

Senior Official's Meeting Clean Energy Ministerial

Accelerating the Clean Energy Transition: Insights from the Long-Term Energy Scenario (LTES) Initiative

Rio de Janeiro, March 20, 2023

Agenda

5 min Welcome remarks

15 min IRENA presentation

15 min Brazil presentation

20 min Q&A, interventions from the floor

5 min Closing remarks

[Opening remarks]

Mr. Michael Hackethal, Head of Division.

Federal Ministry of Economic Affairs and Climate Change.

Germany.

Presentation: Accelerating the Clean Energy Transition

Juan Jose Garcia
Programme Officer, Clean Energy Transition Scenarios
Rio de Janeiro, Brazil, March 20, 2023.

Long-Term Energy Scenario Initiative

Overview

- Provides a global platform to exchange national LTES practices among scenario practitioners.
- Promotes wider and more effective use of LTES for the clean energy transition in governments.
- +50 countries examples synthesized in analytical reports.
- Over 60 international and regional events and webinars organized.

27 members (extended beyond original CEM countries)

» Austria	» Cyprus	» Italy	» Portugal
» Bosnia and Herz.	» Denmark	» Japan	» Peru
» Brazil	» Dominican Rep.	» Kenya	» Saudi Arabia
» Canada	» El Salvador	» Latvia	» UAE
» Chile	» Finland	» Lithuania	» United Kingdom
» Colombia	» Germany	» Mexico	
» Costa Rica	» Ghana	» Netherlands	

13 technical partners institutions



Long-Term Energy Scenario Initiative

Focus

01

Strengthening scenario development

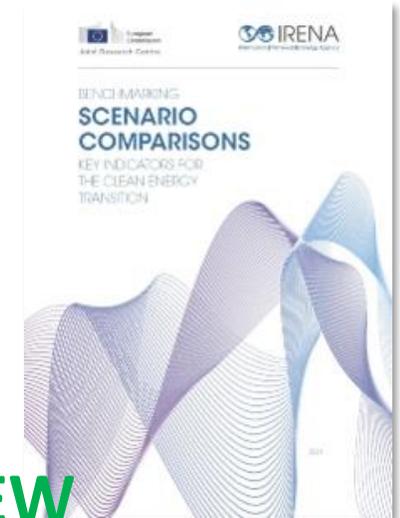
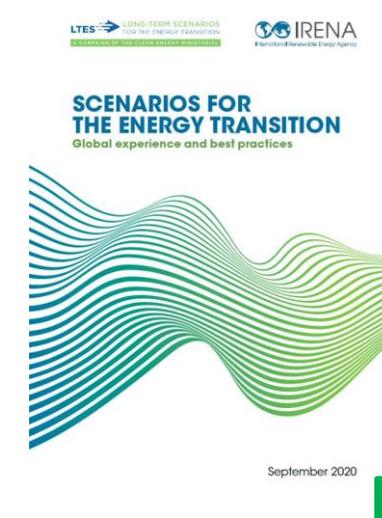
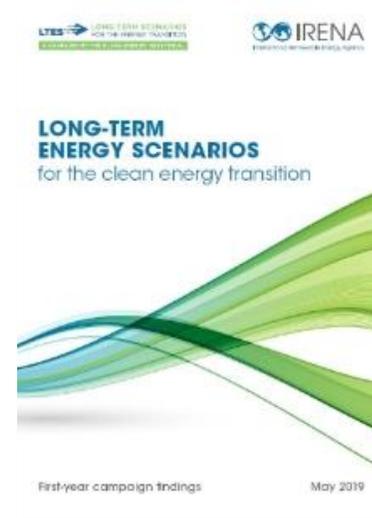
02

Improving scenario use

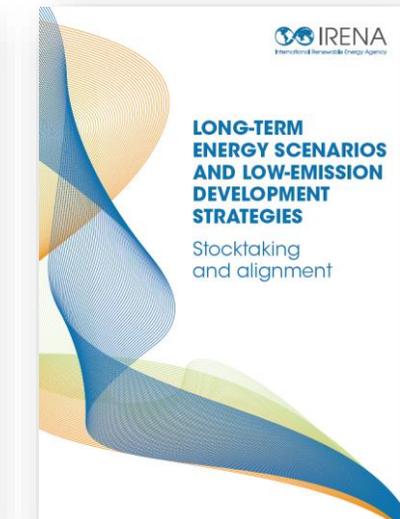
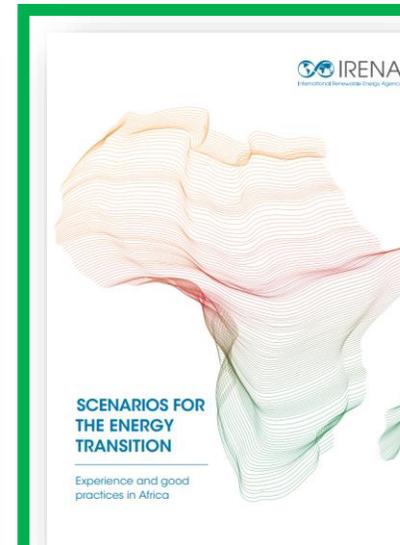
03

Identifying capacity-building approaches

Practices and experiences collected

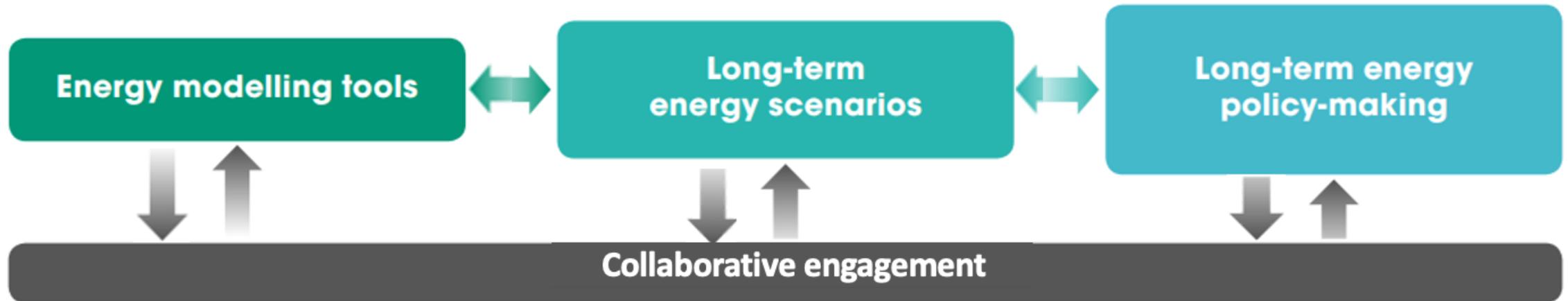


NEW



Long-Term Energy Scenario Initiative

A transparent and open LTES development process is essential for the clean energy transition



Source: IRENA 2020, *Scenarios for the Energy Transition (adapted)*

How are energy scenarios
being used to accelerate the
clean energy transition?

Long-Term Energy Scenarios help in:

Identifying the best cost-effectiveness pathways.

Developing strategies, roadmaps and setting targets and milestones.

Assessing risks, uncertainties and opportunities.

Guiding investments.

Encouraging innovation

Fostering collaboration to overcome barriers.

Raising public awareness.

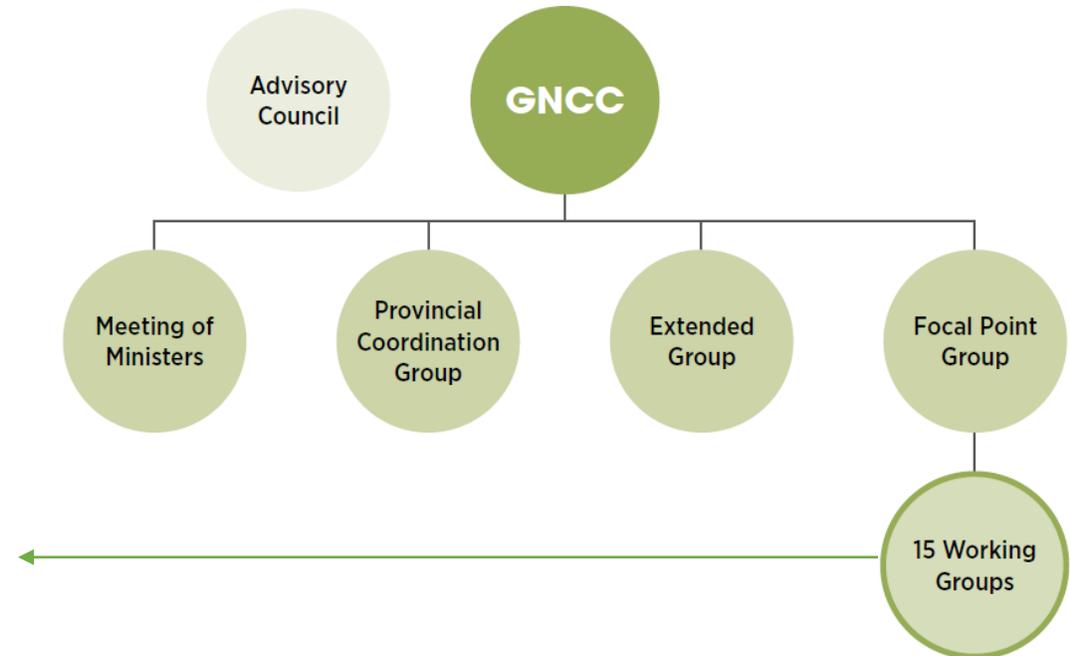
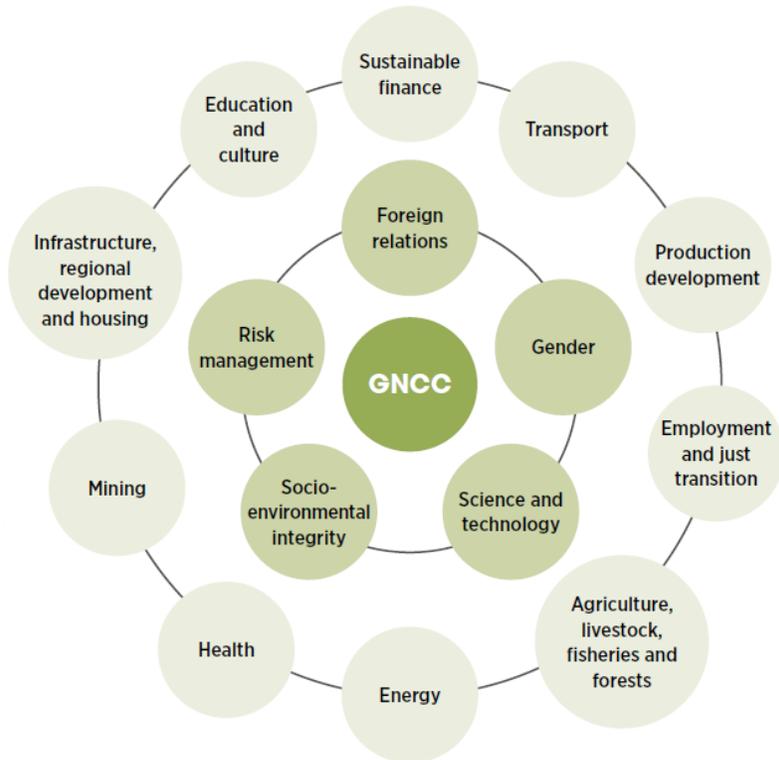
How are countries enhancing energy scenarios?

Developing robust governance structures

Enhancing institutional coordination: by legal mandate



Argentina



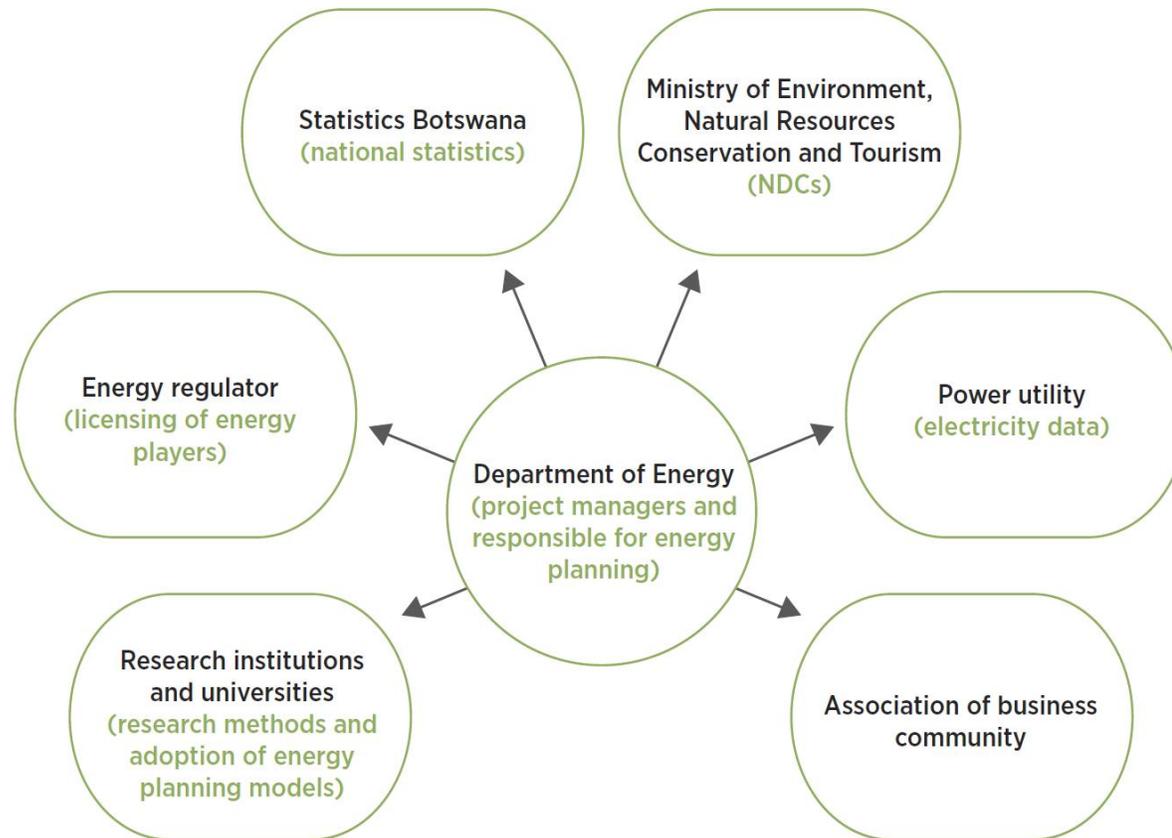
How are countries enhancing energy scenarios?

Developing robust governance structures

Enhancing institutional coordination: other institutional arrangements.



Botswana



Source: Setlhare (2021).

Technical Team

- Establish a dedicated team with resources and required expertise
- Capacity building on energy planning tools
- Train, refresh and retain the team
- Review energy model if possible on yearly basis

How are countries enhancing energy scenarios?

Encouraging participatory processes

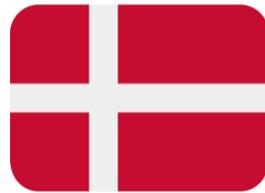
Different mechanisms, scopes, target groups, governance, tools.



Belgium



Finland



Denmark



Brazil



Chile



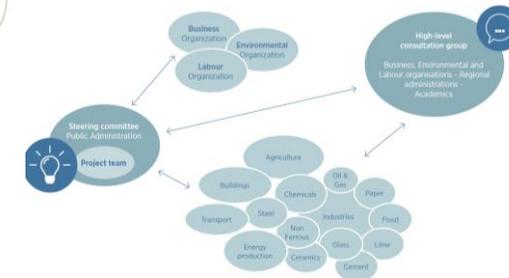
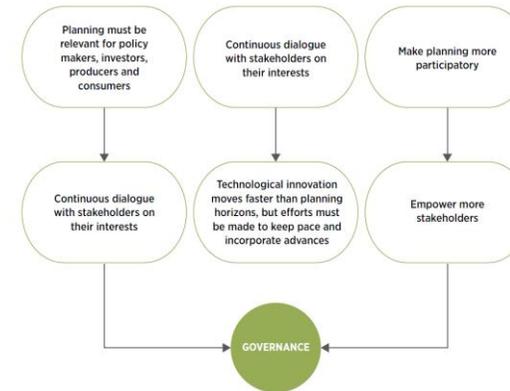
South Africa



Italy



Colombia



Adapted from the 2nd LTES International Forum (Federal Public Service Health, Food Chain safety and Environment, 2020).

1 - Participatory and inclusive with a multi-institutional approach

 **10** workshops **+250** participants of public and private sectors

2 - Guiding work with questions by policy makers

The PNE 2050 was designed to answer **12 guiding questions** prepared by the Brazilian Ministry of Mines and Energy 

3 - Scenarios used as tool to stimulate debate and build consensus

PNE 2050 innovates by proposing a **3-month period** for public consultation and a series of presentations to publicise the content of the plan during this period. This aims to enable stakeholder participation and facilitate consensus building.

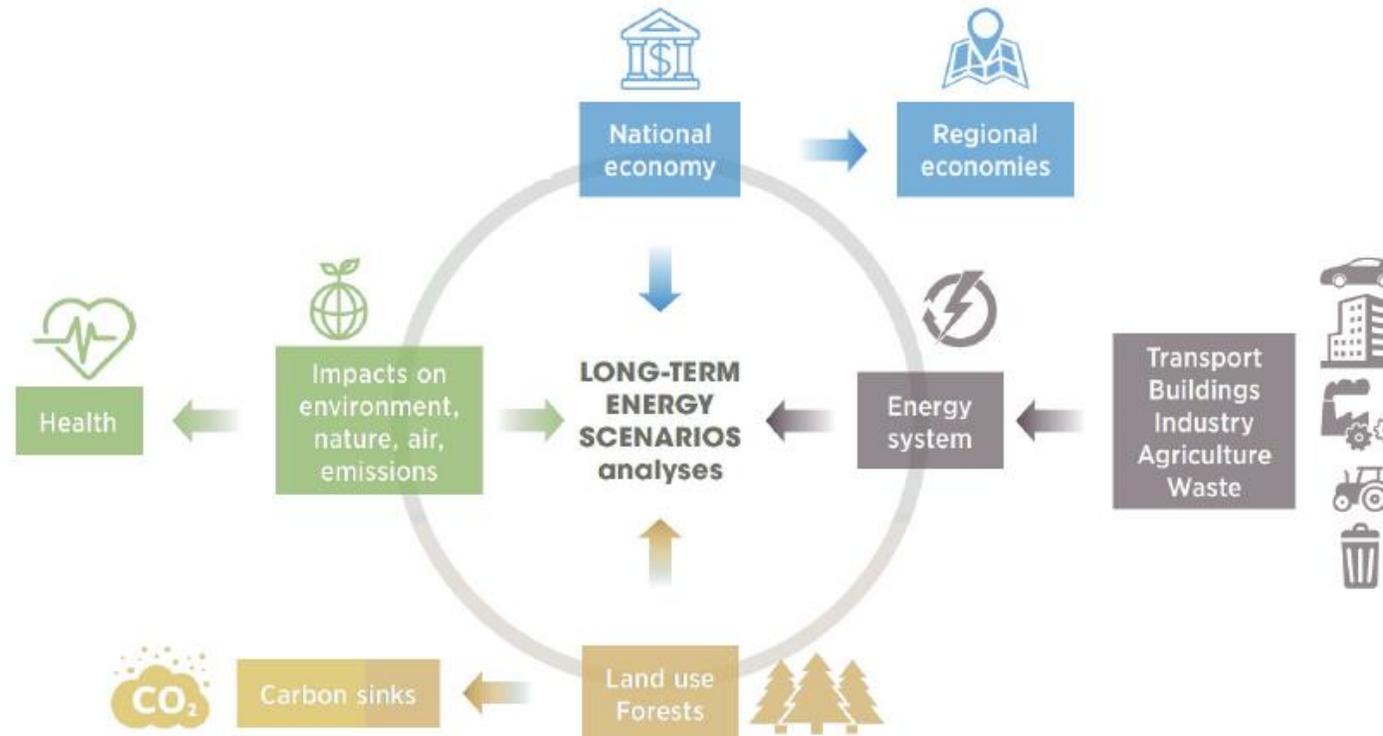
How are countries enhancing energy scenarios?

Expanding the boundaries of scenarios

Address innovation, incorporate interactions between sectors, integrate socio-economic analysis into LTES



Finland

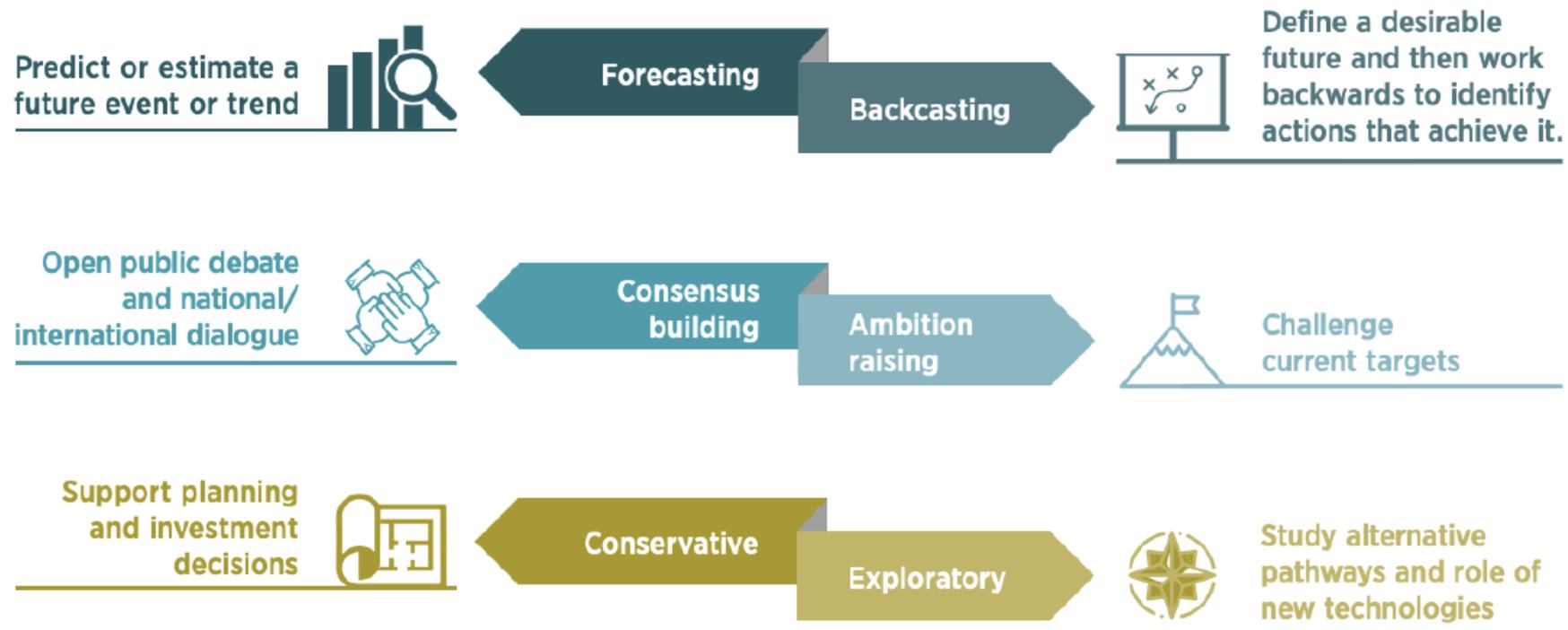


Helps to understand the realistic impacts and consequences of a just transition, allowing governments to make more informed decisions.

How are countries improving the use LTES?

Defining the purpose of LTES and ensuring transparency

Types of uses of LTES for planning the clean energy transition



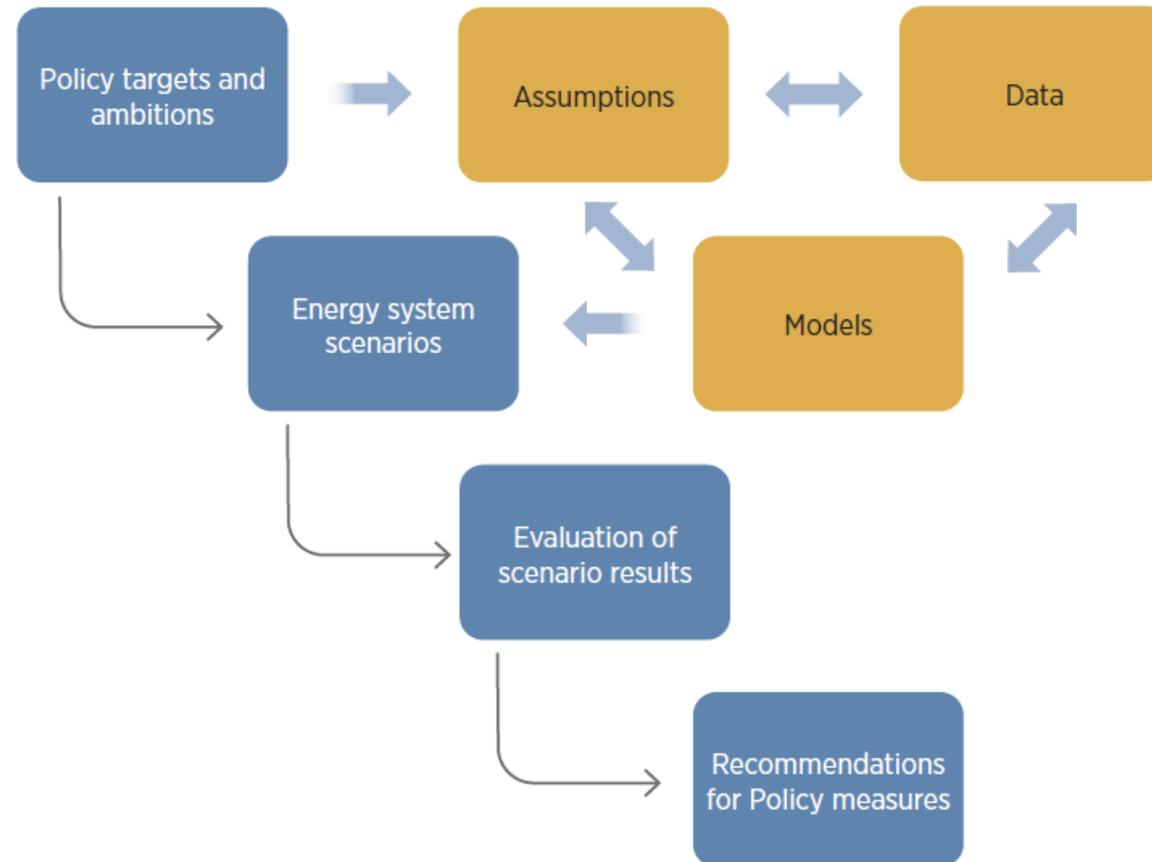
How are countries improving the use LTES?

Defining the purpose of LTES and ensuring transparency

Backcasting: LTES resulting in recommendations and policy measures for the energy transition



China



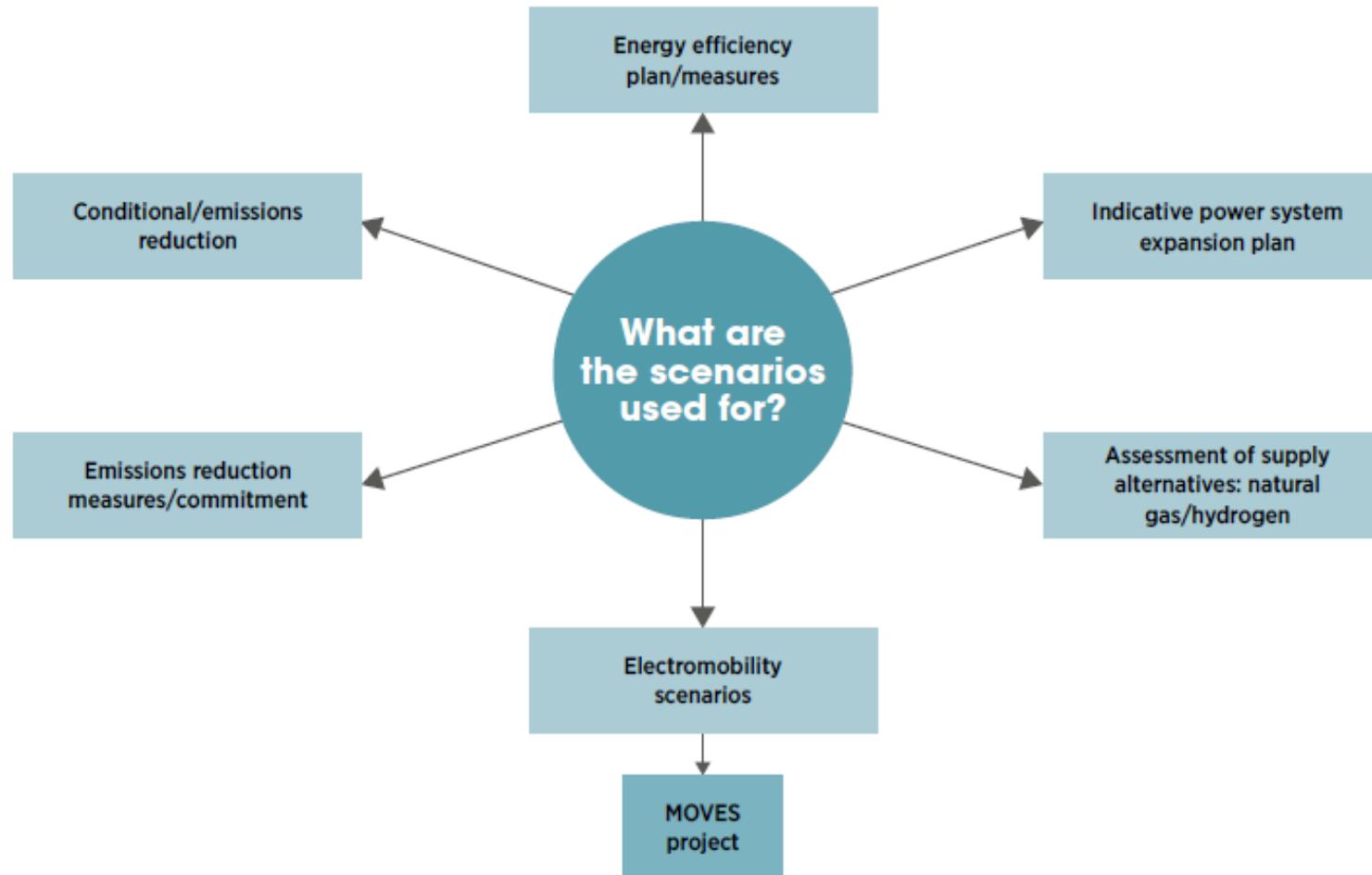
How are countries improving the use LTES?

Defining the purpose of LTES and ensuring transparency

Explore technology and policy options for the decarbonisation of the energy sector



Uruguay



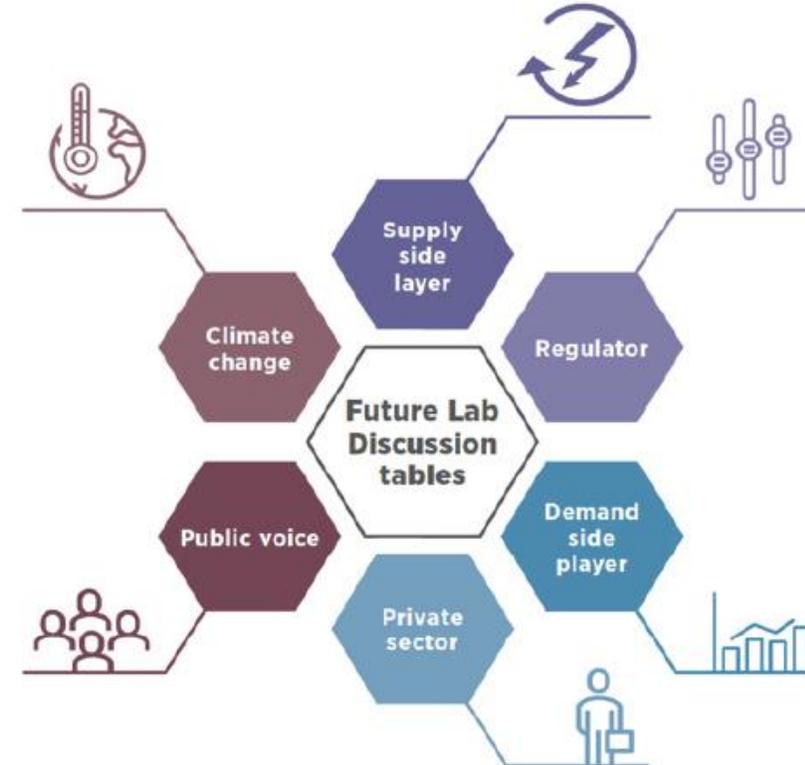
How are countries improving the use LTES?

Defining the purpose of LTES and ensuring transparency

A game to improve scenario transparency: The FutureLab communication exercise used by policy makers



UAE



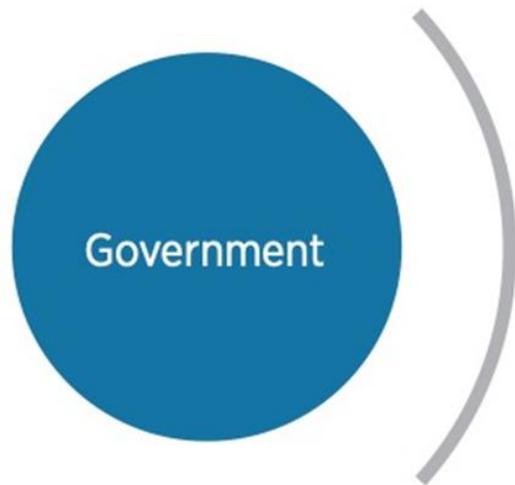
Source: (Ministry of Energy and Infrastructure, United Arab Emirates, 2019).

How are countries improving their capacities?

Building the right LTES capacity within governments

In-sourcing

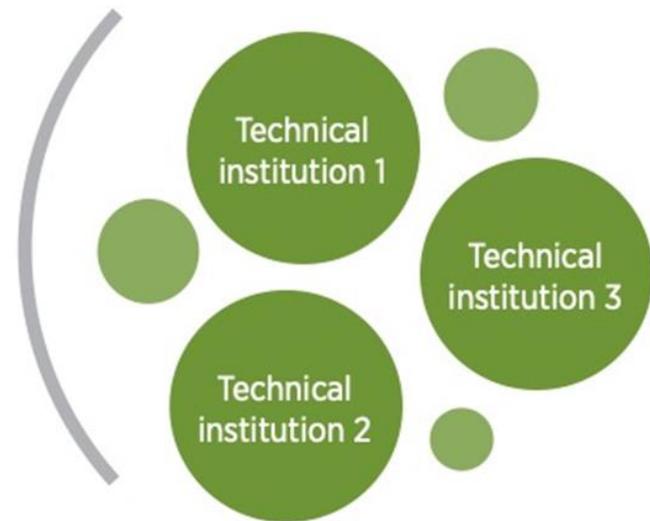
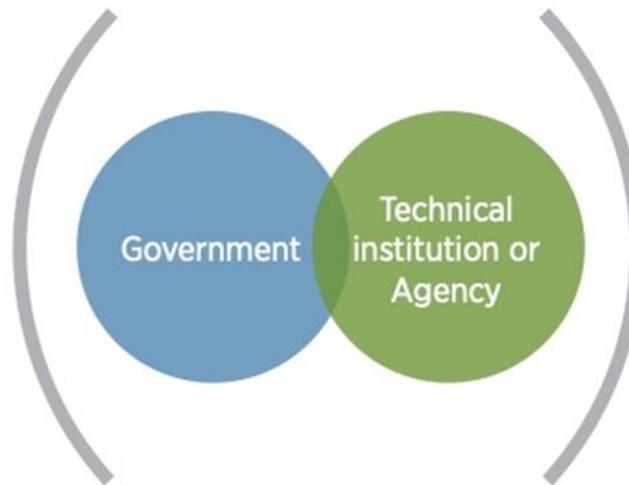
LTES capacity allocated solely within ministries or energy agencies



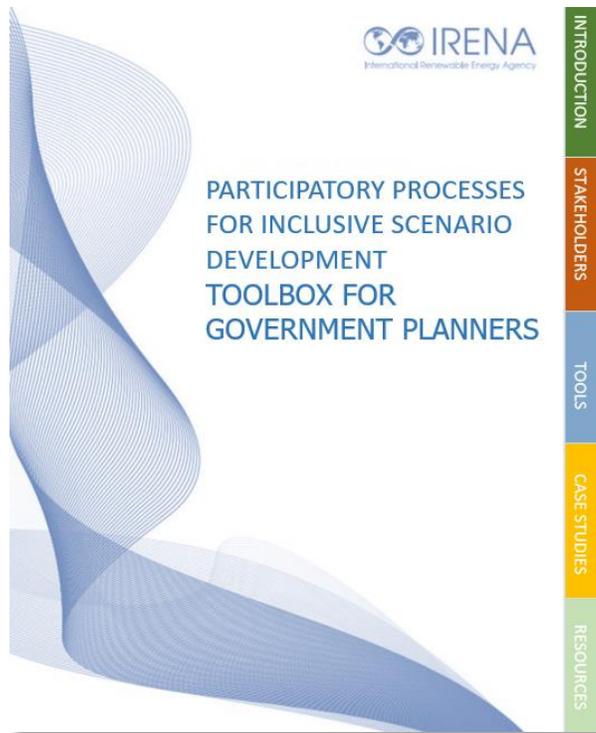
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Out-sourcing

LTES capacity out-sourced to research/technical institutions or consultations



Upcoming publication: “Participatory processes for developing national long-term energy scenarios”



- **Toolbox** for energy planners to use for developing participatory strategies for LTES development
- To be developed **collaboratively with stakeholders**
- Process to involve a variety of government and non-government actors

THANK YOU!
CONTACT US AT:
LTES@IRENA.ORG



Empresa de Pesquisa Energética



Accelerating the Clean Energy Transition: Insights from the Long-Term Energy Scenario (LTES) Initiative

2023 CEM SENIOR OFFICIALS' MEETING AND MI ANNUAL GATHERING

Gustavo Naciff

Deputy Head of Energy Economics | EPE

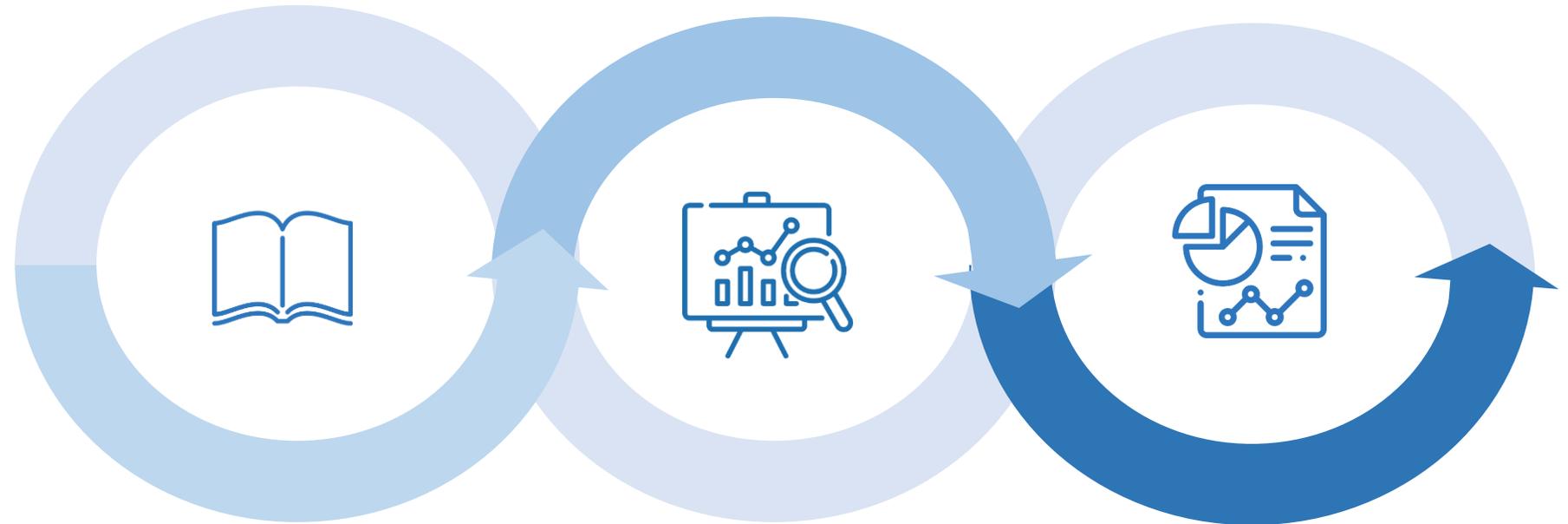
March 2023

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**Member of the
National Council for
Energy Policy (CNPE)**



Energy Statistics

- Brazilian National Energy Balance. [Link](#)
- Atlas of Energy Efficiency in Brazil. [Link](#)
- EPE webmap. [Link](#)
- Inova-e Platform - Energy Innovation Investments in Brazil. [Link](#)

National Energy Plans

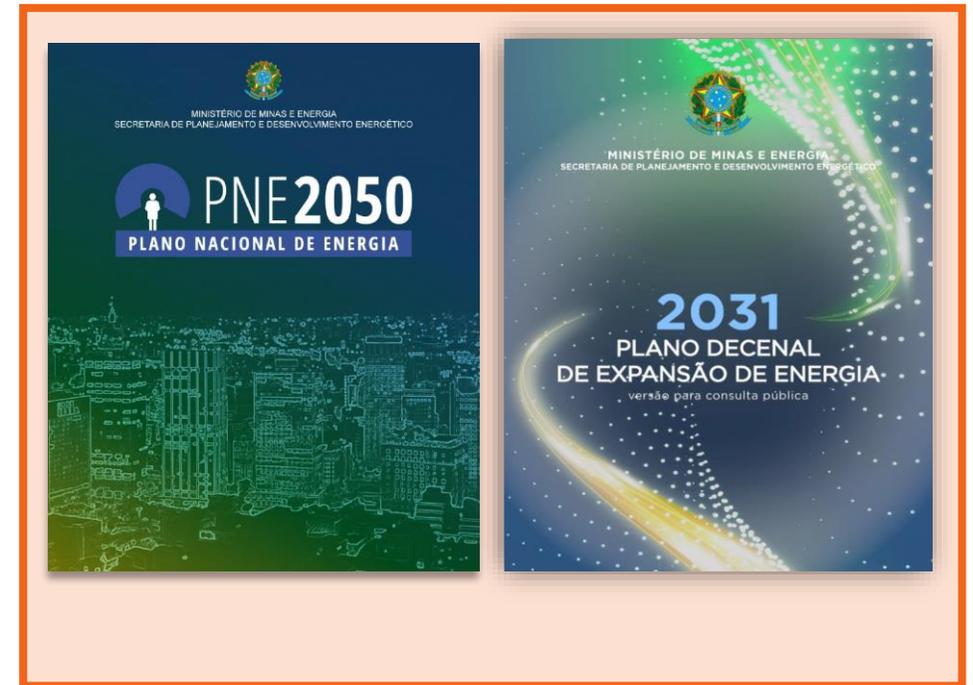
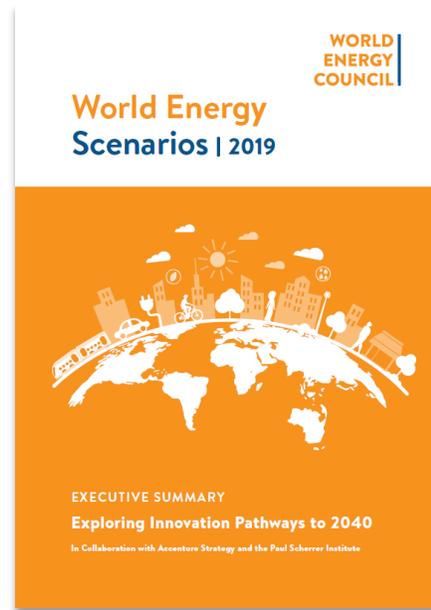
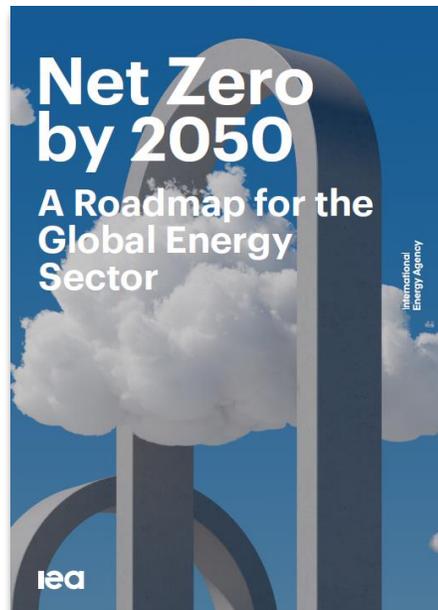
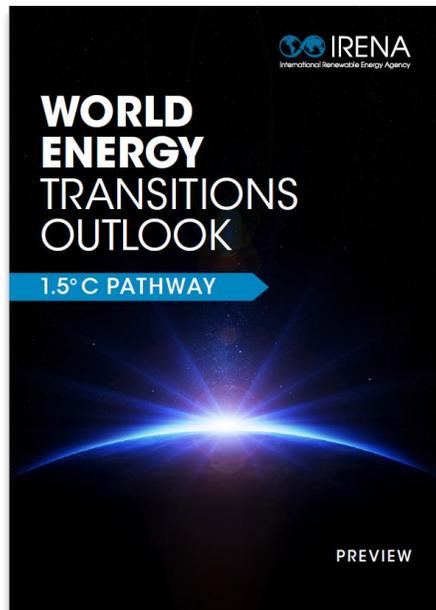
- Brazil 10 Year National Energy Expansion Plan. [Link](#)
- National Energy Plan 2050. [Link](#)
- National Energy Plan 2030. [Link](#)

Support to Energy Policies

- COP21 iNDC: Energy Production and Use. [Link](#)
- Distributed Energy Resources: Impacts on Energy Planning Studies. [Link](#)
- Flexibility and Capacity: Concepts to Incorporate Attributes into Energy Planning. [Link](#)
- PV Projects on Energy Auctions. [Link](#)

Examples of energy scenarios...

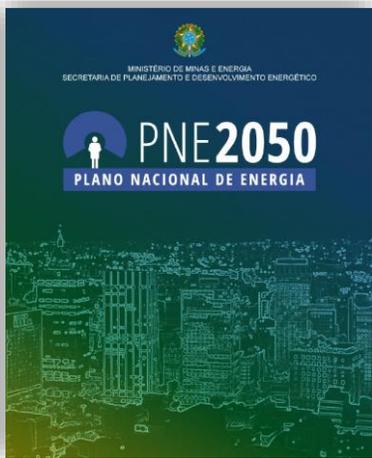
- **Global scenarios** to give a broad perspective of challenges and opportunities
- **National and regional scenarios** for better strategy customization and analysis for integration to global value chains





- **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 Scenarios (sensitivity analysis)



- **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



Scenario
**Growth
Challenge**



- ✓ Accelerated economic and energy demand growth
- ✓ Strong pace of energy infrastructure expansion
- ✓ Energy as support for Brazil's social and economic development

**Cone of
Uncertainty**

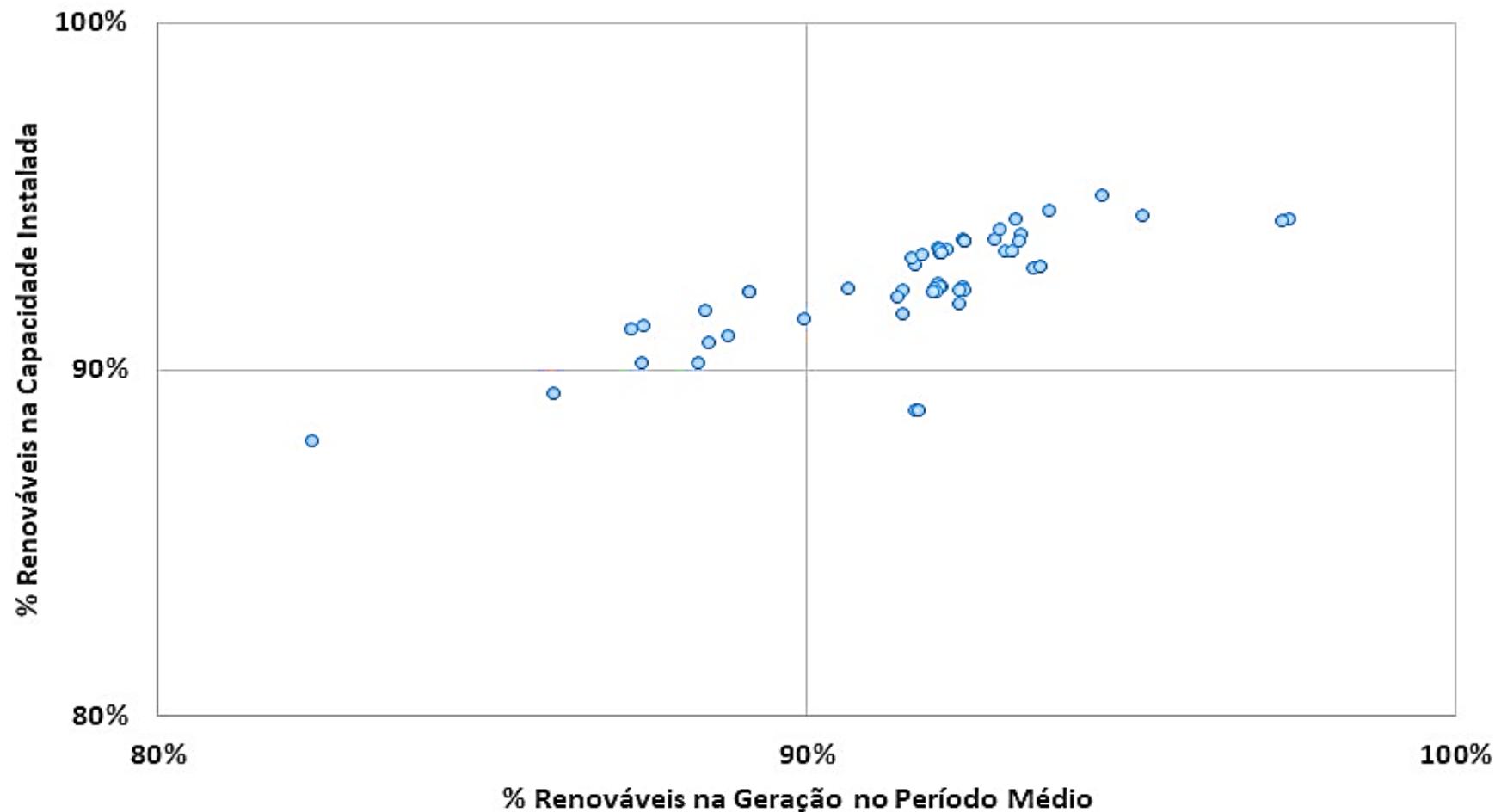


Scenario
Estagnação

Basis for
PNE2050

2015 2020 2025 2030 2035 2040 2045 2050

Share of Renewables in the Electricity Mix

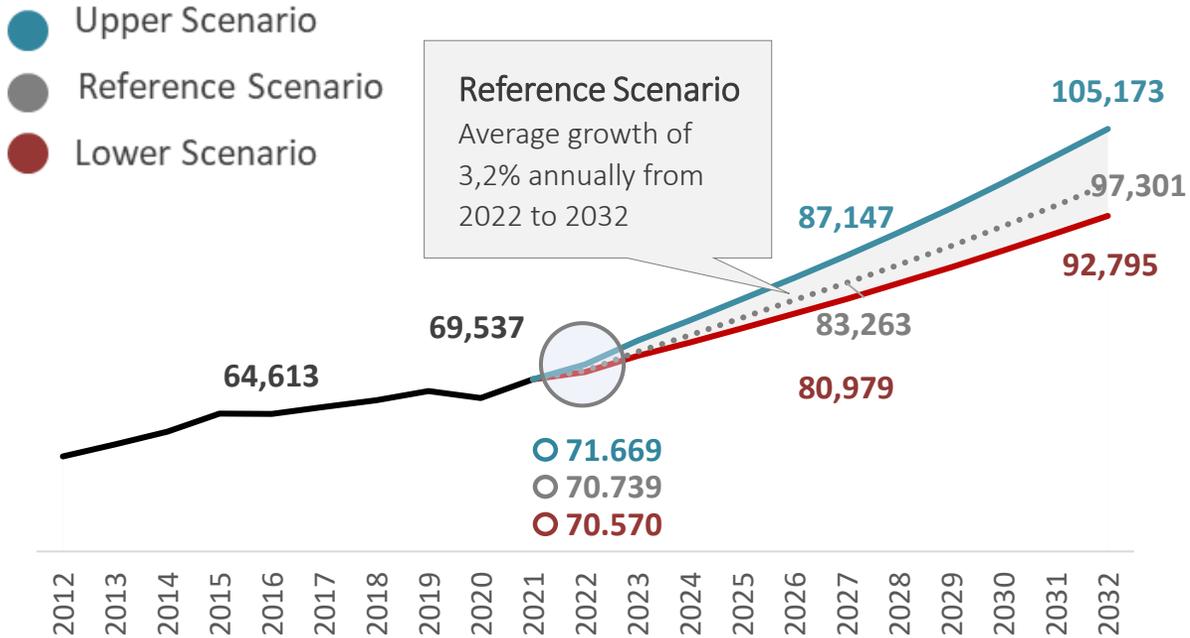


10-Year Energy Plan (2032 Edition)



National Grid – Electricity Load (average MW)

Source: ONS (past data) e EPE (projections)



National Grid – Annual additions (average-MW)

Source: ONS (past data) e EPE (projections)



* Considerando o ano de 2022 projetado.

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.

Net Zero Scenarios for Brazil

- 3 main net zero Scenarios, to help cover gaps of the PNE2050 and serve as step towards next PNE
- Innovative governance to develop long-term energy scenarios (non-official scenarios)
- Private sector engagement
- Expert panels to support scenario building
- Outsourced integrated modeling
- Modeling covering Energy, land use, and agriculture to better explore Brazilian emission challenges



Capacity Building strategy that count on LTES initiative colaboration

Long-term Scenarios for the Clean Energy Transition in Latin America
25-26 February 2019, Brasilia, Brazil



Scenario Development training at EPE
2019, 2020



Long Term Energy Scenarios (LTES) for the development of national clean energy transition plans in Latin America
February, 2021.

4th International Forum on Long-Term Scenarios for the Clean Energy Transition
December, 2022



The screenshot displays a virtual meeting interface. At the top left, the title "El concepto del Plan 2050" is shown. To the right are logos for ECLAC, IRENA, and the European Union. Below the title is a graphic for "PNE 2050 PLANO NACIONAL DE ENERGIA" with logos for EPE and the Brazilian Ministry of Energy. The central part of the interface features a circular diagram with three stages: "Diseño de la estrategia PNE 2050", "Implementación de la estrategia Planes de acción", and "Estrategia energetica a largo plazo". On the right side, there is a video feed of a participant named Thiago Barral and a chat window with messages in Spanish and English. At the bottom, a grid of video feeds shows other participants in the meeting.

Brazil's experience under the LTES campaign approach



01

**Strengthening
scenario
development**

International benchmarking in the context of the LTES campaign is essential to improve national Governance structure and inspire expansion of scenario boundaries (e.g., Net zero, better accounting for innovation, and others).

02

**Improving
scenario
use**

Clarifying the purpose of scenario building and improving communication are central to news LTES development in the Brazilian context, as is the case in net zero scenarios experience and the new National Energy Plan (expected launch in 2025).

03

**Identifying
capacity-building
approaches**

Brazil is continually investing in capacity building in the government (through the participation of LTES, investing in scenario methodology courses, and testing new outsourcing approaches like in the net zero scenarios..)

-
- Being part of the LTES network and other international collaborations is fundamental – discuss solutions for similar challenges
 - For the new National Energy Plan (PNE 2055) process, essential lessons from experience so far, such as:
 - The importance of stakeholder participation and engagement – new governance
 - Communication throughout the entire process of building and using scenarios
 - Capacity building
 - Discussions to be improved in LTES development: energy geopolitics, fair and inclusive transition, innovation in energy, consumer behavior, and migration of expertise from the O&G sector, among others.
 - learn from diverse models – dealing with different and new questions

Thank you!



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[Q&A, Interventions]

Please request the floor

[Closing remarks]

Clean Energy Ministerial



THANK YOU!
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