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World Energy Issues Monitor 2020

The Austrian Perspective in a Global and Regional Context

Meeting Global Visions

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Managing global Energy Transitions and enabling the benefits of sustainable energy to be shared by everyone is the most pressing and urgent leadership challenges of modern times.

The issues monitor survey is a practical and flexible tool that can be used by energy leaders as a reality check to define and clarify the current state of national, regional and global Energy Transitions.

It can also be used to forge a global energy leadership agenda that facilitates new and better collaborative innovation in meeting global vision and goals.

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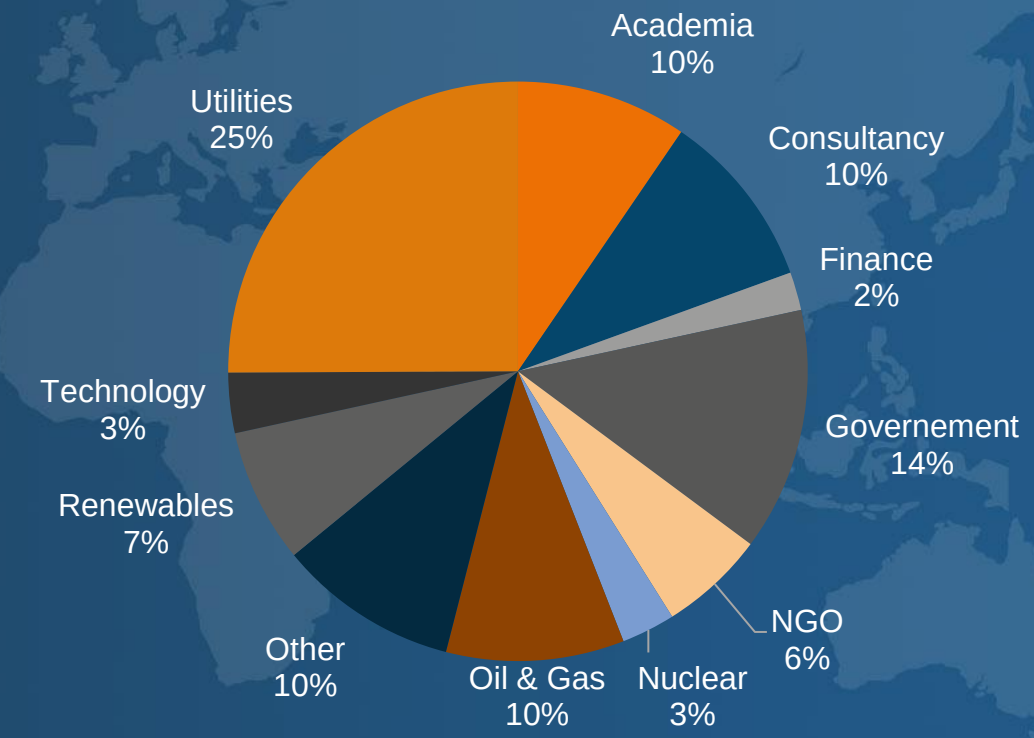
INSIGHTS FROM

3000 ENERGY LEADERS

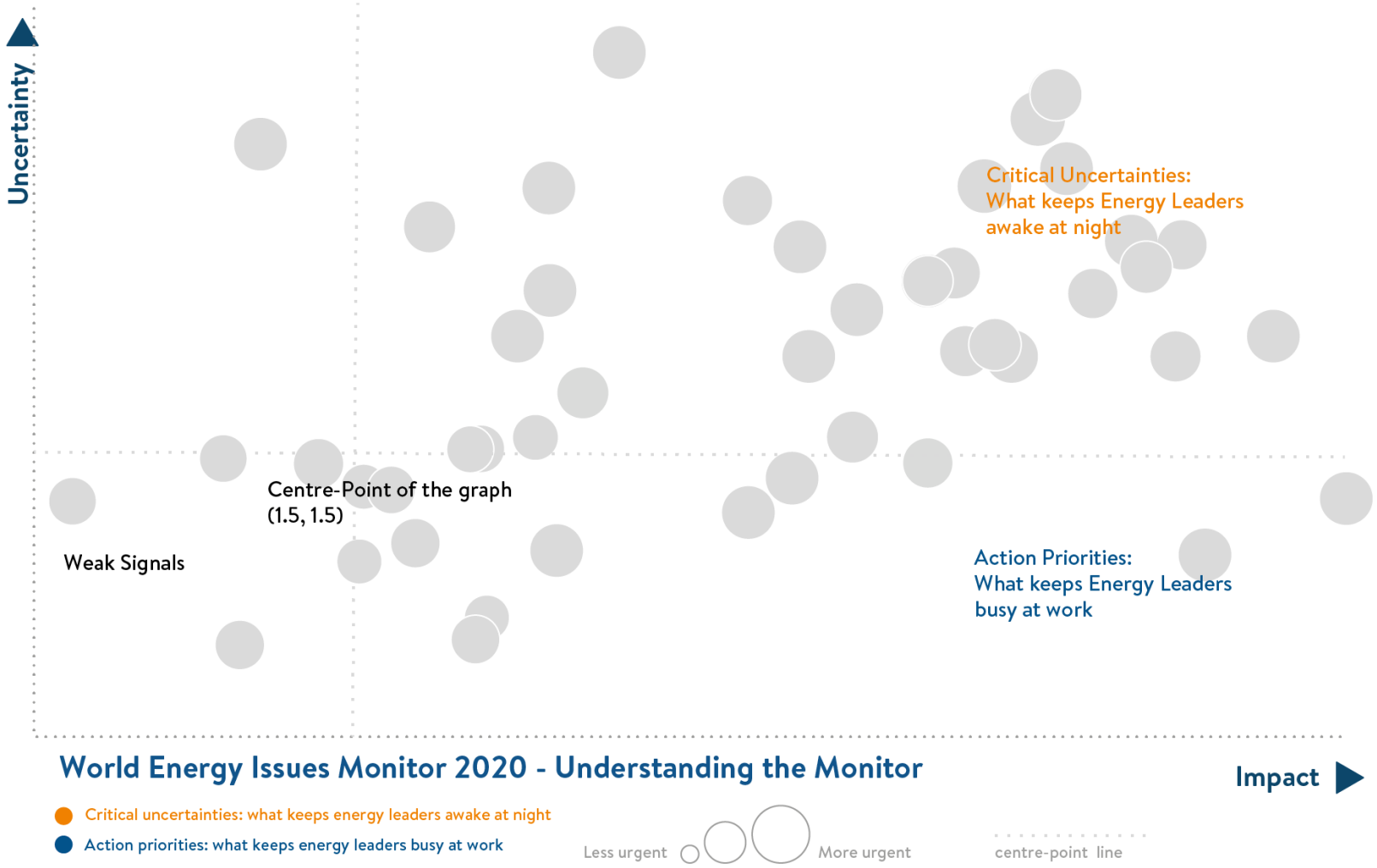
550 INDIVIDUAL CONSUMERS

104 COUNTRIES

Issues Monitor 2020 Responses
Sector Breakdown

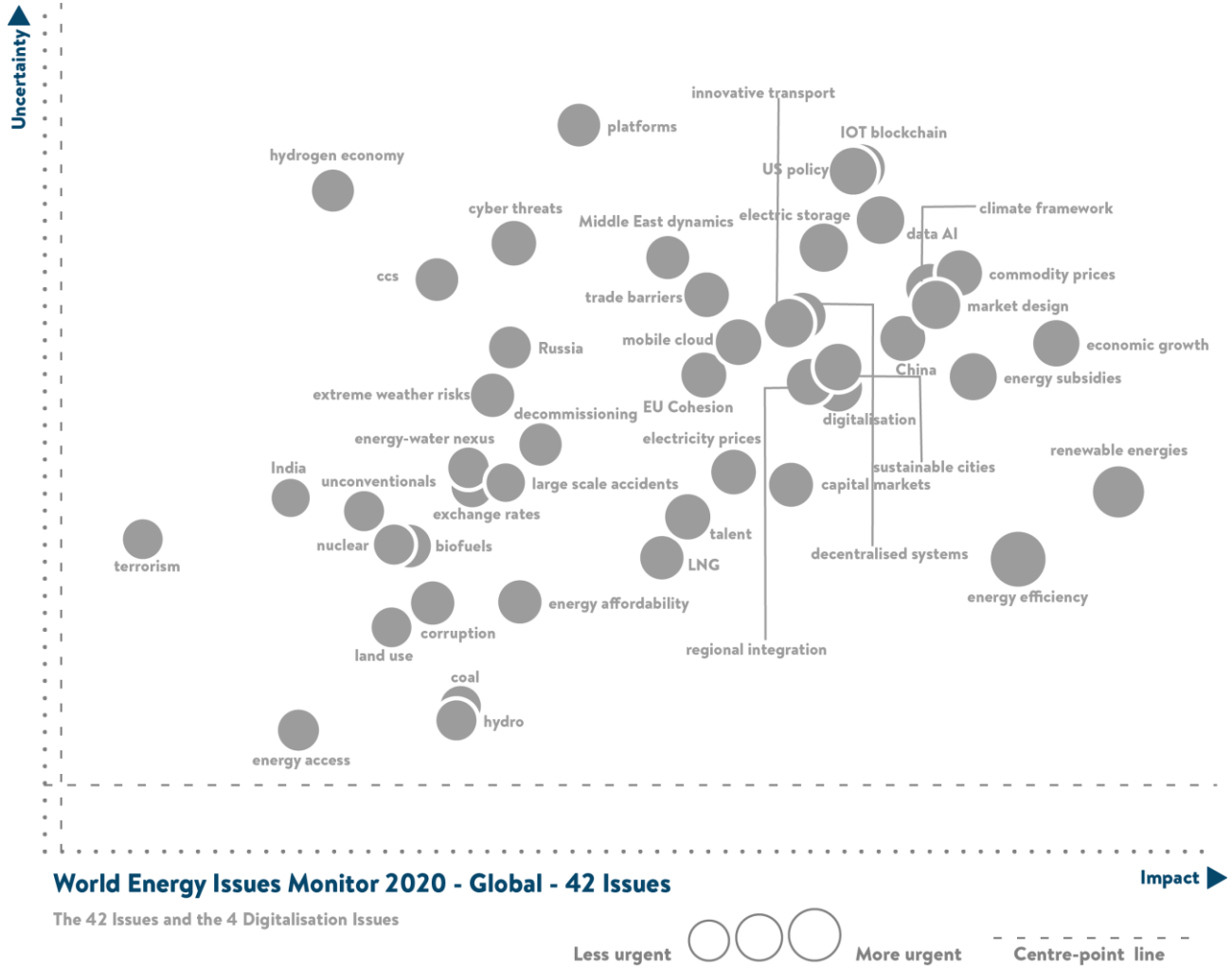


Understanding the Issues Monitor



- ✓ **Impact** – How strong do you perceive the potential impact of the issue (e.g. nuclear) to be on the energy sector in your country? This impact may be positive or negative.
- ✓ **Uncertainty** – How unsure are you about the selected issue in terms of its impact on the energy transition?
- ✓ **Urgency** – How soon do you think the energy sector in your country needs to react to the issue?

The 42 Energy Issues



- The Council has been conducting the Issues Monitor survey since 2009.
- The survey looks at 42 issues (and 4 digitalisation-specific issues) and how they are perceived by energy leaders from different parts of the world.
- These 42 issues show the progression of the energy transition in terms of the operation of the energy system.

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GLOBAL PERSPECTIVES

Reality Check

What's on the Agenda & What's Driving Uncertainties?

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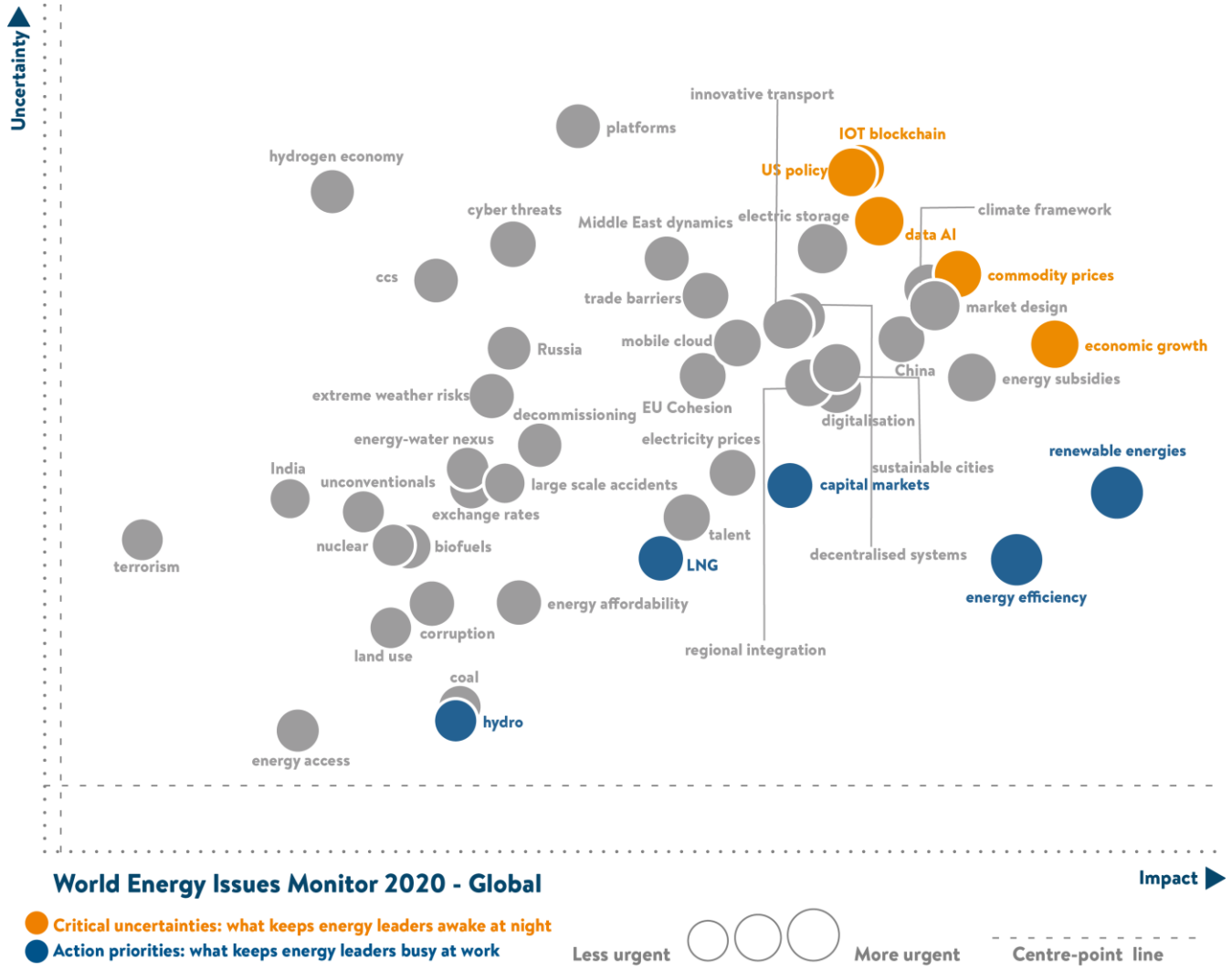

Critical Uncertainties

- Data AI
- Commodity Prices
- Economic Growth

Action Priorities

- Renewable Energies
- Energy efficiency
- Capital markets

Global Perspectives

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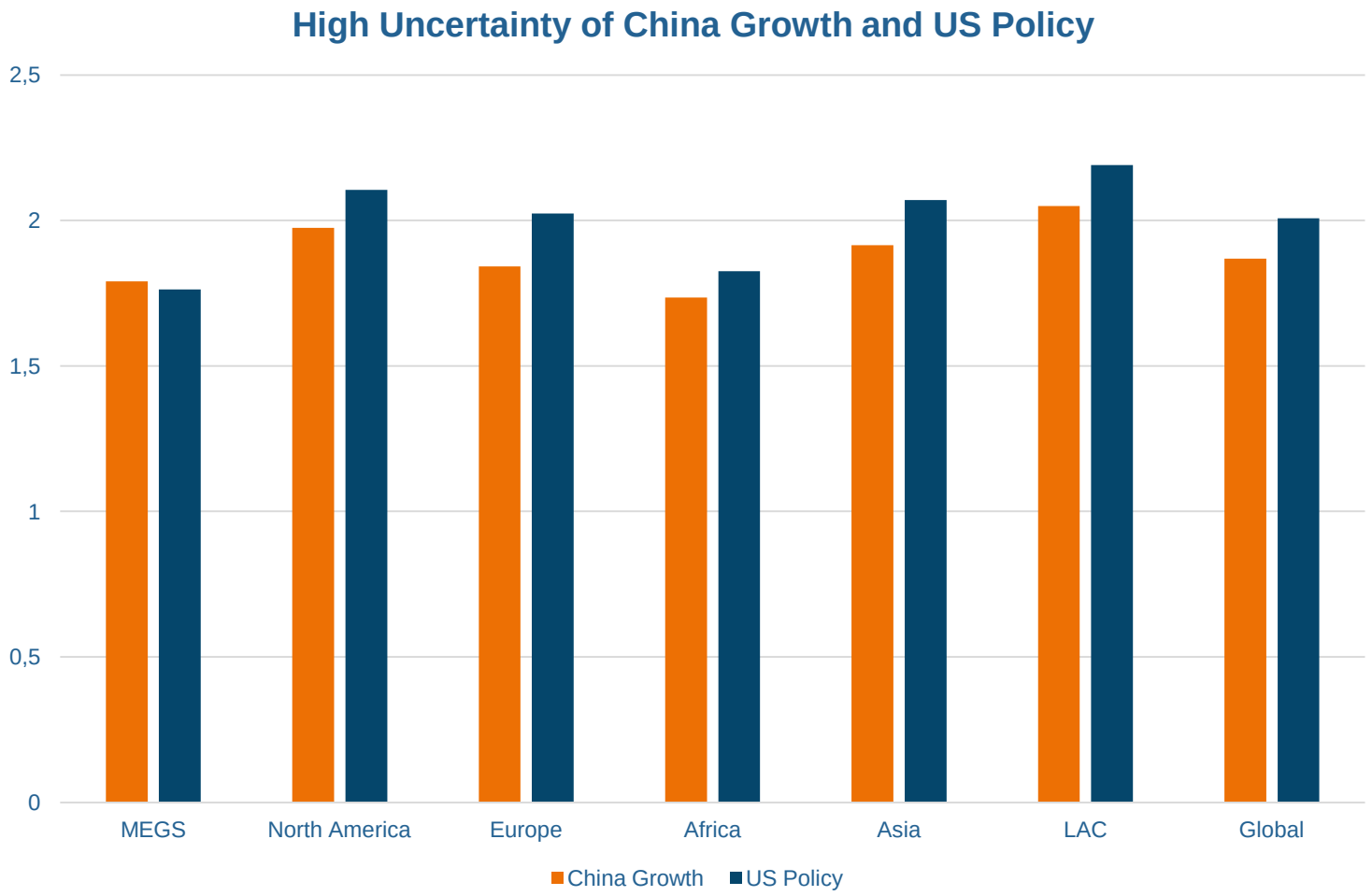
MACROECONOMICS and geopolitical issues define critical uncertainties

REGIONAL INTEGRATION is a "desired" means of improving energy security

TECHNOLOGY issues define action priorities

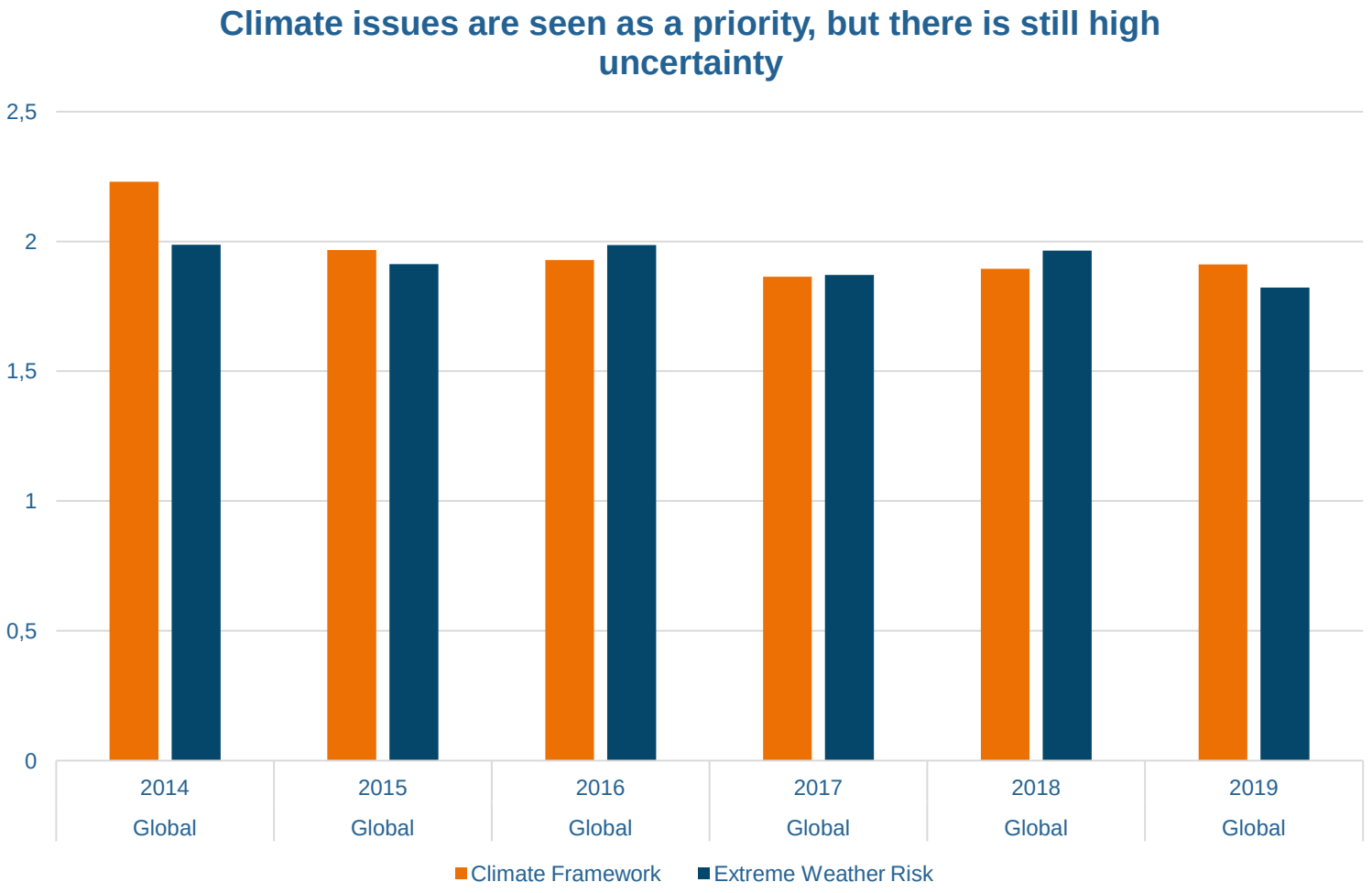
Macroeconomic and Geopolitical issues
China Growth and US Policy



The strained trade relations between the **United States and China** have led to higher uncertainty across all regions.

Macroeconomic and Geopolitical issues

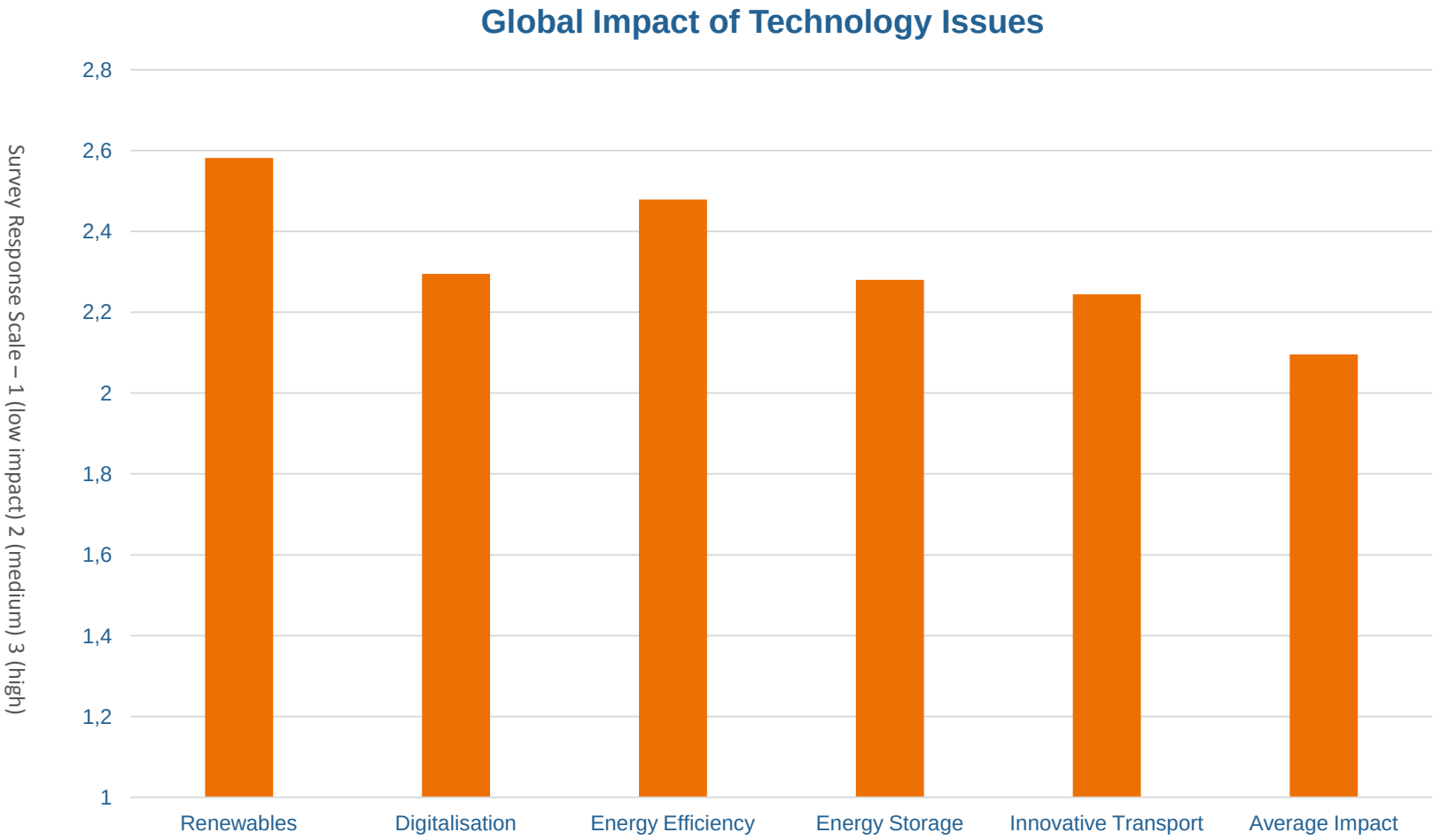
Climate Framework and Extreme Weather Risks



Uncertainty remains around the impact of intensifying **Extreme Weather Events** and the need to adopt **climate adaptation and mitigation** measures,

Technology issues

Renewables, Digitalisation, Energy Efficiency, Energy Storage, Innovative Transport



Countries are beginning to act with governments to design pathways for the wider adoption of **renewables, digitalisation, energy efficiency, energy storage**, and other **innovative technologies** as part of national energy transitions.

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KEY TRENDS

Tracking Issues

By looking at the time evolution of perceptions around energy issues and adding the views of 550 energy consumers in 50 countries on the Transition, we have observed three key trends:

- **Customers** are set to play a decisive role in the transition evolution in the coming decade as they become more empowered through technology and information
- **Carbon Capture & Storage** is being increasingly perceived as an important resource among Oil & Gas sector stakeholders
- **Nuclear power** has a promising future in the European energy mix

A NEW PULSE:
The 2020s may be the decade of the customer

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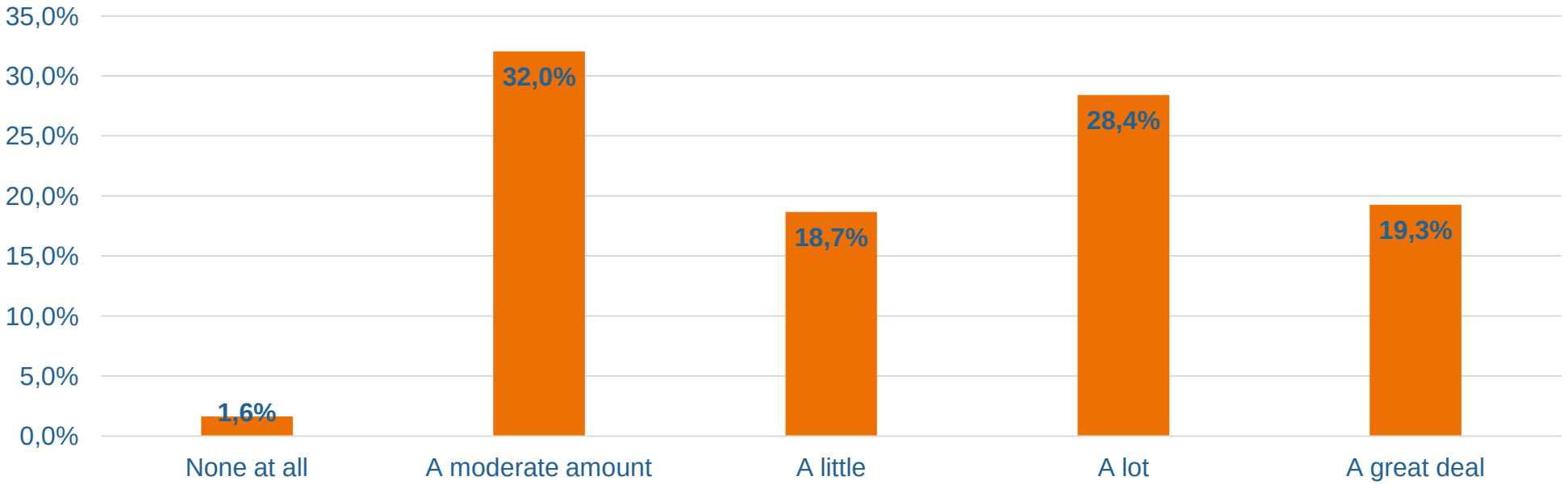
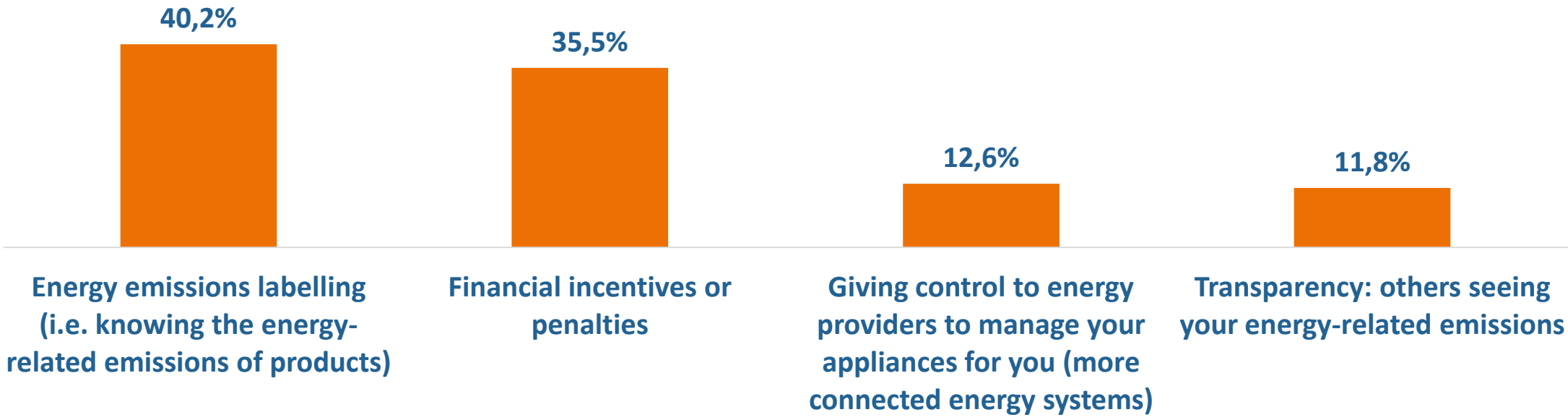
How much do you think your actions can help reduce emissions from energy?



Nearly 50% of respondents believe that their actions don't contribute to reducing emissions.

Customer Pulse

What would encourage you to better manage your energy consumption?



As energy systems are getting more efficient, costumers will become for the first time equipped with the necessary instruments to drive the direction of decarbonisation.

A DIFFERENCE IN OPINION:
Nuclear power is here to stay in Europe

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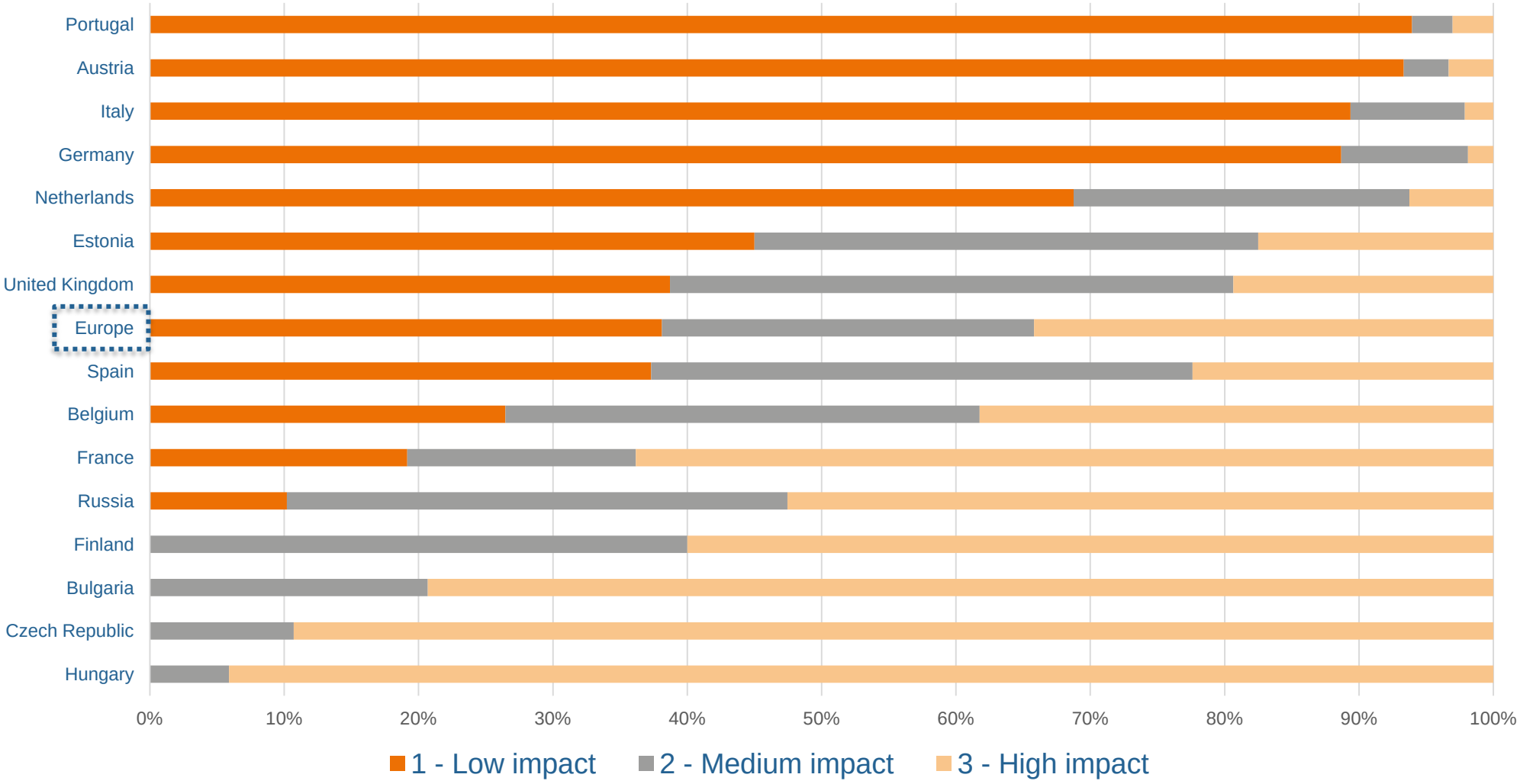
Impact of nuclear - disparities in selected countries in Europe



* The Europe Average in this chart is calculated from the responses of European countries in this Issues Survey. For a comprehensive list of countries included in the survey see page 168 of the full Issues Monitor Report.

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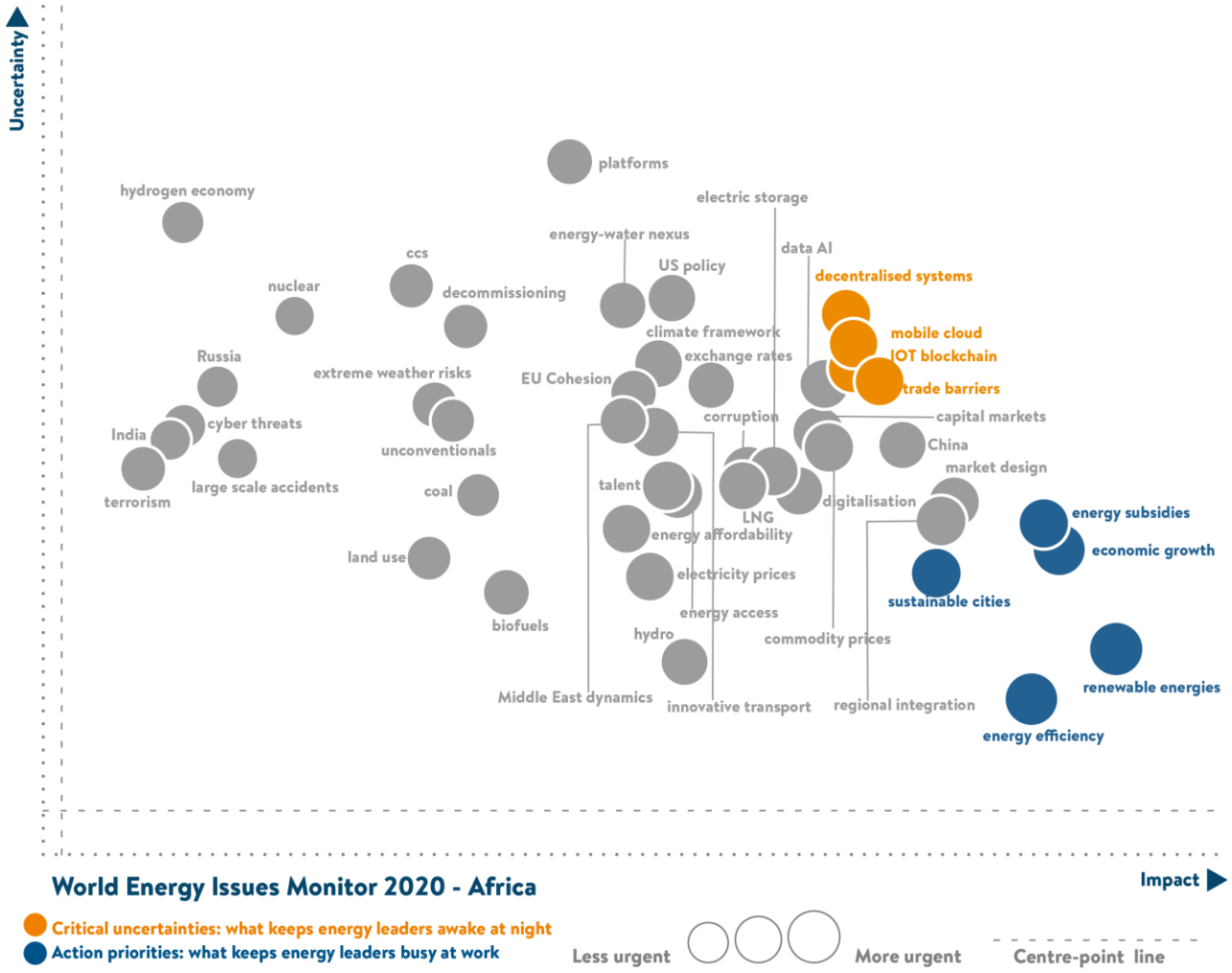
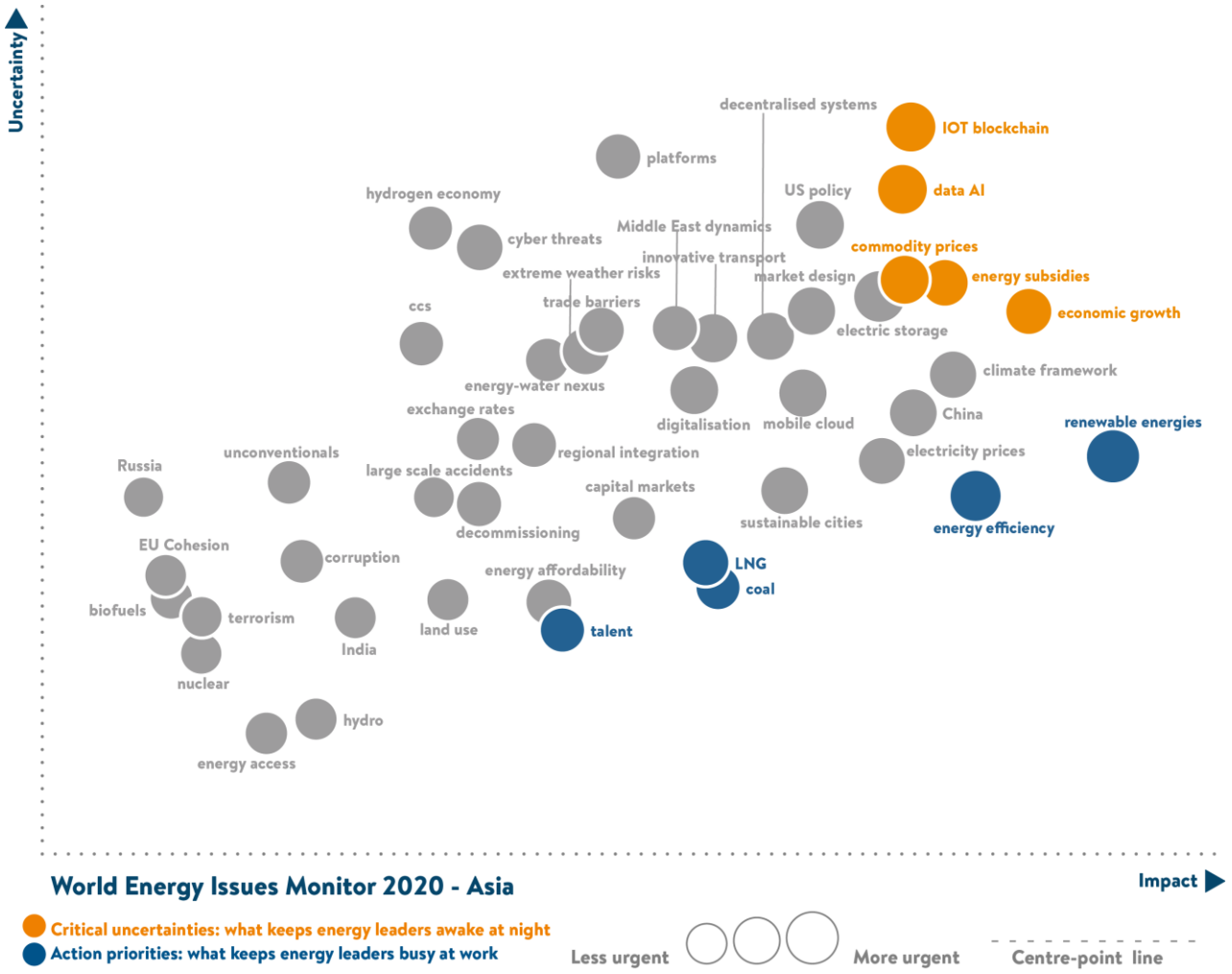
REGIONAL PERSPECTIVES

Regional Overview: AFRICA



- Africa energy leaders flag **Decentralised Systems, Mobile Cloud and Trade Barriers** as the three main Critical Uncertainties for the region.
- Action Priorities revolve around **Economic Growth. Energy Efficiency and Renewable Energies** remain the two priority issues.

Regional Overview: ASIA

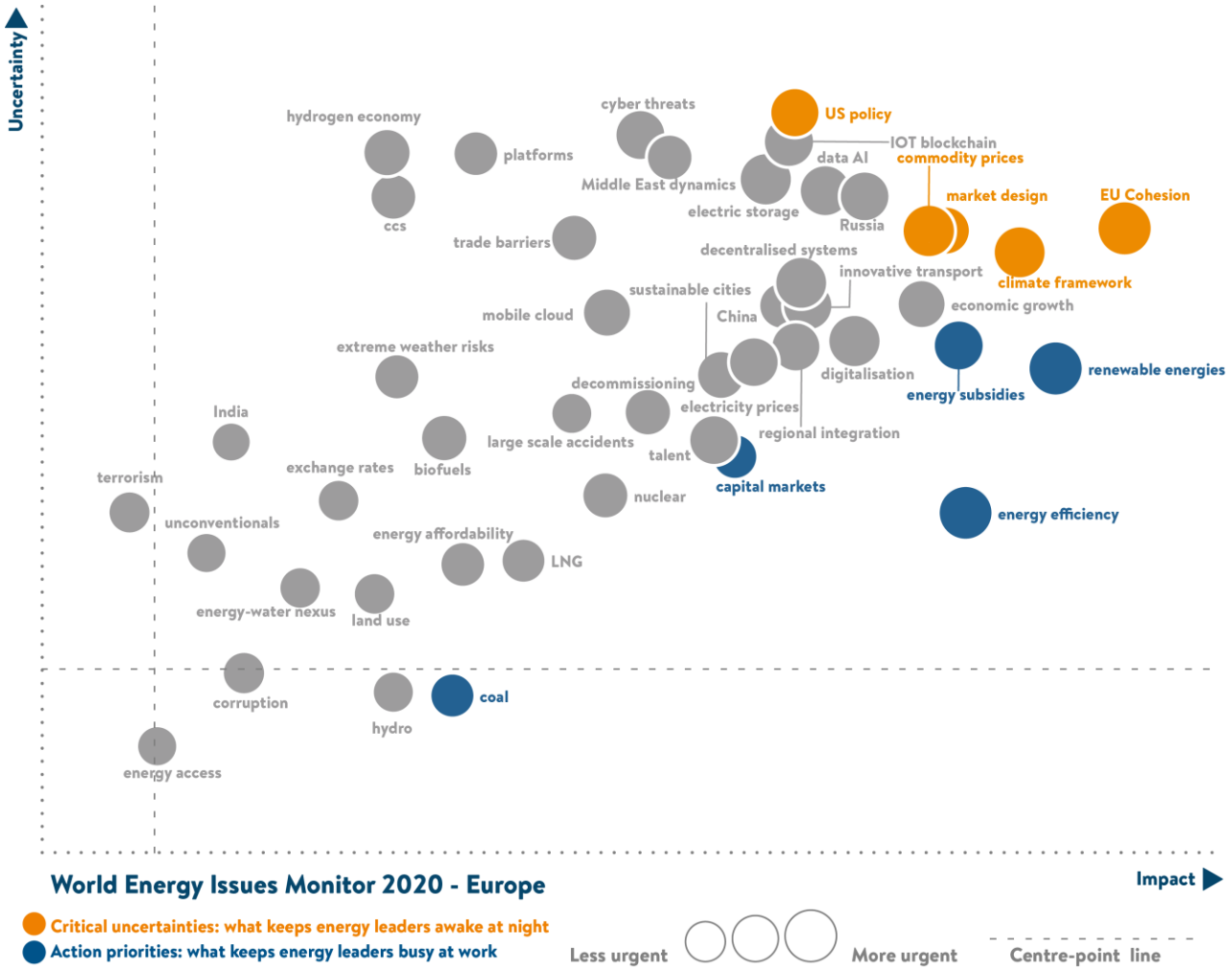


- Evolving dynamics around **US and China trade relations, Russia and the Middle East**'s role as fuel suppliers, and import dependence keep Asian energy leaders awake at night.

- Action Priorities are led by **decarbonisation and digitalisation** issues. Innovative technology is being adopted to address the energy security challenge while promoting economic development.

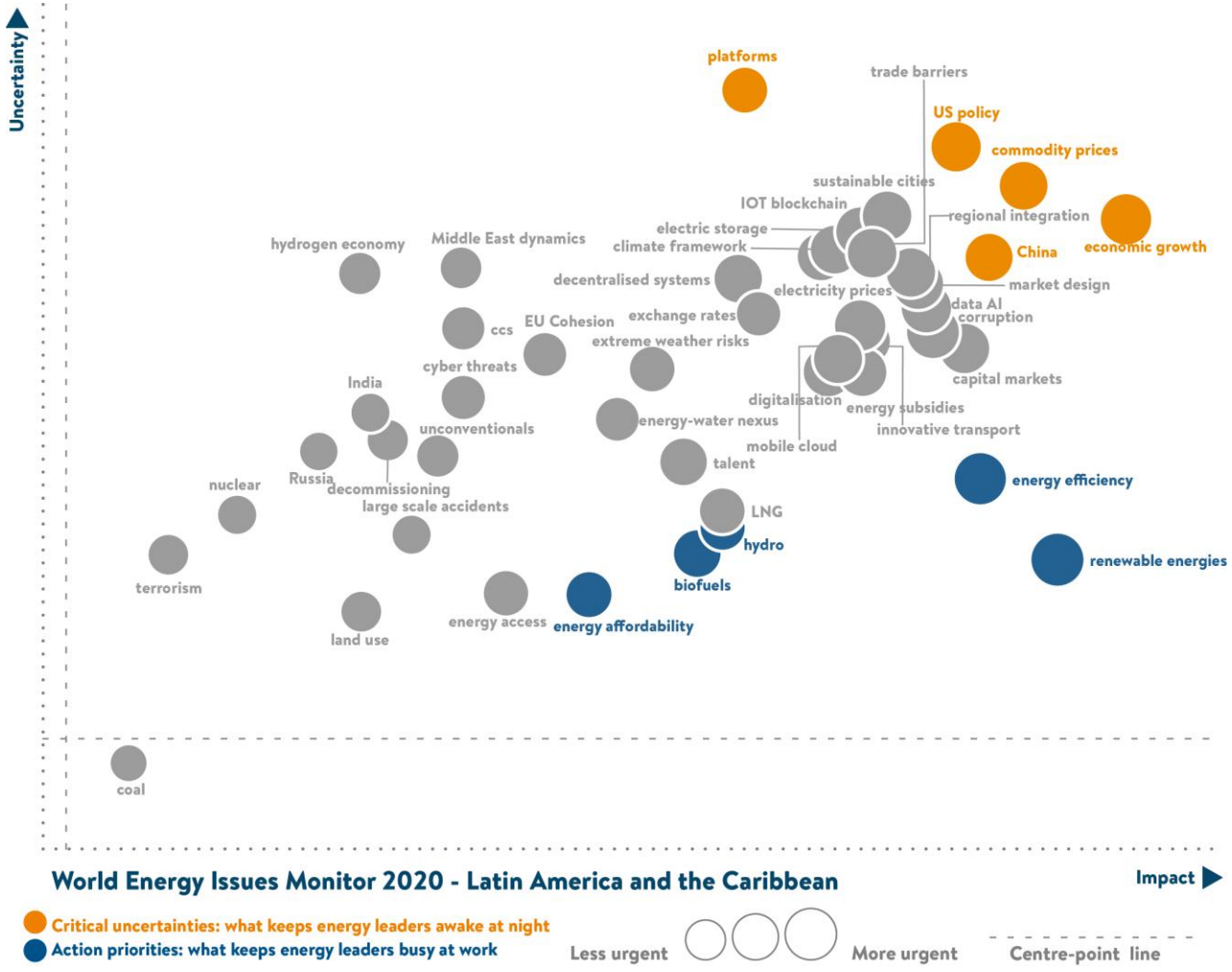
- The **Hydrogen Economy** issue is seen with increased impact in the region, particularly in China, Japan and Australia.

Regional Overview: EUROPE



- Europe's Critical Uncertainties revolve around **EU cohesion, a changing energy mix and energy security concerns** driven by commitments to the Climate Framework and EU decarbonisation policies.
- Among security challenges is the ability to **attract adequate investments** and, for some countries, overreliance on a single supplier or on a single fuel source.
- Action Priorities remain consistent with last year's efforts to **decarbonise and enhance the efficiency** of energy systems.

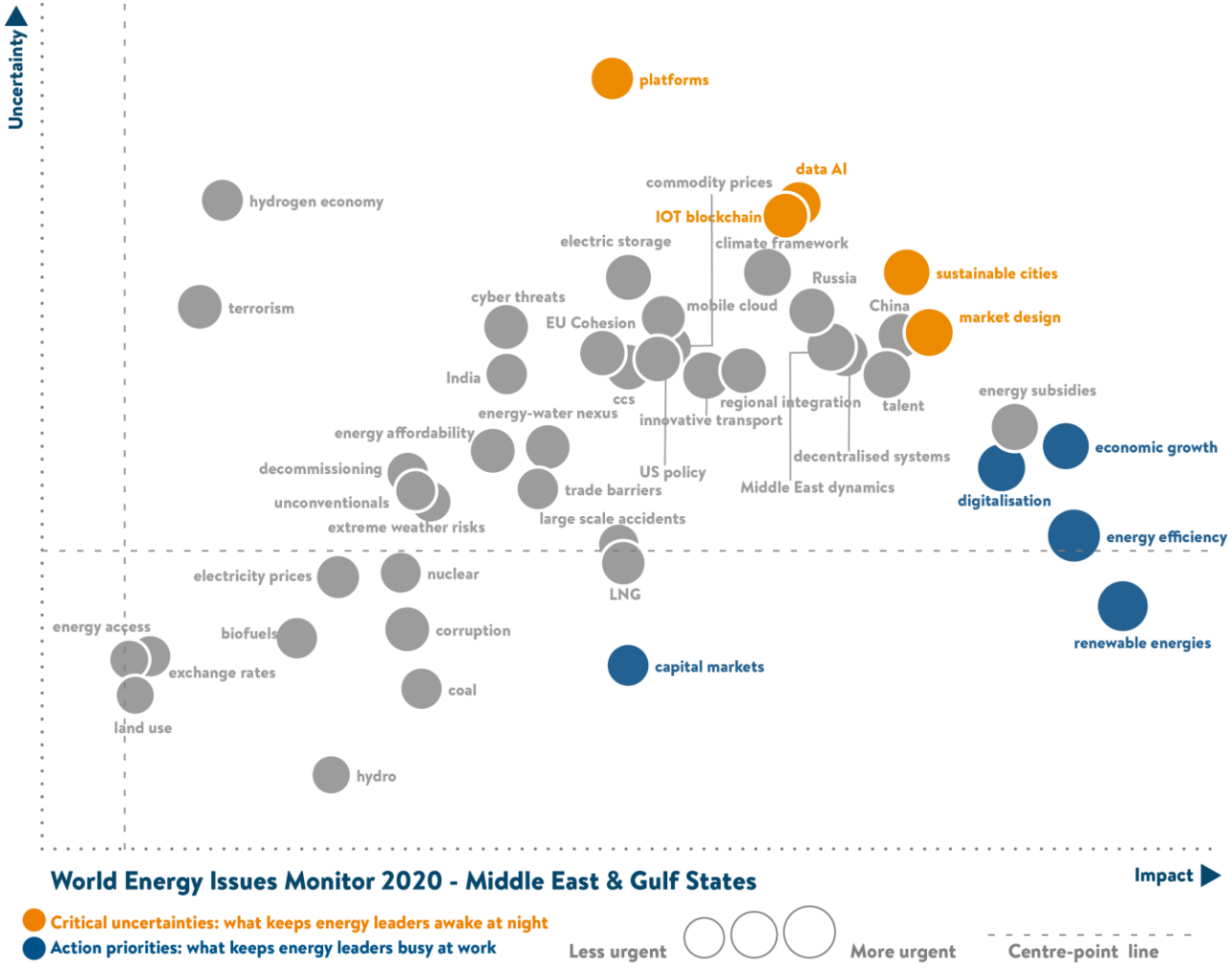
Regional Overview: LATIN AMERICA AND THE CARIBBEAN



- **Economic Growth and Geopolitics** define the Latin America and Caribbean's uncertainties landscape. **Digital technologies** are also perceived as Critical Uncertainties based on their potential to enhance environmental sustainability and improve public services in urban areas.

- Action Priorities are focused on **decarbonisation and renewable technologies**, which are seen as solutions for improved affordability and sustainability of the sector. **Energy Efficiency** appears as the big theme, with clear improvement measures being implemented across the region.

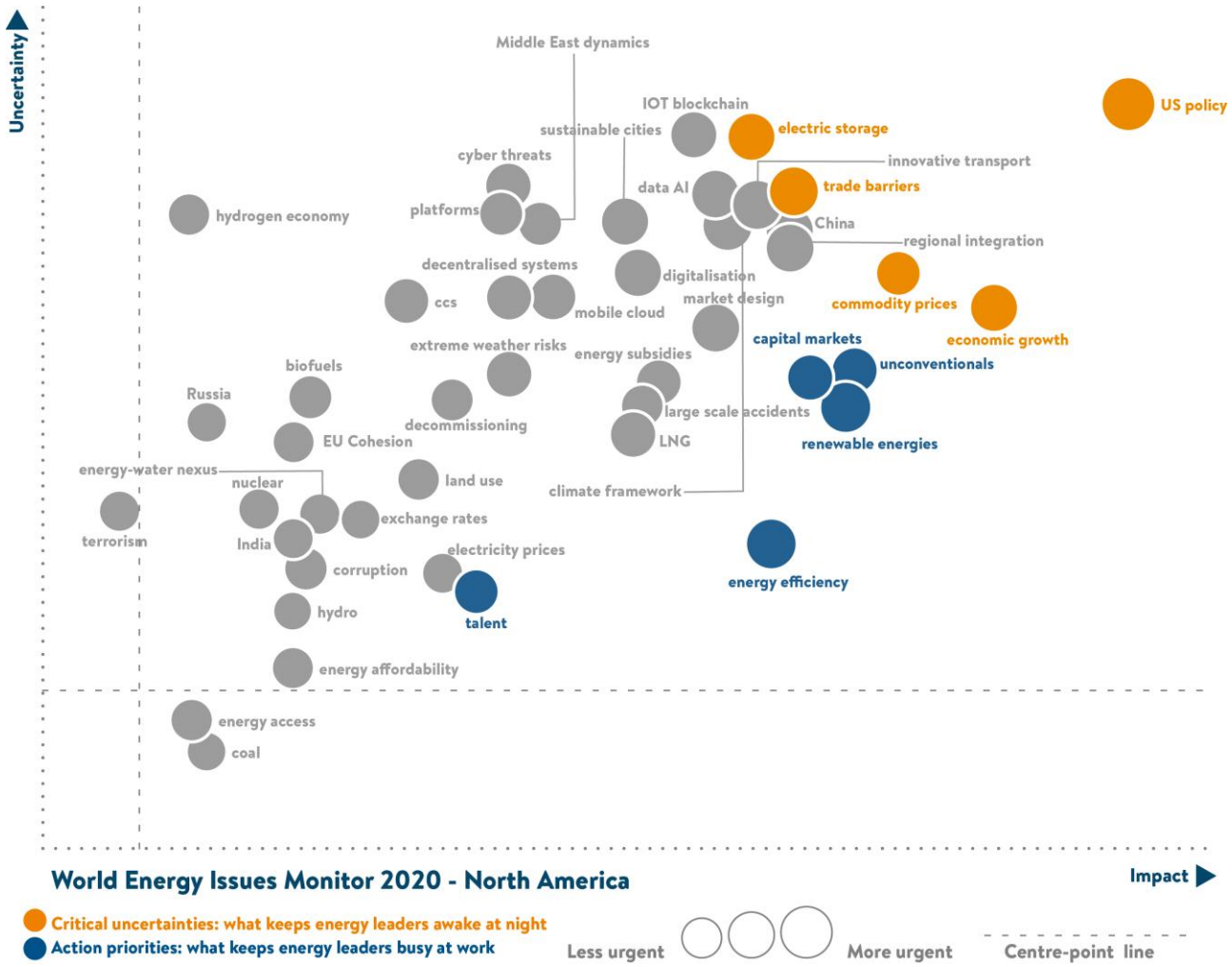
Regional Overview: MIDDLE EAST AND GULF STATES



- Energy leaders in the MEGS region are preoccupied with the growth in **digitalisation and technologies such as Data AI and IoT Blockchain**, which are seen as potential solutions for enhanced energy efficiency and reliability, but also raise the challenge of cyber threats.

- The key Action Priorities, **Energy Efficiency and Renewable Energies** are interrelated. Renewables deployment is expanding rapidly with the UAE leading the way.

Regional Overview: NORTH AMERICA



- **Geopolitics and macroeconomic issues** define the uncertainties landscape for Mexico, the US and Canada. While these concerns are primarily focused around **regional dynamics, China and the Middle East** also play an important role in defining perceptions.

- **Energy technologies** appear consistently as Action Priorities for the three **countries, with Energy** Efficiency playing the biggest role. **Regional integration** also influences perceptions in the Actions section.

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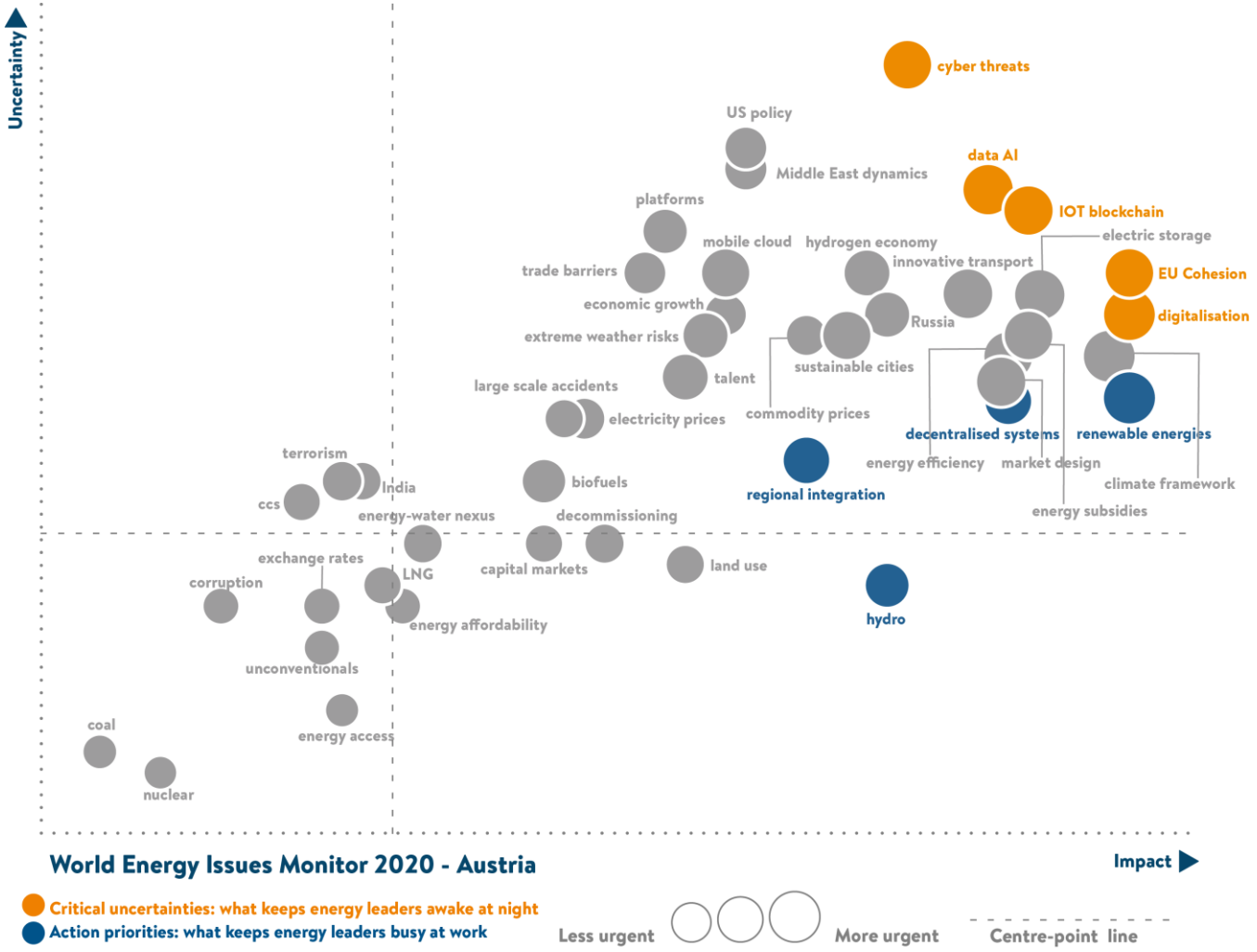
AUSTRIAN PERSPECTIVE

National Overview: AUSTRIA



- Austrian energy leaders flag **EU Cohesion, Digitalisation and IOT/Blockchain** as the three main Critical Uncertainties for the country.
- Action Priorities are led by **decarbonisation** and **decentralisation** issues.

Critical Uncertainties - AUSTRIA

EU Cohesion, Digitalisation and IOT/Blockchain

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- **EU Cohesion** continues to be perceived as a Critical Uncertainty, signalling the impact of diverging views such as the development of nuclear power, which Austria strongly opposes. Priority measures to support stronger cohesion in the Energy Union include energy efficiency, intelligent networks, renewable energies, environmentally friendly urban transport and infrastructure, climate change and adaptation research, including resilient infrastructures, risk prevention and risk management.

- **Digitalisation** is perceived with high uncertainty and impact. In Austria, 80% of metering points will be converted to new digital measuring devices by the end of 2020, and at least 95% of households will be equipped with smart meters by the end of 2022. This development will not only impact the energy suppliers' business models but will also enable a new dynamic between users and the entire energy system.

- **IoT/Blockchain and Data AI** are also perceived as Critical Uncertainties. A recent development in IoT/Blockchain is a partnership between Power Ledger and a subsidiary of one of Austria's top five largest energy utilities, Energie Steiermark, to deploy a peer-to-peer energy trading network in and around Graz, Austria's second largest city.

Action Priorities - AUSTRIA

Renewable Energies, Decentralised Systems, Hydro

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- **Renewable Energies** continues to be seen as an Action Priority but with higher uncertainty. Within the framework of #mission2030, Austria's Climate and Energy Strategy, the country plans to increase the share of renewable energy in gross final energy consumption to 45-50% by 2030 with 100% of total electricity consumption being covered by renewables. Additional funding has been allocated as an amendment to the Green Electricity Act passed in October 2019, to secure the expansion of wind, small hydro, biomass and biogas power generation.

- **Decentralised Systems** moves to the Action Priority section as increasing decentralisation requires new energy infrastructure. Investments in information technology, flexibility options and network infrastructure are top priorities. In addition to technical optimisation, the main focus is on legal and normative frameworks for feed-in and trading tariffs.

- **Hydro** is seen with increased impact. Hydropower is the biggest source of electricity generation in Austria today against 61% in 2018. Projects with a capacity of slightly more than 2,800MW and a production of around 3,200GWh are planned. In addition, installations with total generation capacity of 1,000MW and 330GWh are being considered by electricity utilities. However, implementation depends on whether it is possible to create solid regulatory conditions, for example through a new Renewable Energies Expansion Act.

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Thank you!