

6th International Forum on Long-Term Energy Scenarios (LTES) for the Clean Energy Transition

October 29-30, 2025

IRENA Innovation and Technology Centre, Bonn, Germany

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Background

Government energy planners face evolving challenges in the global energy landscape, including integrating emerging technologies, managing geopolitical risks, and aligning planning with climate commitments and sustainable development goals. Long-term energy scenarios (LTES) are critical tools for addressing these complexities, strengthening institutional processes, and guiding policymaking for resilient clean energy transitions.

IRENA's [Global Network of Long-term Energy Scenarios](#) (Global LTES Network) and [Clean Energy Ministerial Initiative on LTES for the Clean Energy Transition](#) provides a unique forum for government scenario practitioners to exchange insights, share experiences, and collaborate on advancing the clean energy transition. The Network focuses on three core areas: (1) improving scenario development, (2) enhancing scenario use, and (3) strengthening institutional ownership of scenarios; all to accelerate clean energy transitions. As the Network's flagship annual event, the [6th International LTES Forum](#) aims to deepen discussions and foster collaboration among its growing membership.

The 6th LTES Forum's objective is to explore these core areas based on the thematic and institutional priorities identified by the Network's members and partners. Specifically, discussions will delve into four consolidated thematic areas, synthesizing the survey's top-ranked priorities:

1. Institutional Coordination and Alignment: Integrating LTES frameworks with national strategies like climate plans, grid expansion, and socio-economic policies for coherent policy implementation.
2. Investment Mobilization: Translating scenarios into actionable pipelines, de-risking projects, and engaging financial institutions to bridge planning-implementation gaps.
3. Scenario Tools, Communication, and Stakeholder Engagement: Adopting open-source tools, transparent communication, and participatory processes to build trust, inclusivity, and in-house capacity.
4. Resilient and Inclusive Scenario Content: Incorporating energy security, demand-side shifts (e.g., AI), and just transition elements to model robust, equitable pathways amid uncertainties.

Discussion Focus

The Forum's sessions are designed to address the top institutional and scenario content priorities from the 2025-2026 Priority Survey, with a clear focus on actionable insights relevant to governmental energy planners and policymakers. Emphasizing governance processes (e.g., alignment, participatory mechanisms) while linking technical content to institutional applications, sessions will foster peer exchange, practical tools, and strategies for members to enhance national planning.

Format and Target Audience

The Forum will take place in a hybrid format (on-site and virtual), with limited on-site spots prioritized for LTES Network members, partners, and speakers. Virtual participation will ensure broad access. Eight focused sessions will span two days, organized around the LTES Members and Partners priorities. Each includes expert presentations, panels, and interactions, with potential co-hosts for enhanced collaboration. The primary audience comprises energy planners, government officials, energy industry representatives, intergovernmental agencies, and the scientific/climate community.

Agenda

Day 1: October 29, 2025. Building Institutional Frameworks for Energy Transitions

8:00-9:00 **Badge collection and Coffee**

9:00-9:30 **Opening Session.** This session will establish a common framing of current challenges to public and political support for the transition and confirm cross-cutting priorities that will guide the Forum.

Welcome remarks:

- **Norela Constantinescu**, Acting Director, IITC, IRENA
- **Simon Benmarraze**, Head Energy Transition Planning and Power Sector Transformation, IRENA
- **Lars Georg Jensen**, Chief Advisor, Danish Energy Agency
- **Jean-François Gagne**, Head of Secretariat, Clean Energy Ministerial

Presentation:

- **Juan Jose Garcia**, Programme Officer, IRENA

Expected Outcome: shared framing of current challenges to public and political support for the transition, setting the relevance of the Forum. Participants will be primed to connect their technical scenario work to actionable strategies for overcoming implementation barriers and building policy support.

9:30-11:15 **Session 1. (Co-host: UNFCCC) Long-term energy scenarios frameworks and NDC alignment in practice: coordination, decision cycles and national budget integration.** Delivering on national climate commitments requires close coordination between energy planning and climate policy processes. This session will explore how countries are using LTES frameworks to align with NDC/LT-LEDs in practice, focusing on real challenges faced by planning teams (roles across Finance–Energy–Environment, decision-making cycles/budget hooks, and near-term security/resilience needs).

Introduction: **Simon Benmarraze**, Head Energy Transition Planning and Power Sector Transformation, IRENA

Short presentations:

- **Carlos Ruiz Sanchez**, Programme Officer, UNFCCC
- **Juan Jose Garcia**, Programme Officer, IRENA
- **Stelios Grafakos**, Principal Researcher, Global Green Growth Institute

Panel 1: Global and regional perspectives (Moderator: Simon Benmarraze, Head Energy Transition Planning and Power Sector Transformation, IRENA)

- **Marcela Jaramillo**, Executive Director, 2050 Pathways
- **Mohammad Amin Tahavori**, Researcher in Energy and Climate Modelling, VITO
- **Sebastian Sterl**, Chief Economist Office, DG ENER European Commission
- **Estefania Ardila**, Deputy Director, Country Engagement, NDC Partnership

Country presentation: Spain and Guatemala

Panel 2: Country perspectives (Moderator: Marcela Jaramillo, Executive Director, 2050 Pathways)

- **Aurora Recio Gonzalez**, Head of Energy Foresight and Statistics Unit, Ministry for the Ecological Transition and the Demographic Challenge, Spain
- **Gabriel Armando Velasquez**, Technical Director, Unidad de Planeación Energético Minero (UPEM) Guatemala

- **Ali Ahmed Ali**, Director of Energy Research and Studies, Ministry of Electricity and Renewable Energy, Egypt

Expected Outcome: A deeper understanding of mechanisms and frameworks for ensuring consistency across national energy plans, NDCs, and LT-LEDs. Practical examples of successful coordination to reduce implementation gaps and enhance the ambition of climate commitments.

11:15-11:45 Coffee Break

11:45-13:15 Session 2. (Co-host: Brazil - GCEP) Turning grid planning to bankable grid pipelines: risk allocation and policy signals from scenarios. This session will explore how LTES-based grid planning can bridge the gap between the economic case for infrastructure and the investment case that financial actors require. While long-term scenarios establish the economic rationale for grid expansion, investors need this translated into financial models, risk-return profiles, and bankable structures. Speakers will discuss how planning outputs can generate investor-relevant signals and which mechanisms are proving most effective in mobilizing capital.

Moderation: **Simon Benmarraze**, Head Energy Transition Planning and Power Sector Transformation, IRENA

Scene setting:

- **Lucas de Oliveira**, EPE, Brazil. National experiences in transmission auctions
- **Gayathri Nair**, Programme Officer, Technology and Infrastructure for Grid Integration, IRENA

Panelists:

- **Arturo Alarcon**, Senior energy specialist, Inter-American Development Bank
- **Dennis Volk**, Head of Energy System Resilience and Cybersecurity, BNetzA
- **Cornelia Schenk**, Clean Energy Finance and Investment Policy Analyst, OECD
- **Lucas Simões de Oliveira**, Technical Consultant, EPE Brazil
- **Alvin Jose**, Head, Energy Transition Planning and Energy Efficiency. Sustainable Energy for All.

Expected Outcome: Shared lessons from applications of LTES-based grid planning to investor risk allocation, including how policy signals have been operationalized and the

institutional steps that enabled them. An understanding of which risks most constrain private capital and what measures have been used to address them, providing practical reference points for countries seeking to strengthen planning–finance alignment.

13:15-14:15 Lunch Break

14:15-15:45 Session 3. (Co-host: Natural Resources Canada) Communicating scenarios to build strong public and political support for the energy transition. This session will explore how scenario insights can be communicated in ways that strengthen public confidence, highlight economic and social opportunities, and reinforce the reliability of clean energy systems. Panelists will share experiences turning LTES results into messages that resonate with citizens, policymakers, and opinion-shapers, and that link the transition to tangible benefits such as affordable energy, quality jobs, and improved security. The discussion will also present IRENA’s participatory planning toolkit as a resource for engaging stakeholders and shaping inclusive narratives that inspire action.

Introduction: Nadeem Goussous, Associate Programme Officer, IRENA

Scene setting:

- **Evangelos Panos**, Head of Energy Economics Group, Paul Scherrer Institute (PSI)
- **Franziska Bock**, Doctoral researcher, Delft University of Technology

Moderator: Charlie Heaps, Senior Scientist and LEAP developer, Stockholm Environment Institute

PanelistsPanelists:

- **Evangelos Panos**, Head of Energy Economics Group, Paul Scherrer Institute (PSI)
- **Franziska Bock**, Doctoral researcher, Delft University of Technology
- **Andrzej Ceglarz**, Director, Energy System, Renewables Grid Initiative
- **Sebastien Debia**, Policy Analyst, Natural Resources Canada
- **Lars Georg Jensen**, Chief Advisor, Danish Energy Agency

Expected Outcome: Practical approaches for using scenario insights to build broad-based public and political support for the energy transition. Lessons on framing results to emphasize affordability, jobs, and reliability; using participatory processes to create shared ownership; and leveraging effective partnerships and communication channels to amplify impact.

15:45-16:15 **Coffee Break**

16:15-17:45 **Session 4. (Co-host: GET.transform) Institutional considerations for adopting modelling tools.** This session will explore how countries have institutionalized open-source and other modelling tools within their planning systems, overcoming challenges such as staff turnover, funding gaps, and long deployment timelines. Panelists will share governance approaches that retain skills, enable rapid operationalization, and integrate models into permanent institutional processes. The emphasis is on how open-source tools can be embedded into national planning ecosystems for resilience, transparency, and agility—not on technical training.

Moderator: Christopher Gross, Team Lead, GET.transform

Scene setting:

- **Maike Groninger**, Technical Advisor, GET.transform
- **Larissa Pinheiro Pupo Nogueira**, Team Lead, *Energy Modelling and Planning*, IRENA

Roundtable format with a prepared round of intervention from:

- **Edouard Clement**, Executive Director, Energy Modelling Hub (EMH)
- **Usman Ahmad**, Energy Planning & Resource Center, Energy Wing, Ministry of Planning, Development & Special Initiatives, Pakistan
- **Ali Ahmed Ali**, Director of Energy Research and Studies, Ministry of Electricity and Renewable Energy, Egypt
- **Carla Cannone**, Partner Engagement Lead, Climate Compatible Growth (CCG)
- **Maximilian Parzen**, CEO, Open Energy Transition
- **Lars Georg Jensen**, Chief Advisor, Danish Energy Agency
- **Charlie Heaps**, Senior Scientist and LEAP developer, Stockholm Environment Institute
- **Natalia Alvarado Sanabria**, Ministry of Environment and Energy, Costa Rica

Expected Outcome: Practical guidance on institutionalizing modelling tools for sovereign, adaptive planning, with frameworks for governance-led implementation. Strategies to build collaborative ecosystems, empowering LTES members to lead resilient, inclusive scenarios in their national contexts.

18:30-21:00 **Welcome Dinner**

Day 2: October 30, 2025. Energy Scenarios for Resilient Transitions

08:00-09:15 **Coffee and Networking**

08:00-09:00 **Closed-door session: LTES Network Members and Partners strategic meeting**

09:15-09:45 **Opening presentation:** Global and Regional Energy Outlooks. Ricardo Gorini. Head Renewable Energy Transition Roadmaps, IRENA.

09:45-11:15 **Session 5. (Co-host: European Commission Joint Research Centre) Addressing supply chain uncertainties in energy scenarios.** Global supply chains for critical materials and technologies, such as batteries, solar modules, and electrolyzers, are increasingly exposed to geopolitical risk, trade disputes, and concentrated market power. This session will explore how scenario-based planning can be used to stress-test supply chain assumptions and examine strategic options for resilience, including diversification of suppliers, regional manufacturing, and strategic reserves. Drawing on national and regional experiences, panelists will show how LTES-informed analysis has supported industrial policy, investment prioritization, and regional cooperation strategies to reduce vulnerability. The focus will be on translating supply chain risk insights into policy pathways and strategic choices that strengthen resilience.

Moderator and Scene Setting:

- **Nicola Magnani**, European Commission Joint Research Centre (JRC)

Panelists:

- **Matias Paredes**, Energy Planning and Climate Change Analyst, Planning and Climate Change Unit, Ministerio de Energía, Chile
- **James Glynn**, CEO, Energy Systems Modelling Analytics (ESMA)
- **Tord Bjørndal**, Lead Regulatory Advisor in Energy Economics, Ørsted
- **Alejandro Morales Perez**, R&D and Climate Modeller, VITO

Expected Outcome: The session will provide practical insights into how countries can plan for credible “Plan B” options to safeguard the energy transition under conditions of disruption or market concentration.

11:15-11:45 **Coffee Break**

11:45-13:15 **Session 6. (Co-host: VTT Technical Research Centre, Finland) Addressing the future of digitalization through demand-side planning.** The rapid growth of data centers, AI computing hubs, and other digitally driven loads is reshaping long-term electricity demand trajectories. While these loads can emerge quickly, their potential scale and location patterns can be anticipated and integrated into national LTES to guide infrastructure investment, location priorities, and policy design well in advance. This session will explore how countries are incorporating digitalization signals — such as sector growth forecasts, industrial zoning trends, and technology adoption pathways — into demand-side scenario frameworks. The focus will be on using LTES to prepare the power system for sustained demand growth from digitalization, enabling timely investment in grids, flexibility resources, and supporting infrastructure.

Scene-setting presentations:

- **Adrian Gonzalez**, Programme Officer, IRENA
- **Andrea Wainer**, Project Manager, REN21

Moderator: Tiina Koljonen, Principal scientist, VTT Technical Research Centre, Finland

Country presentations: Colombia, Korea, Portugal

Panelists:

- **Ricardo Aguiar**, Researcher, Directorate-General of Energy and Geology, Portugal
- **Marija Miletic**, European Commission Joint Research Centre (JRC)
- **Seoungho Lee**, Associate Research Fellow, Korea Energy Economics Institute (KEEI)
- **Johanna Stella Castellanos Arias**, Subdirector of Demand of the Subdirectorate of Demand, UPME, Colombia

Expected Outcome: Practical examples of how national LTES processes can capture and plan for digitalization-driven demand growth, providing early policy and investment signals that align technology adoption with decarbonization objectives and system readiness.

13:15-14:15 **Lunch Break**

14:15-15:40 **Session 7. (Co-host: United Arab Emirates) Governing AI in energy planning: Enablers and barriers for adoption.** Artificial Intelligence (AI) is increasingly present and influencing energy modelling and planning workflows. Research institutions and international

organizations have tested and piloted applications ranging from grid optimization to AI-enhanced geospatial data. These pilots show AI potential to accelerate analysis and broaden scenario exploration, but they also expose challenges of trust, validation, data privacy, data quality, and explainability. This session will focus on translating lessons from early pilots into actionable insights for governments: what institutional mandates, procurement rules, data policies, cross-ministerial coordination mechanisms, and validation practices would be needed to adopt AI responsibly and sustainably.

Moderator: Juan Jose Garcia, Programme Officer, IRENA

Opening remarks: Nawal Alhaneef, Director of Future Energy department, Ministry of Energy and Infrastructure, UAE.

Scene-setting presentation: Gianluca Lipari, Technical Leader - European Projects Coordinator, EPRI Europe DAC

Panelists:

- **David McCollum**, Scientist, University of Tennessee
- **Mohamed Bassam Ben Ticha**, Energy System Analyst, International Atomic Energy Agency
- **Alvin Jose**, Head, Energy Transition Planning and Energy Efficiency, SEforAll
- **Mark Howells**, Programme Director, Climate Compatible Growth
- **Evangelos Panos**, Head of Energy Economics Group, PSI
- **Tobias Augspurger**, Head of Data, Open Energy Transition

Expected Outcome: A set of governance principles and institutional prerequisites for adopting AI in energy planning, drawn from real-world operational experiences. These will help countries identify the legal, organizational, and technical foundations needed to integrate AI into planning processes while maintaining transparency, trust, and policy alignment.

15:40-16:00 **Coffee Break**

16:00-17:15 **Session 8. (Co-host: Brazil – GCEP) Embedding just transition in national scenario frameworks.** This session will explore how LTES approaches can support nationally defined just transition pathways that address socioeconomic, workforce, and social protection dimensions. These themes reflect the holistic framing of the UAE Just Transition Work Programme — an UNFCCC-mandated process whose fourth dialogue will

take place in September at Africa Climate Week. Panelists will discuss how scenario processes can anticipate labor market and regional economic impacts, quantify fiscal needs, and design policy measures that maintain support across political cycles. The focus will be on governance and planning practices that embed equity and inclusion in transition pathways, ensure sustainable financing, and build coalitions between government, industry, labor, and communities.

Scene-setting presentation:

- **Mirjam Reiner**, Programme Officer, IRENA
- **Arnaldo dos Santos Junior**, Deputy Head of Energy Economics at EP, EPE Brazil

Moderator: Reshma Francy, Associate Director, Policy Pathfinding and Trilemma, World Energy Council

Panelists:

- **Arnaldo dos Santos Junior**, Deputy Head of Energy Economics at EP, EPE Brazil
- **Matias Paredes Vergara**, Unit of Planning and Climate Change, Ministry of Energy, Chile
- **Lars Georg Jensen**, Chief Advisor, Danish Energy Agency
- **Liza V. Pangilinan**, Chief, NREB TSMD, Department of Energy, The Philippines
- **Unnati Gandhi**, Policy Analyst, Sustainable Jobs Secretariat, Natural Resources Canada

Expected Outcome: Practical approaches for applying LTES to design just transition strategies that are anchored in national development priorities, fiscally viable, politically resilient, and socially inclusive. Lessons on anticipating impacts, securing sustainable financing, and fostering broad-based coalitions capable of maintaining policy continuity across political cycles.

17:15-17:30 **Closing Remarks.**

17:30 – 19:00 **Farewell reception**