020



Decarbonization scenarios identify the need to develop advanced biofuels, low carbon hydrogen, carbon capture, modular nuclear reactors, digitization, etc.











Energy Transition Program EPE-IDB-CEBRI





Siemens Energy 6 uma marca licenciada pela Siem

Net Zero Scenarios for Brazil

- 3 main net zero Scenarios, to help cover gaps of the PNE2050 and serve as step towards next PNE
- Non-official scenarios (no guidelines from the Ministry of Mines and Energy)
- Private sector engagement
- Expert panels to support scenario building
- Outsourced integrated modelling
- Modelling covering land use, agriculture etc, but focus of analysis is Energy



Thank you!

