



WORLD ENERGY ISSUES MONITOR

ENERGY IN UPROAR - ACHIEVING COMMITMENTS THROUGH COMMUNITY ACTION



1 | Global Results Overview

An Energy Transition Tool





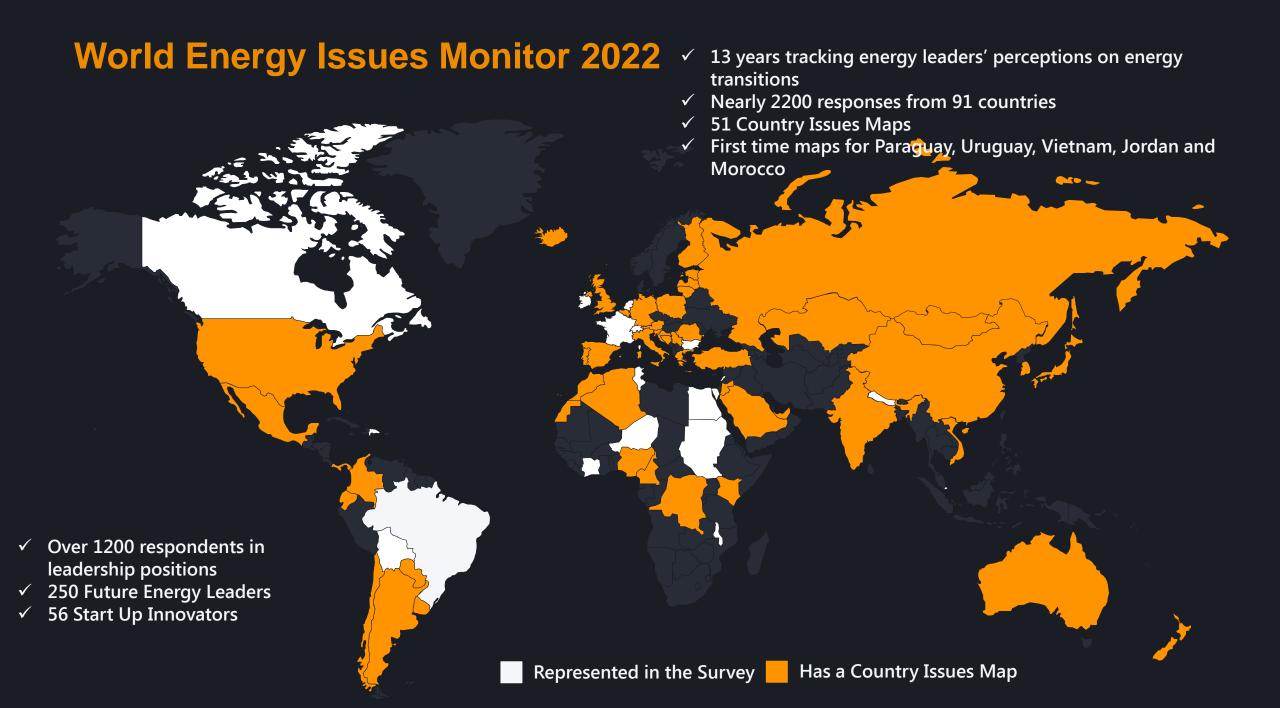
Through the Council's global network, this edition of the Issues Survey was taken right after energy leaders gathered in Glasgow, UK for the 26th annual Conference of the Parties (COP26) to align on global efforts to address climate change.



By aggregating responses by countries, regions and globally, the Issues Maps provide visual representation of this diversity of needs and priorities and is used globally to inform business and policy decision-making – a true energy transition tool.



The Issues Monitor is widely used by the World Energy Council's Member Committees and by the global energy community as a reality check tool that provides a horizon-scanning of perspectives on energy transitions from a country's own energy stakeholders.

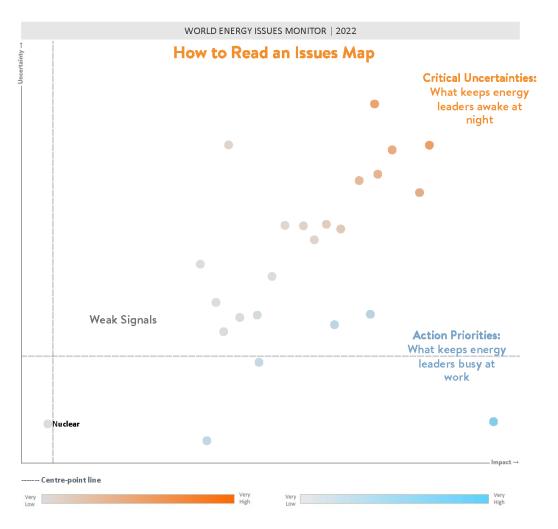


How to Read an Issues Map



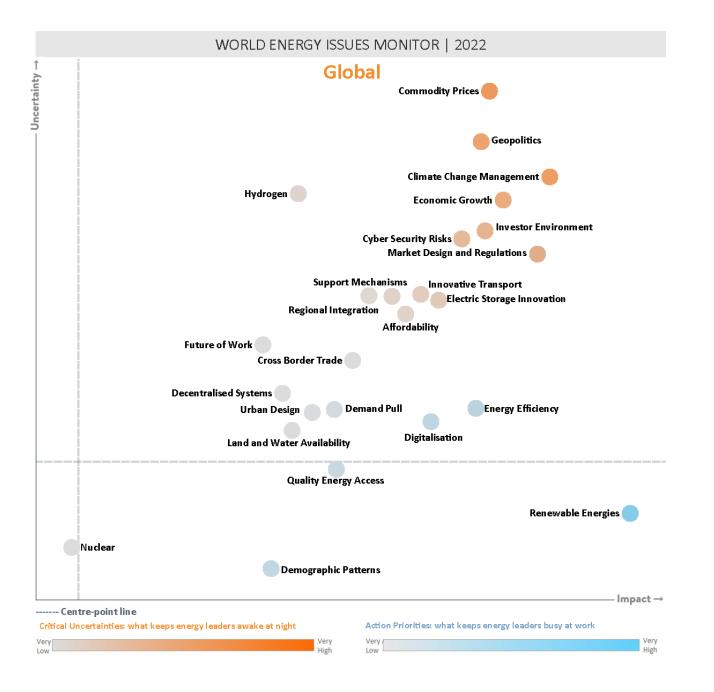
- Each Issues Map provides a **visual snapshot** of the critical uncertainties and action priorities that policymakers, CEOs and leading experts strive to address, shape and manage energy transitions.
- The bubbles in the Issues Map represent the averaged level of:

 a) uncertainty; and b) impact that respondents attribute to each energy transition issue. Those issues in the top right-hand corner of the map highlighted in orange have the highest levels of impact and uncertainty, and are defined as Critical Uncertainties. The bottom right-hand corner of the map highlights issues in blue that have high impact, but low uncertainty, and are defined as Action Priorities
- This year we have introduced colour shades, which are graded according
 to proximity to the right-hand corners of the maps. This enables finer
 differentiation of the degree of uncertainty and impact attributed to
 issues, and to highlight (lighter shades) issues that are close to becoming
 Critical Uncertainties and Action Priorities.
- The **centre-point line** represents the medium level for impact and uncertainty to help comparison between different issues maps.





Global Insights





1. Uncertainties increase again, across the board

An enormous degree of uncertainty ascribed to almost all the issues energy leaders were asked to assess, with Commodity Prices, Geopolitics and Climate Change Management and Economic Growth topping the list.

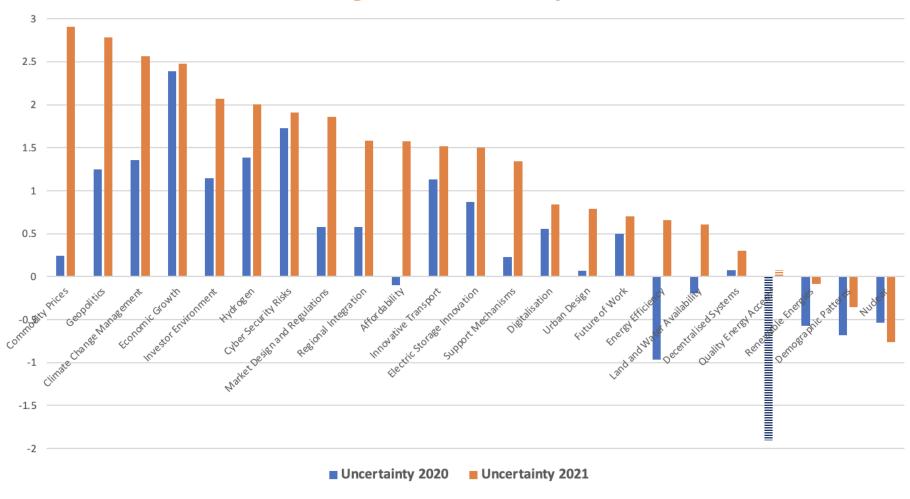
Very few issues cross into the **action priorities domain**, indicating that clear focus and priority setting is difficult.

Refocusing will be required to **re-establish clear priorities** for energy transition.

Taking into account this **continued increase in uncertainty**, a <u>Pause Scenario</u> which anticipates a return to a pre-pandemic normal seems increasingly unlikely. Rather, we see the emergence of diverse paths bringing some **Fast-Forward** elements of collaborative opportunities for collaboration, but also **Re-Record** signals of bottom-up initiatives to create human-centred transitions.

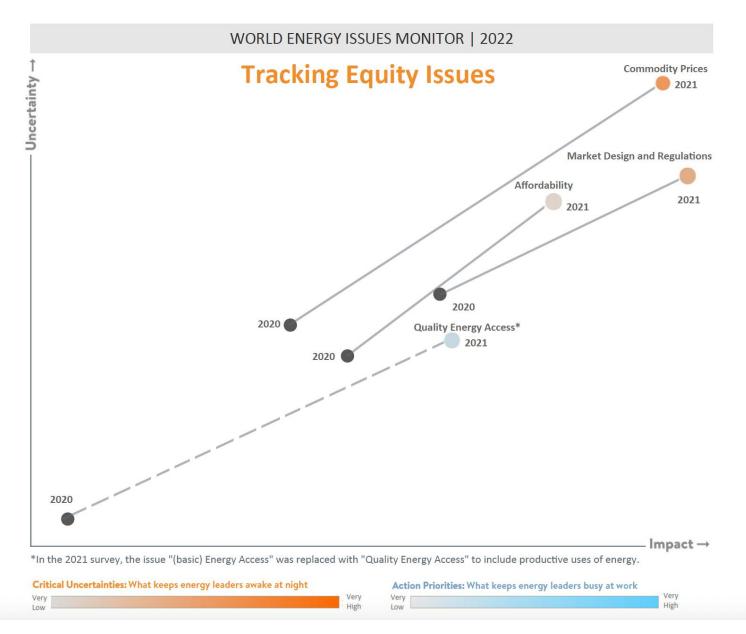


Time Tracking Global Uncertainty 2020 - 2021



^{*}In the 2021 survey, the issue "(basic) Energy Access" was replaced with "Quality Energy Access" to include productive uses of energy.

- 2. Equity-related concerns highlight the need to humanise the energy conversation
- Issues that affect Energy Equity such as
 Commodity Prices, Affordability, Quality
 Energy Access and Market Design have seen the sharpest increase in impact and uncertainty compared to 2020.
- Significant lessons to be learned from Market
 Design failures, and the societal impacts
 could be profound given state resources have
 been required to offer "fixes".
- Quality Energy Access enters the Action
 Priority area of the map globally following its redefinition from (basic) Energy Access.





3. Priority is to work collaboratively to turn Critical Uncertainties into Action Priorities

- Energy leaders' perspectives signal the importance of **stabilising Critical Uncertainties** and finding practical ways to reach a point of greater confidence There is too high a degree of uncertainty across all dimensions to allow for stable route mapping which, in turn risks leading to further inaction. This must be resolved swiftly.
- Leaders at COP26 have put questions back on the agenda, but clear **pathways to achieve the Paris Goals** are yet not apparent.
- There is a need to explore the **drivers of change in uncertainty and their wider impact**, and we hope that this report opens up the dialogue and leads to action.



3 | Regional Perspectives

Critical Uncertainties across regions

WORLD ENERGY COUNCIL

(What is keeping energy leaders awake at night – from highest to lowest scores)

Africa

Commodity Prices
Economic Growth
Geopolitics
Regional Integration
Climate Change Mngmt

Asia

Commodity Prices
Climate Change Mngmt
Geopolitics
Economic Growth
Hydrogen

Europe

Commodity Prices Geopolitics Climate Change Mngmt Market Design Investor Environment

LAC

Economic Growth Commodity Prices Climate Change Mngmt Investor Environment Market Design

MEGS

Commodity Prices
Economic Growth
Geopolitics
Climate Change Mngmt
Innovative Transport

North America

Climate Change Mngmt Cyber Security Risks Market Design Investor Environment Affordability

Frequent occurring across several regions

- Commodity Prices
- Economic Growth
- Geopolitics
- Climate Change Management
- Market Design
- Investor Environment

Unique regional issues

- Africa: Regional Integration
- Asia: Hydrogen
- **MEGS**: Innovative Transport
- North America: Cyber Security Risks and

Affordability

Action Priorities across regions

(What is keeping energy leaders busy at work – from highest to lowest scores)



Africa

Renewable Energies
Digitalisation
Demographic Patterns
Energy Efficiency
Market Design

Asia

Renewable Energies
Digitalisation
Demographic Patterns
Quality Energy Access
Demand Pull

Europe

Renewable Energies
Digitalisation
Energy Efficiency
Demographic Patterns
Quality Energy Access

LAC

Renewable Energies
Energy Efficiency
Demand Pull
Urban Design
Quality Energy Access

MEGS

Renewable Energies
Energy Efficiency
Demographic Patterns
Land&Water Availability
Quality Energy Access

North America

Renewable Energies
Demographic Patterns
Energy Efficiency
Quality Energy Access
Digitalisation

Common to all regions

Renewable Energies

Frequent occurring across several regions

- Digitalisation
- Demographic Patterns
- Energy Efficiency
- Quality Energy Access
- Demand Pull

Unique regional issues

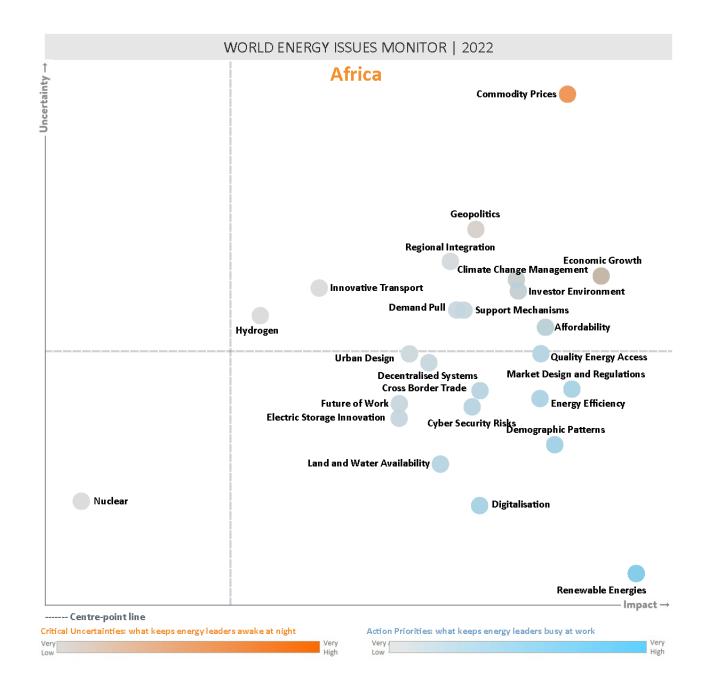
Africa: Market Design

LAC: Urban Design

MEGS: Land and Water Availability



Africa Highlights





Africa Map Overview

- As with all regions, excluding the North America region, Commodity Prices are the most critical uncertainty, dominating the Africa Issues map. The remaining issues are clustered in the high impact, lower uncertainty area around the centre point line of the map with no clear distinction of priorities.
- Consistent with the global map, Renewable Energies remain a stable Action Priority, with impact and uncertainty accorded similar scores to 2021.
- Digitalisation is a notable mover when compared with 2021, moving into the Action Priority agenda, whilst Decentralised Systems have moved in the other direction, assuming greater levels of uncertainty and decreasing in impact. Nuclear appears to have fallen out of the picture, dropping down in impact and uncertainty compared with 2021.

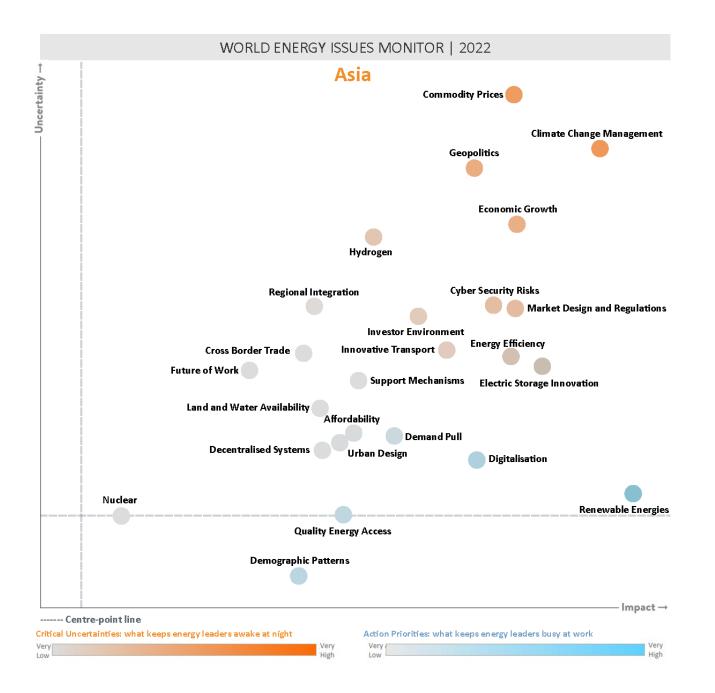
Africa region-specific issues (from survey open text)



Critical Uncertainties	Action Priorities
Institutional reliability and continuity	Rural electrification
Electrification and grid transition	Responsive technology integration and capacity building
Religious unrests	Industrial development
Project financing	T&D infrastructure
Transition cost and societal acceptance	Whole system's thinking (including economic growth,
Electricity pricing	innovative transport, waste and water treatment)
	Aging infrastructure
	Performance indicators and quality of service



Asia Highlights





Asia Map Overview

- Consistency is the theme across Asia, with the 2022
 Issues Map remaining remarkably constant between
 2021 and 2022. Commodity Prices and Geopolitics stand
 out as the Critical Uncertainties, with the region strongly
 impacted by energy security concerns and large price
 rises in energy costs. Hydrogen scores highly on the
 Critical Uncertainties axis and is accorded more interest
 than many other regions.
- Quality Energy Access is perceived as a regional Action
 Priority, but Affordability is not perceived as a significant issue. Demographic Patterns also fall into the Action
 Priority agenda, but are perceived to be decreasing in impact.

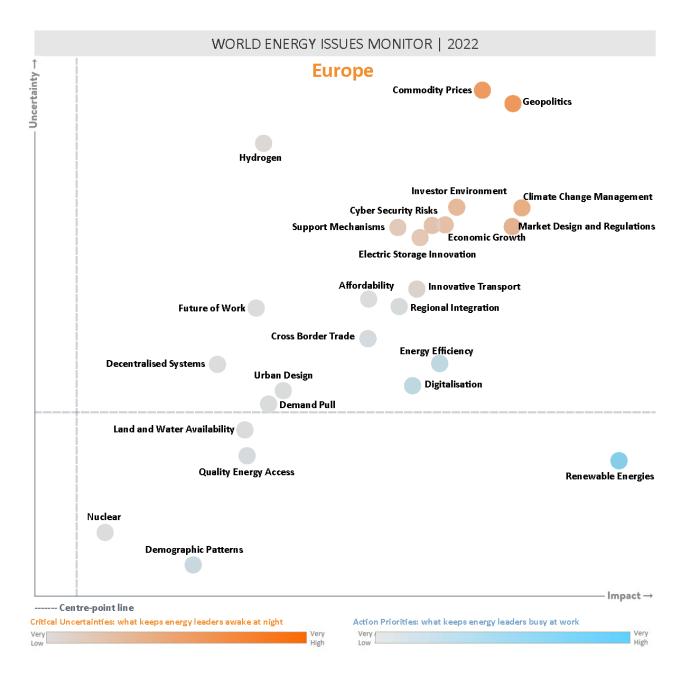
Asia region-specific issues (from survey open text)



Critical Uncertainties	Action Priorities
Institutional reliability and continuity	Climate adaptation measures
Pandemic long-term impact	T&D infrastructure
Electrification and grid transition	Responsive technology integration
Carbon policy	Capacity building
Greenflation and monetary crisis	Green demand creation
Industrial development	Market liberalisation
Regional cooperation and integration	
Transition cost and societal acceptance	
Talent availability	
The role of gas	



Europe Highlights





Europe Map Overview

- Following the global trend, there is an increase in uncertainty across most issues, with Commodity Prices and Geopolitics standing out as the region's Critical Uncertainties. These are strongly influenced by energy security concerns and significant price hikes, particularly in gas prices, being experienced across Europe.
- Hydrogen continues to be viewed with a high degree of uncertainty, and it will be interesting to follow progress on this issue as it forms a key part of the EU's Green Deal climate neutrality goals. Nuclear also appears on the Action Priority horizon – are there opportunities ahead?
- Renewable Energies continue to be a focus for Action Priority across the continent, whilst Quality Energy Access assumes greater uncertainty as the pandemic continues to impact working patterns and transport.

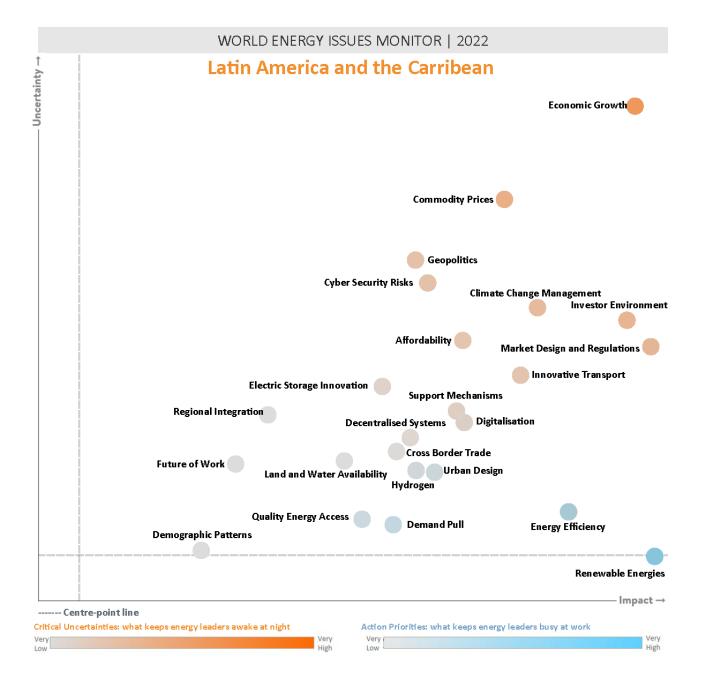
Europe region-specific issues (from survey open text)



Critical Uncertainties	Action Priorities
Institutional reliability and stability	Energy literacy
Net Zero action plan and regulations	Critical infrastructure (e.g.: grid, EV charging, mainland-
Security of supply	island system interconnection)
Coal phase-out	Community engagement (incl. cities and start-ups)
Carbon trading	Hydrogen regulation
Future energy mix	Energy storage
Environmental taxation	
Electricity pricing	
• Fuel subsidies	



Latin America and Caribbean Highlights





LAC Map Overview

- Showing analogous responses to Africa, the Latin
 America and Caribbean region reports clustering of all issues in the high impact area of the map, along with higher uncertainty. The map is striking in its depiction of no clear distinction of priorities. No issues fall into the Action Priorities quadrant.
- The priority for the region has to be clear leadership and pathways back to Action, with Economic Growth being deemed the highest priority.

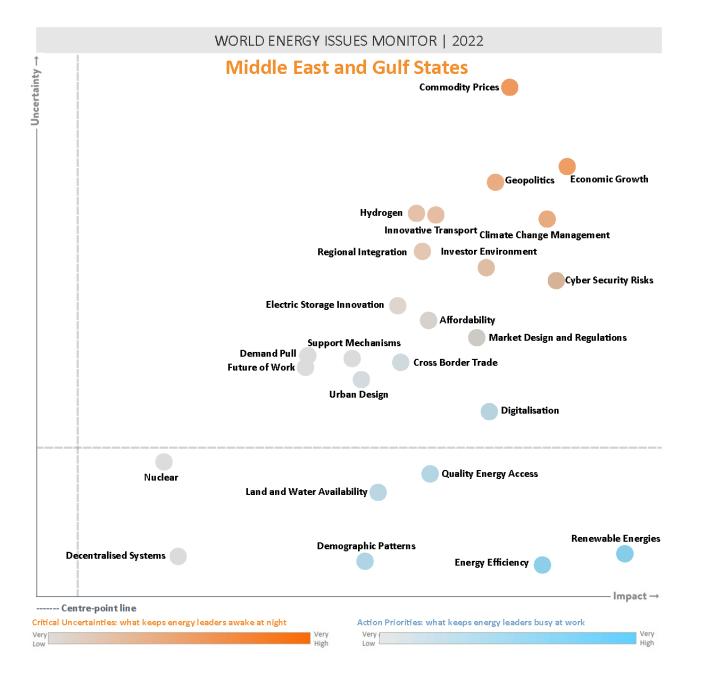
LAC region-specific issues (from survey open text)



Critical Uncertainties	Action Priorities
Institutional reliability and continuity	Long-term planning
Financial crisis	Energy literacy
Energy subsidies	Start-up innovation
Regulation and innovation alignment	Land and water resource utilisation
Public-private balance	Manufacturing and supply chains
Energy mix diversification	Environmental compliance
Social dynamics	Critical infrastructure (esp. transmission)



Middle East and Gulf States Highlights





MEGS Map Overview

- The Middle East and Gulf States continue to be aligned with the overall global Issues Map, with higher uncertainty overall and Commodity Prices and Geopolitics rising up from Action Priorities to Critical Uncertainties.
- Commodity Prices top the list of Critical Uncertainties, closely followed by Economic Growth and Geopolitics, which show enormous shifts over their relative 2021 position. Hydrogen also increases up the uncertainty axis.
- Renewable Energies, Energy Efficiency and Land and Water Availability remain Action Priorities as consistent factors in the region's energy transition strategy.

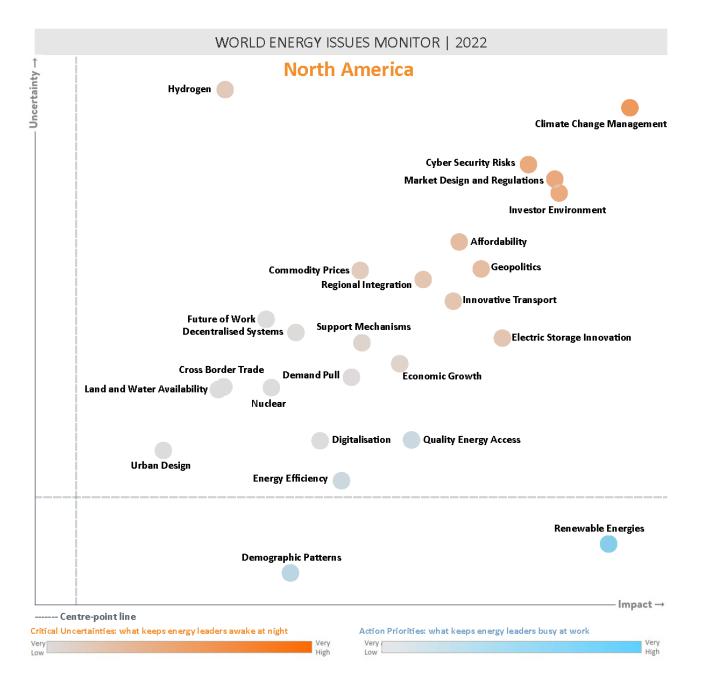
MEGS region-specific issues (from survey open text)



Critical Uncertainties	Action Priorities
Institutional reliability and continuity	Net Zero
Pandemic long-term impact	Recycling and waste management
Future of oil and gas demand	Circular Carbon Economy framework
Greenflation and financial crisis	Carbon policy
Transition cost and societal acceptance	Hydrogen economy
Regional integration	Innovative Transport



North America Highlights





North America Map Overview

- The North America Issues Map bucks the global trend –
 attributing the highest degree of impact and uncertainty
 to Climate Change Management, with Commodity
 Prices seemingly less of an issue than across the rest of
 the world. But uncertainty remains high, with the region
 following the global pattern of clustering uncertainty
 and few clear Action Priorities.
- Hydrogen makes an appearance as a critical issue, moving from low to high uncertainty compared with the 2021 map, and Renewable Energies remain as a defined Action Priority, with the degree of uncertainty reducing over the past year.

North America region-specific issues (from survey open text)



Critical Uncertainties	Action Priorities
Mexico	Mexico
Policy and regulatory framework	Private investment
Import dependence and energy security	United States
United States	• CCUS
Transition cost and societal acceptance	Electrification and grid transition
Future of gas	Canada
Carbon pricing	Aging existing hydro-electric infrastructure (generates a
Canada	significant portion of Canada's electricity)
Transition cost and societal acceptance	
Federal and Provincial policy alignment	



4 | Austrian Perspective







Austrian Map Overview

- In Austria, Commodity Prices and a Market Design and Regulations enabling the transformation of the energy system are seen as the most Critical Uncertainties, dominating the Austrian Issues map
- Technology trends such as Digitalisation (including Cyber Security Risks), Hydrogen, Electric Storage Innovation – stand out as further Critical Uncertainties.
- Renewable Energies, Innovative Transport Solutions and Energy Efficiency remain priorities for action as decisive factors for the success of the energy transition in Austria.

Region-specific issues Austria



Critical Uncertainties	Action Priorities
Market Design and Regulations	Renewable Energies
Cyber Security Risks	Energy Efficiency
Commodity Prices	Innovative Transport
Climate Change Management	Digitalisation
Electric Storage Innovation	Investor Environment



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