

Building Energy Bridges: Navigating Transitions Pathways

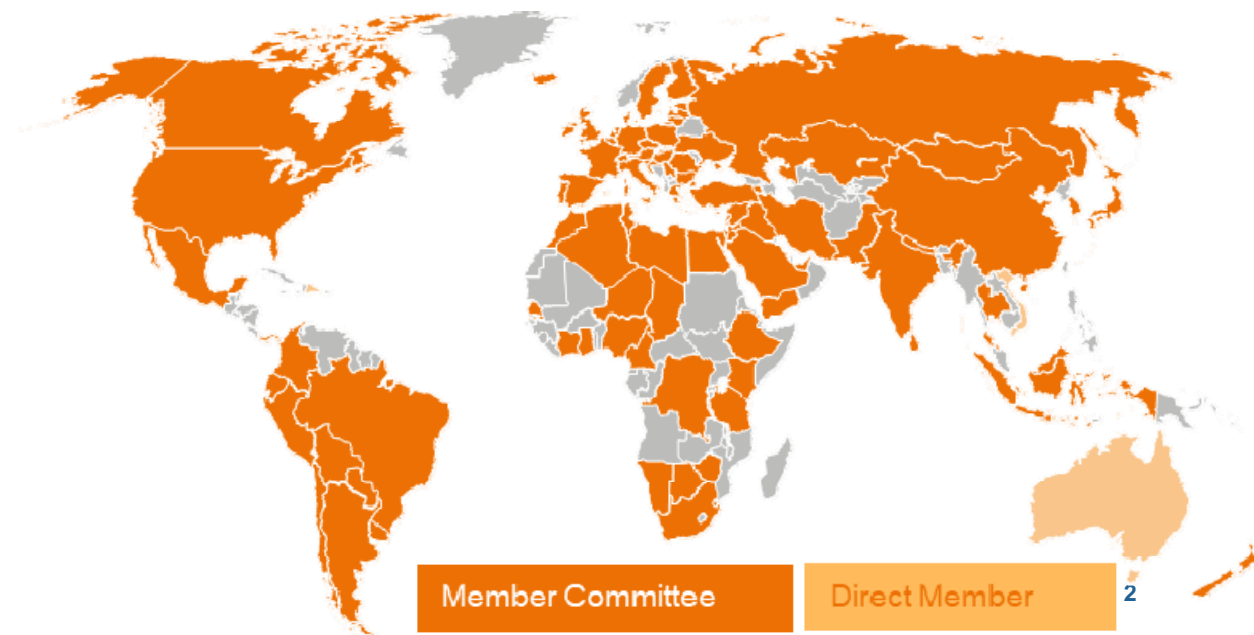
Energy And Climate Futures: Gender And Latin American Perspectives
22 October 2019 | Madrid, Spain

Jean Marie Dauger
Chairman, World Energy Council

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The World Energy Council

- A registered charity, established in **1923**
- The only **truly global** energy organisation – UN accredited
- A **neutral platform** engaging experts **across the whole energy system and beyond**
- **Promoting robust energy transition** and sustainable energy for all
- We are **impartial**, but not passive!



Energy Transition Toolkit



Equipping and empowering our members with tools and insights to manage successful energy transitions



World Energy Scenarios: a tool for bigger picture thinking, revealing deeper assumptions and reframing choices and options



Energy Policy Trilemma: policy pathfinding to manage security, equity and sustainability through transition



Dynamic Resilience: better prepare firms for new shocks and stresses and adapt whole systems to emerging and systemic risks



World Energy Issues Monitor: reality check - global, regional, national energy leaders perspectives on the key challenges



Innovation Insights: digging deeper into disruptive dynamics and moving transition innovation from the margins to mainstream

Preparing for Congress

4 mindset shifts since 2016

- 1 Value is migrating from volume-based strategies to enabling value adding services, reflecting the **shift from resource-centric to consumer-centric energy systems.**
- 2 A growing acceptance of the need to **manage the Energy Policy Trilemma** in all countries to manage security, equity and sustainability.
- 3 Different **net zero carbon technologies pathways** is needed to drive decarbonization, which includes not only electrons, but also cleaner molecules, better efficiency, etc.
- 4 Growing concern that **fragmentation of leadership** is the biggest risk of all.

2019 Energy Trilemma: more useful and usable policy pathfinding tool

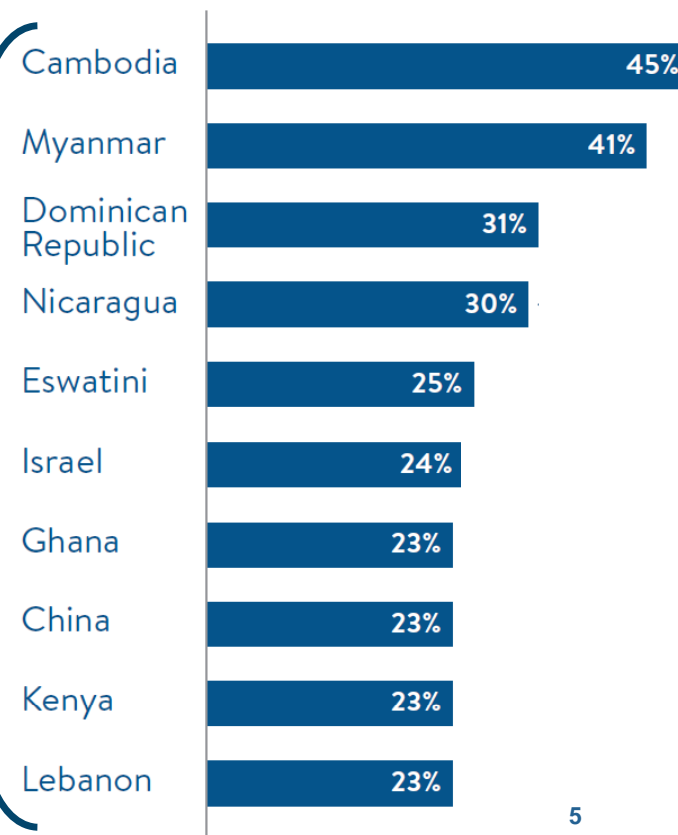
TOP 10 OVERALL RESULTS

1. Switzerland
2. Sweden
3. Denmark
4. United Kingdom
5. Finland
6. France
7. Austria
8. Luxembourg
9. Germany
10. New Zealand

- Energy policies are relatively stable.
- Further improvement is **incremental** rather than step-change and **with greater focus on sustainability.**

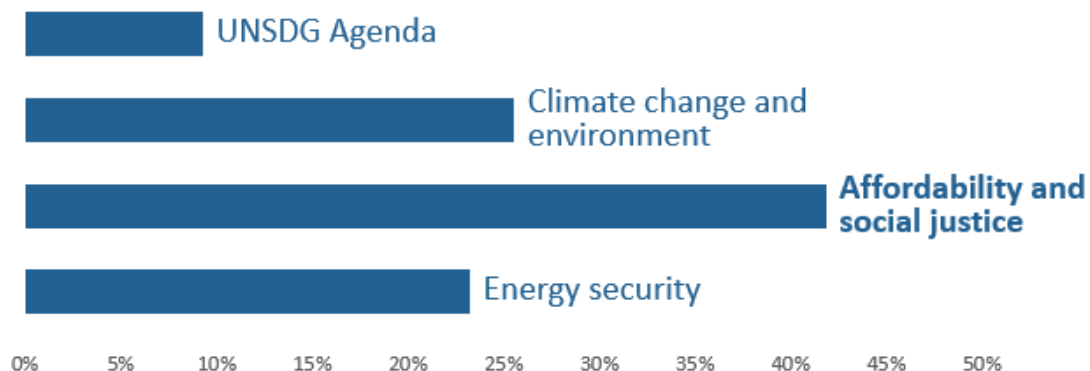
- Key drivers of positive change include extended **access**, increasing **electrification** and investing in **infrastructure.**

TOP 10 OVERALL INDEX SCORE IMPROVERS 2000 - 2019

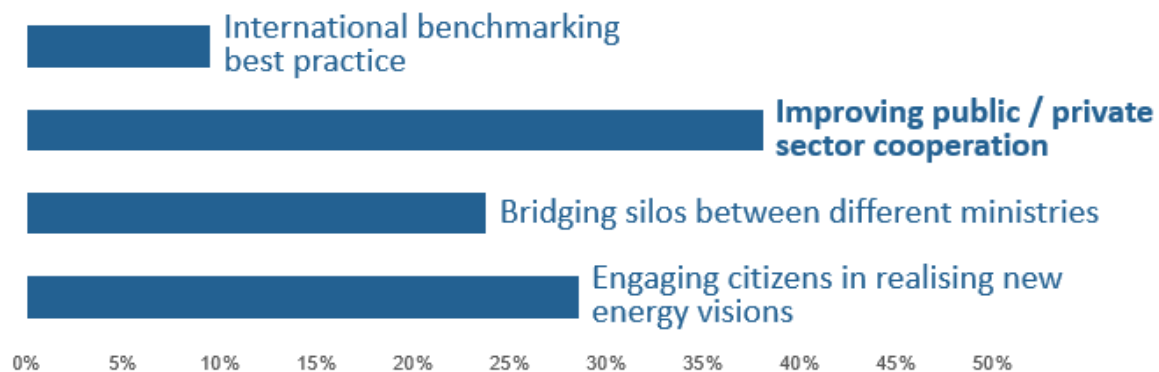


What do global Ministers think?

Q1: What is the key priority for your country's energy transition?



Q2: Where could your country get greatest value from using the Trilemma toolkit?



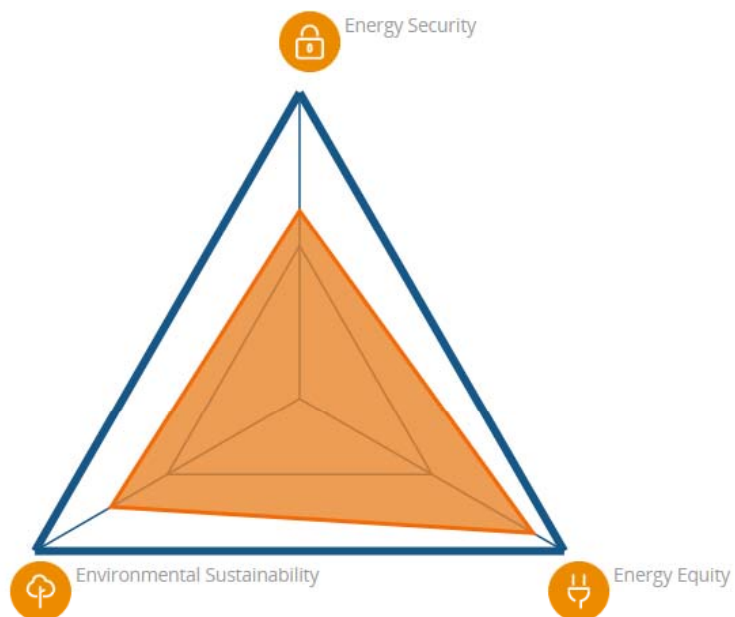
Trilemma Ministerial Roundtable World Energy Congress (Sept, 2019 Abu-Dhabi)

35 Ministers from around the world voted on actioning new energy visions using the improved Energy Trilemma



The World Energy Trilemma Report and Index 2019 was launched on September 11th during the 24th World Energy Congress in Abu Dhabi at the Trilemma Ministerial Roundtable. The engaging high-level discussion on the World Energy Trilemma National Performance over time was led by H.E. Suhail Al Mazrouei, Minister of Energy, Government of the UAE; H.E. Aleksander Novak, Minister of Energy, Government of Russian Federation; H.E. Jose Dominguez, State Secretary of Energy, Government of Spain and Sir Philip Lowe, Executive Chair, World Energy Trilemma.

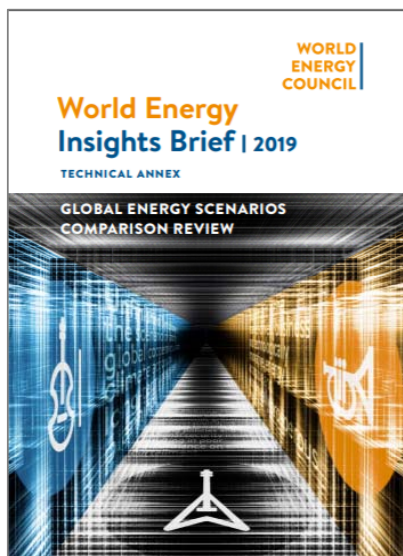
2019 Energy Trilemma Index: European profile



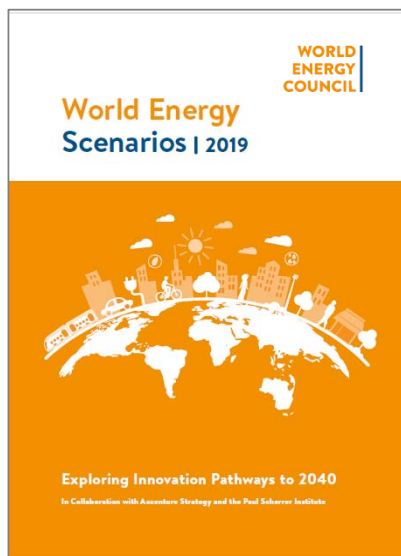
- European countries **dominate the top 50 overall Index**
- The EU's current **mitigation commitments** will not allow it to meet its sustainable energy objectives
- Further rapid penetration of renewables can be a **risk to supply reliability and short-term affordability of energy.**
- Focus on **increasing diversity** of energy sources and **supply and interconnection** to improve energy security.
- Modernising fossil-based infrastructure and integrating new one will require **technology-neutral policies.**

A new set of scenario insights and thought-leadership tools

Benchmarking to peers scenarios



World Energy Scenarios 2019



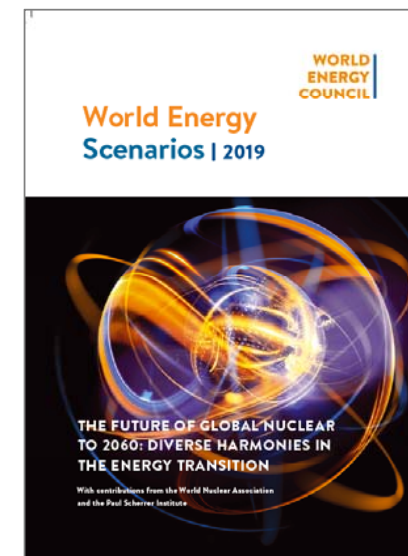
Designing for Disruptions (CoDs)



European regional scenarios



Global Nuclear perspective



European scenarios to 2040

Selected key messages



Modern Jazz



Unfinished
Symphony



Hard Rock

- **Digital energy competitiveness** is key to a next era of regional prosperity.
- European energy systems face an **investment cliff**, since needs significantly exceed finance availability.
- There can be no energy transition without **social involvement and public acceptance**.
- **Integrated energy-industrial strategies** and **sector-coupling policies** are pivotal in enabling deeper decarbonisation and social just transition.
- New capabilities in **dynamic resilience and cross-scale governance** is needed to secure affordable energy transition.

Bringing Home Congress Take Away Messages


FIVE MAJOR THEMES

- 1 Multiple **energy bridges** are needed to deliver affordable & social just transition (not only electrons).
- 2 There has been a return of **G-Factors** (geopolitics and governments).
- 3 A **new economics of whole system transition** is required.
- 4 **Innovation** is key and the focus needs to broaden beyond new energy technologies.
- 5 There is **no one-size fits all**, but we can and must learn with and from each other.

TWO NEW CRITICAL AGENDAS

- Time to talk about **non-carbon and climate adaptation**
- Getting the basics right – addressing the challenge of **‘quality energy access’**

Looking forward

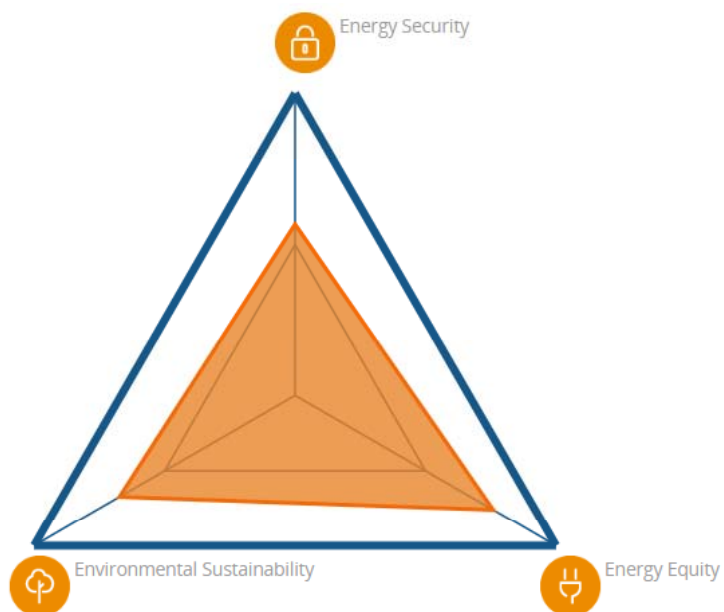
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- Better and new ways of working with members and engaging with MCs
 - Deepening our regional footprints – capacity building, toolkit in use
 - Drive to impact – measurable outcomes (e.g. clean molecules target)
 - Engaging new and non-traditional actors in our impact communities

Thank you

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Closer look at LAC regional perspective Trilemma and Scenarios

2019 Energy Trilemma: LAC regional profile



- 11 LAC countries rank in **top 50 on environmental sustainability**
- **Nicaragua and Dominican Rep.** are among top 5 overall biggest score improvers over last 10 years.
- **Extreme weather and high dependence on hydro** challenges energy security.
- Strong need for **large-scale infrastructure development and regional integration** to improve resilience.

Index Ranking and Balances Grades

17	ABA	Uruguay	45	ABB	Ecuador	62	BCA	El Salvador	97	DBB	Dominican Republic
35	BAB	Argentina	46	CBA	Panama	67	DBA	Paraguay	98	DBC	Jamaica
38	CBA	Costa Rica	48	BBB	Chile	76	CAD	Trinidad & Tobago	100	DCC	Honduras
39	ABA	Brazil	49	BCA	Colombia	84	BCC	Bolivia	102	DCC	Nicaragua
44	ABB	Venezuela	58	ACB	Peru	88	BCC	Guatemala			

World Energy Scenarios: LAC regional pathways

Samba



Region with high but uneven productivity gains and high level of innovation, with strong market forces

Tango



Government-driven region with sustainable growth and effective system of regional governance

Rock



A region with weak economic growth where countries promote and self-sufficient policies

SELECTED KEY MESSAGES

- **Regional integration** is urgently needed to unlock new sustainable growth opportunities
- In all scenarios, LAC countries should work on improving its **energy system's resilience**, while at the same time improving energy equity and security.
- The LAC energy sector is the **least carbon intensive** within the developing world due to a high share of hydro.
- **Diversifying energy mix** is critical that can improve the Energy Trilemma and enable better energy equity, energy security and environmental sustainability.