

World Energy Issues Monitor 2017

Exposing the New Energy Realities

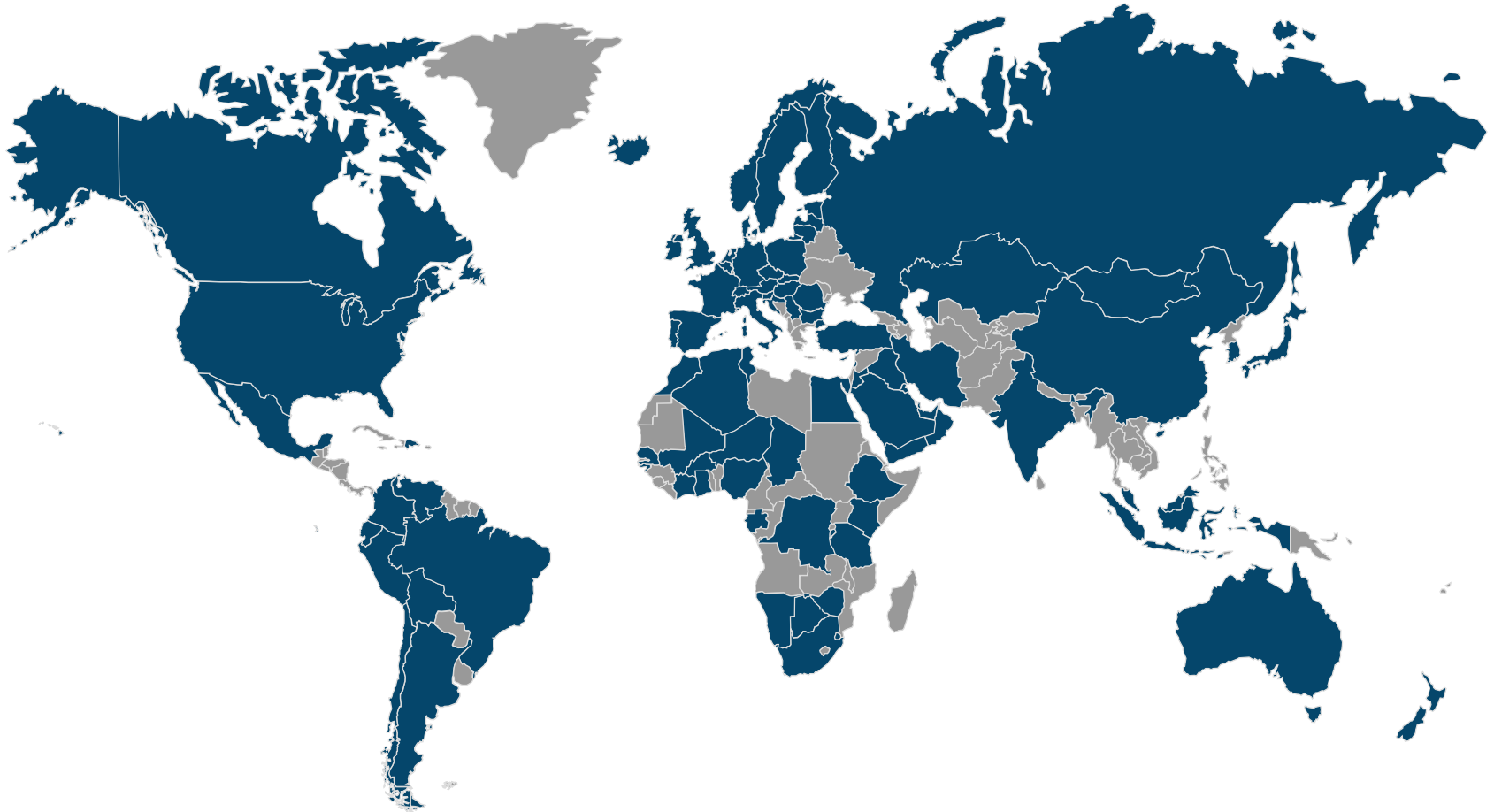


The Issues Monitor illustrates that innovation issues such as digitalisation, decentralisation, innovative market design or electric storage rapidly gain traction, while a more difficult growth context and new physical and digital risks are posing ever greater threats to the energy sector.

- Christoph Frei, Secretary General

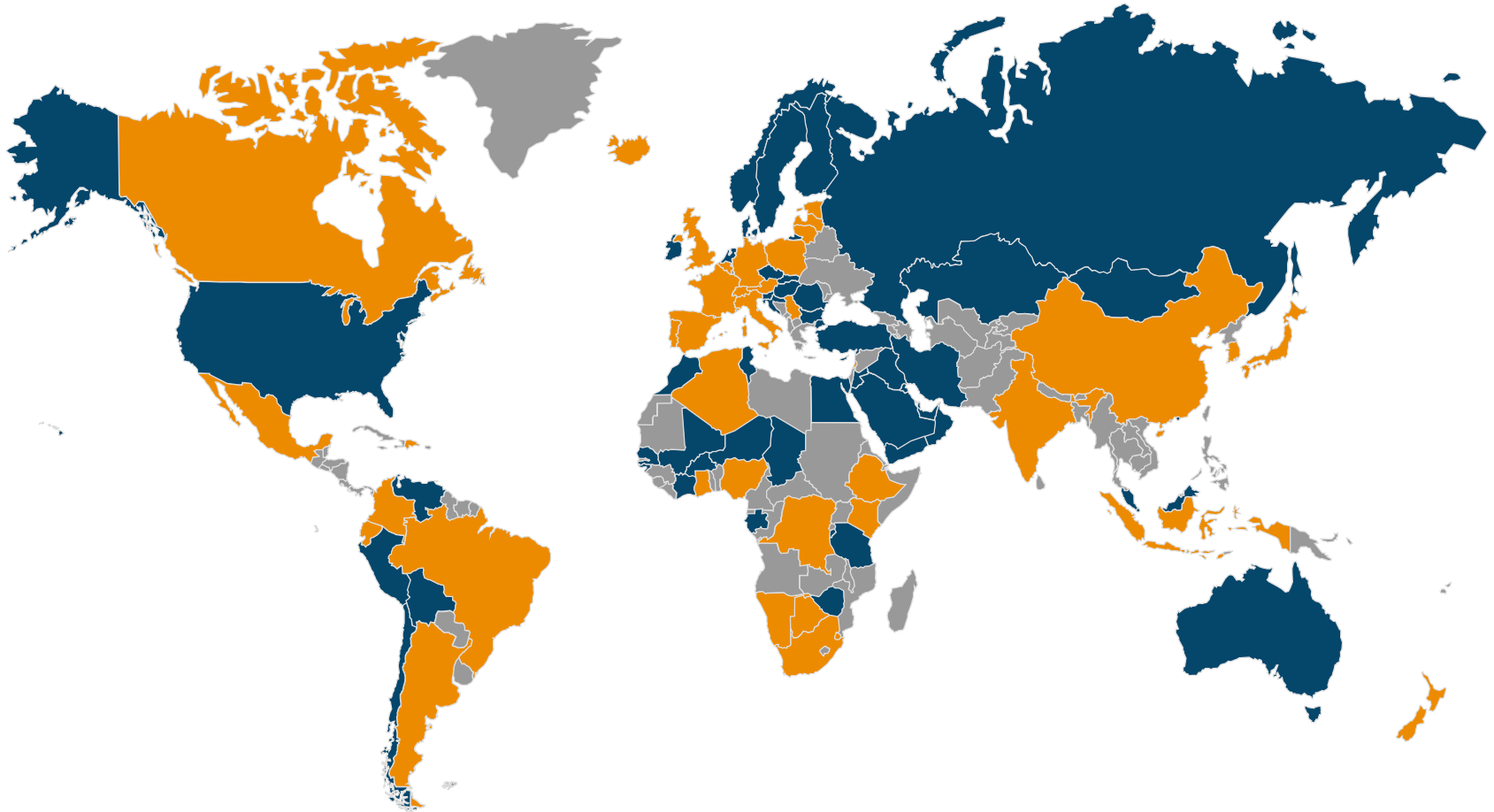
Issues Monitor 2017

Responses in 95 countries



Issues Monitor 2017

Including over 35 national deep-dives



Issues Monitor 2017

Key Facts

- 8th annual Issues Monitor process
- Responses from over 1,200 energy leaders - CEOs, Ministers and experts across the Council network
- Additional responses from the Future Energy Leaders
- Feedback in 95 countries
- National deep-dives and analyses in over 35 countries (from the six original pilots in 2012) driven by national member committees

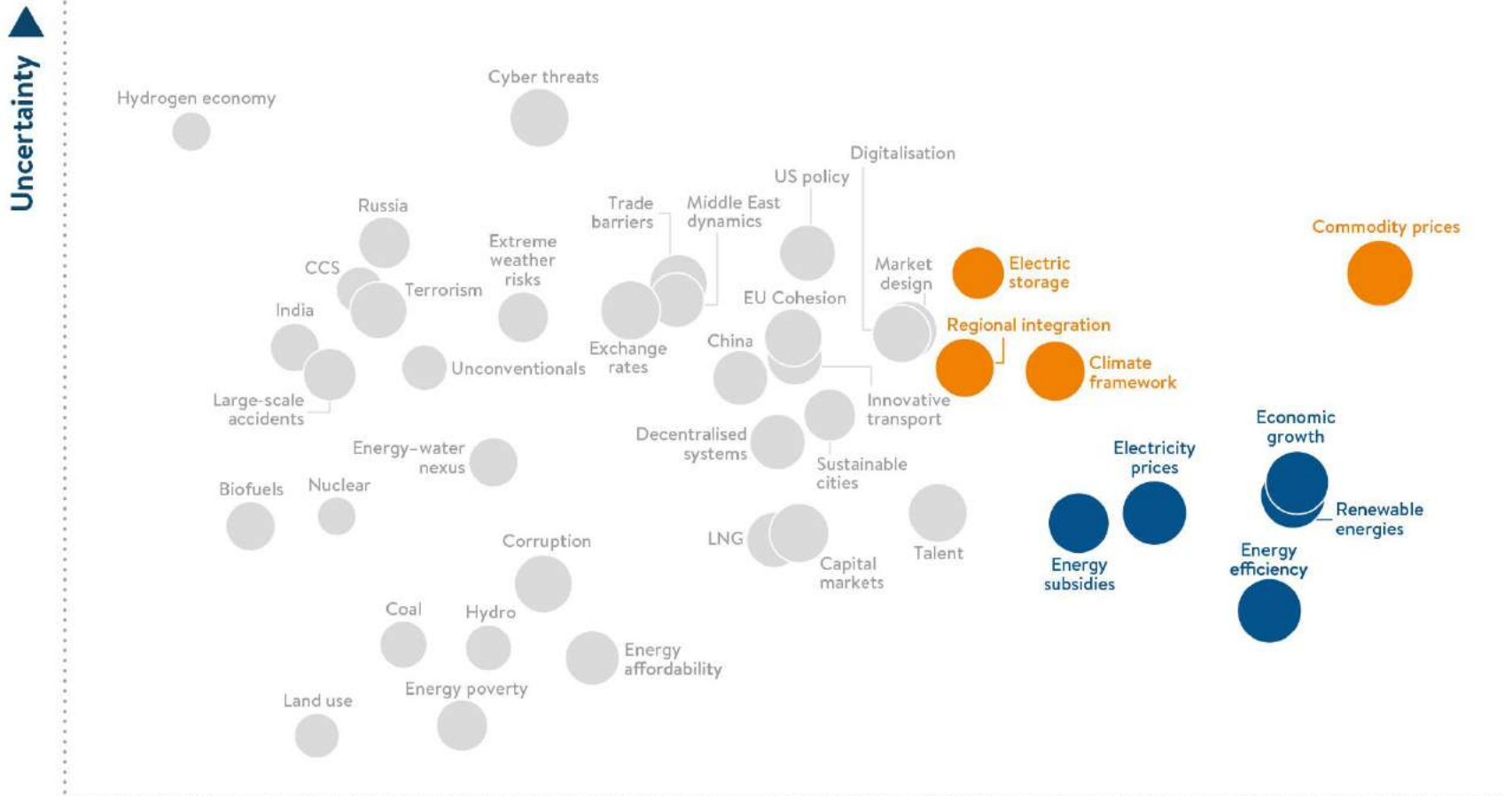
Section 1

Key Findings

Issues Monitor 2017 - Key Findings

- **Innovation issues** continue their rise up the agenda
- **Commodity price volatility** remains number one critical uncertainty
- A shift in **economic growth** – slow global growth puts greater uncertainty around primary energy demand
- Shifts in **geopolitical power and regional integration** – due to a renewed focus on US policy, Brexit and uncertainty over EU cohesion
- New physical and virtual risks – **cyber threats** are posing ever greater threats to the energy sector in the OECD, while **extreme weather** keeps leaders awake in the non-OECD

Commodity Prices and Economic Growth top the 2017 agenda



World Energy Issues Monitor 2017 - Global

● Critical uncertainties: what keeps energy leaders awake at night

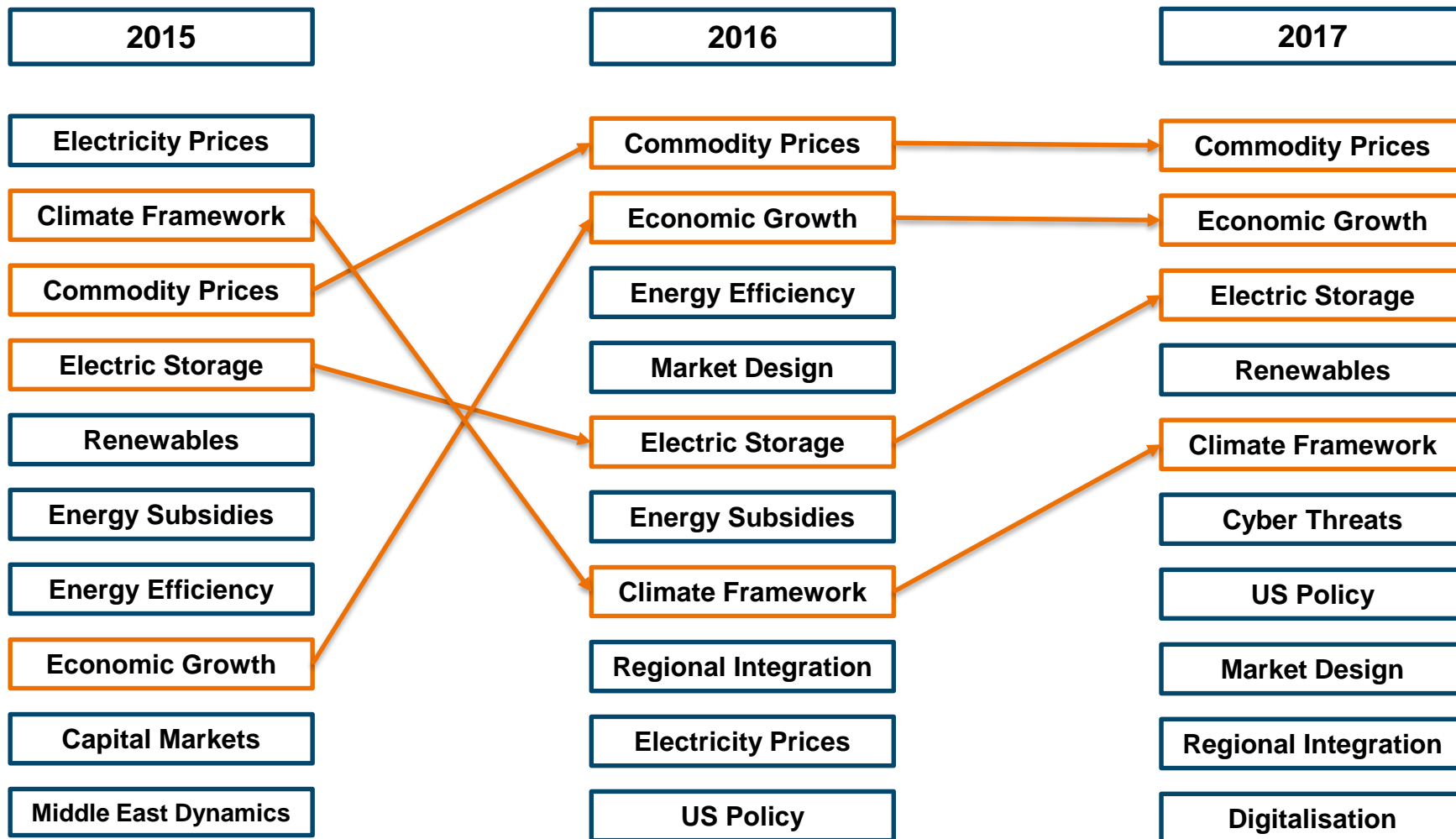
● Action priorities: what keeps energy leaders busy at work

Less urgent More urgent

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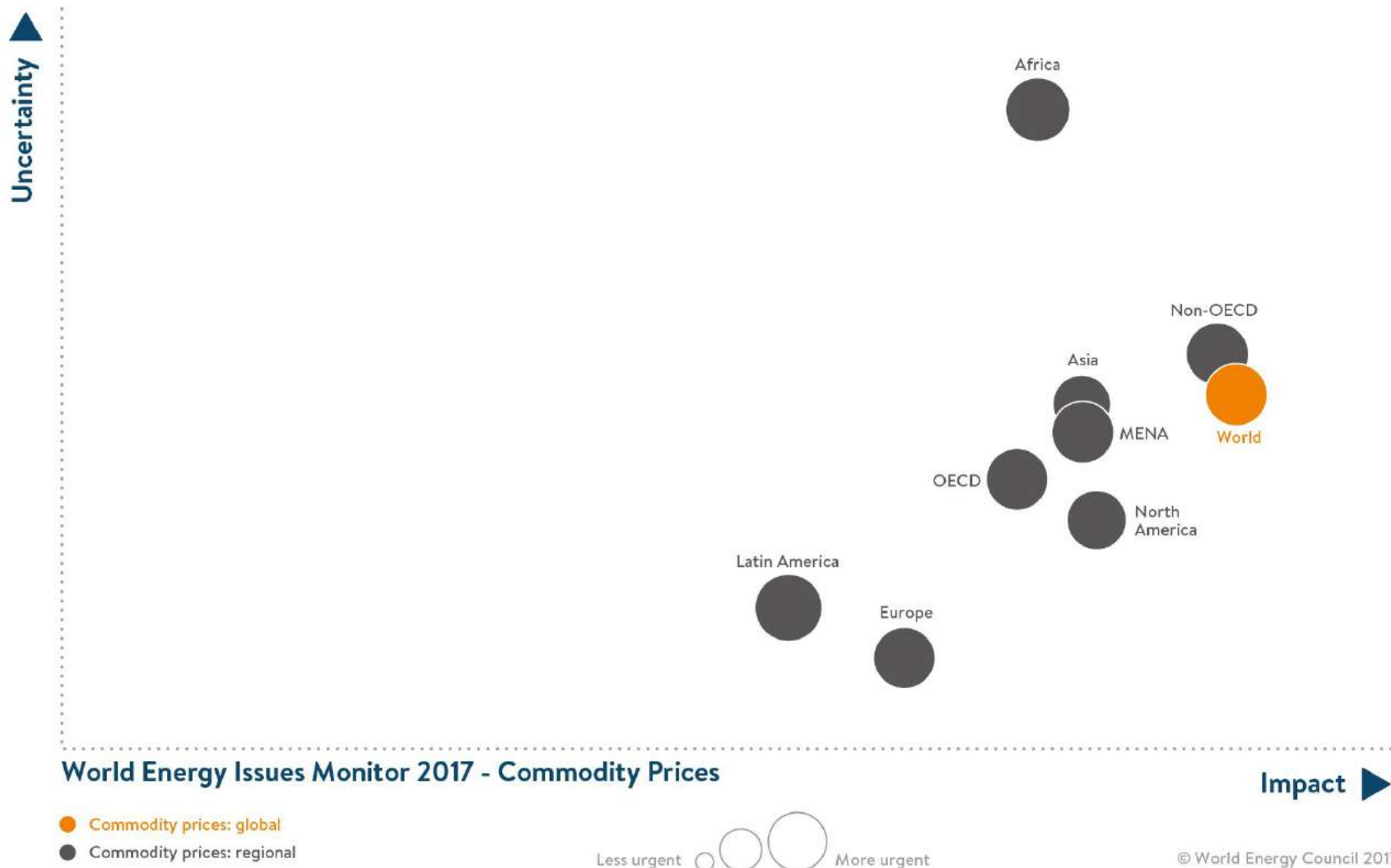
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The Top Ten: 2015 to 2017

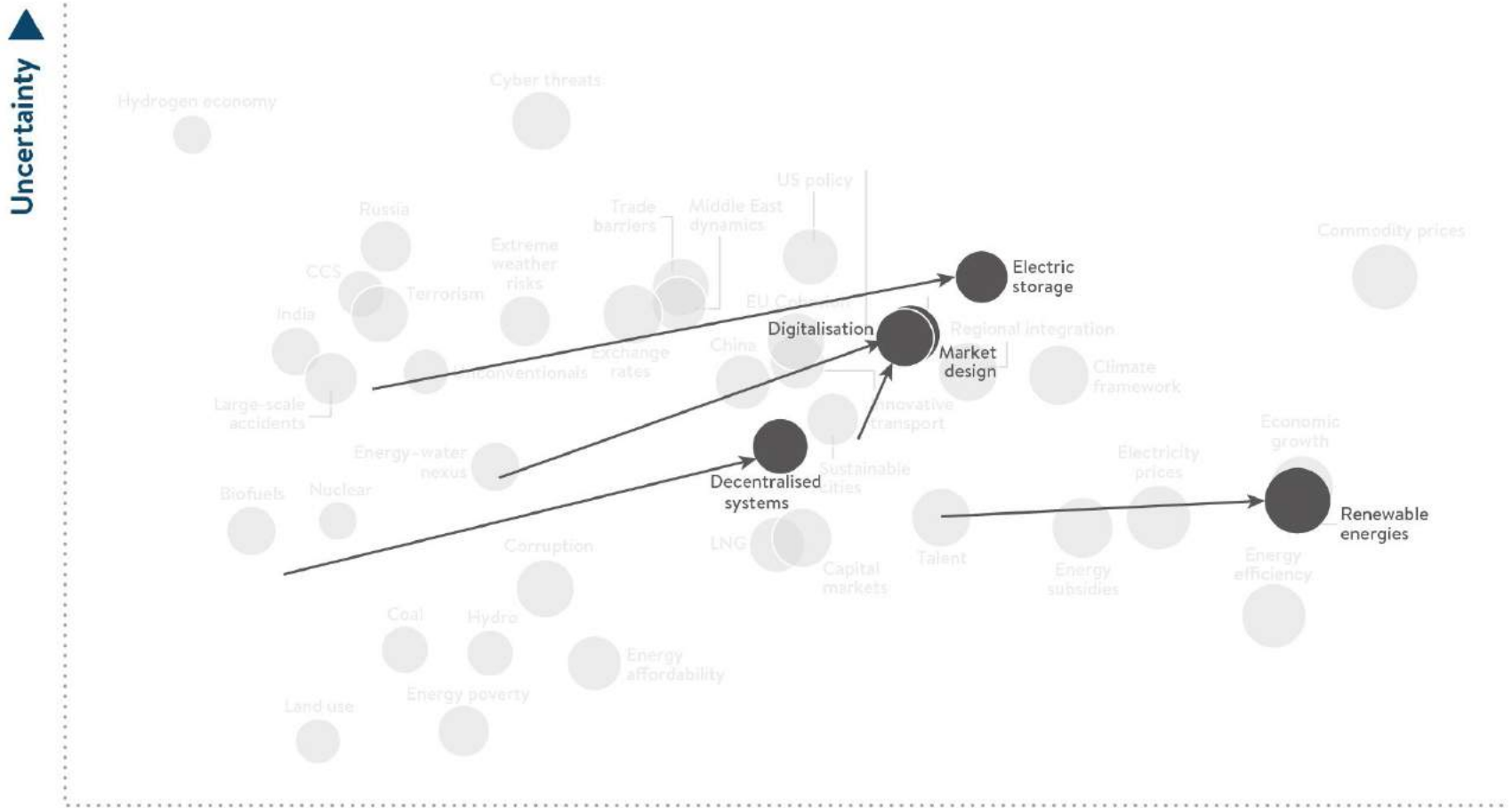


* Based on combined score for impact, uncertainty and urgency

Commodity prices are high-impact for every region



Increasing belief that innovation issues pose today's greatest opportunity



World Energy Issues Monitor 2017 - Global - The Rise of The Innovation Cluster

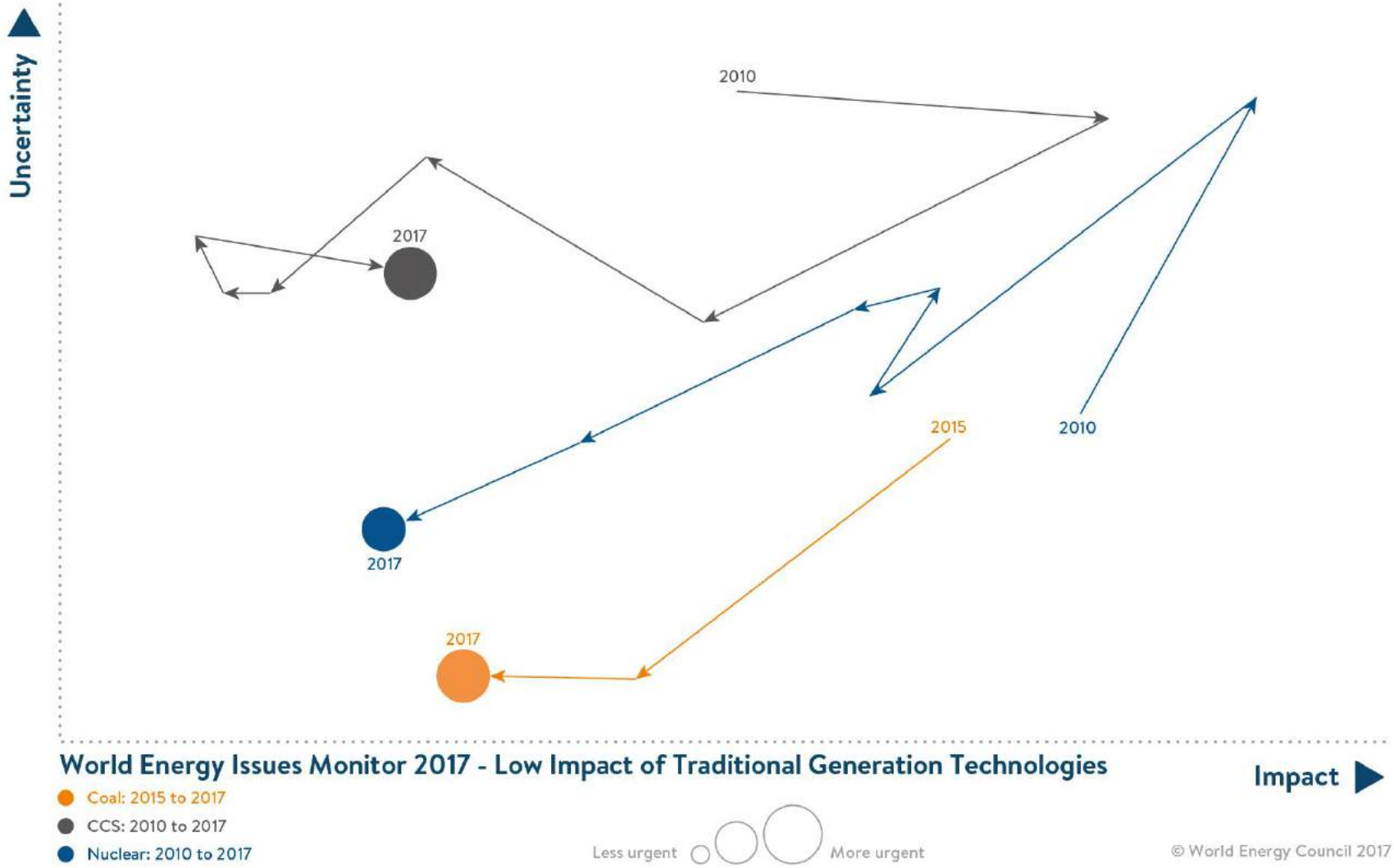
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● Timetracking of selected issues from 2010 to 2017

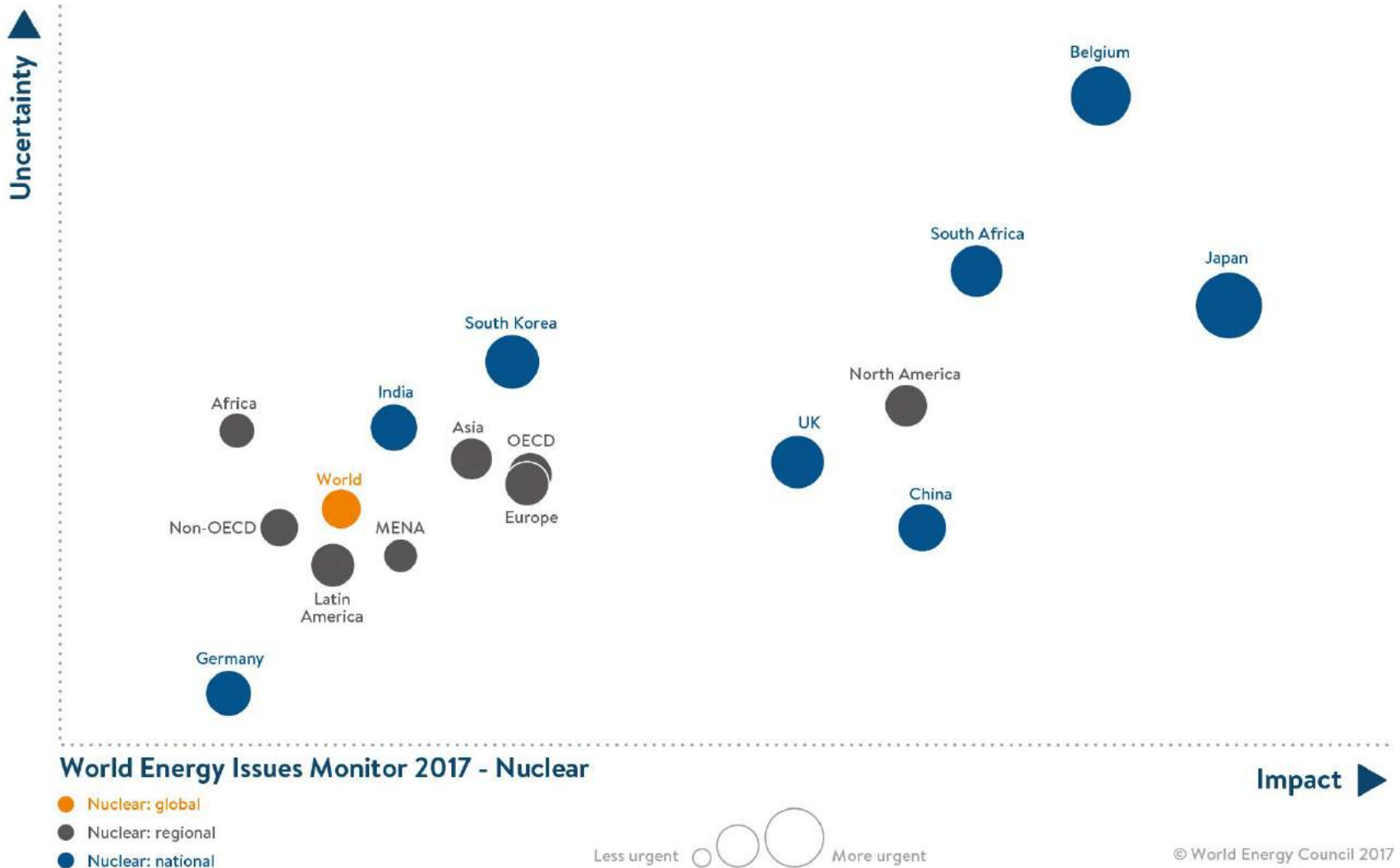
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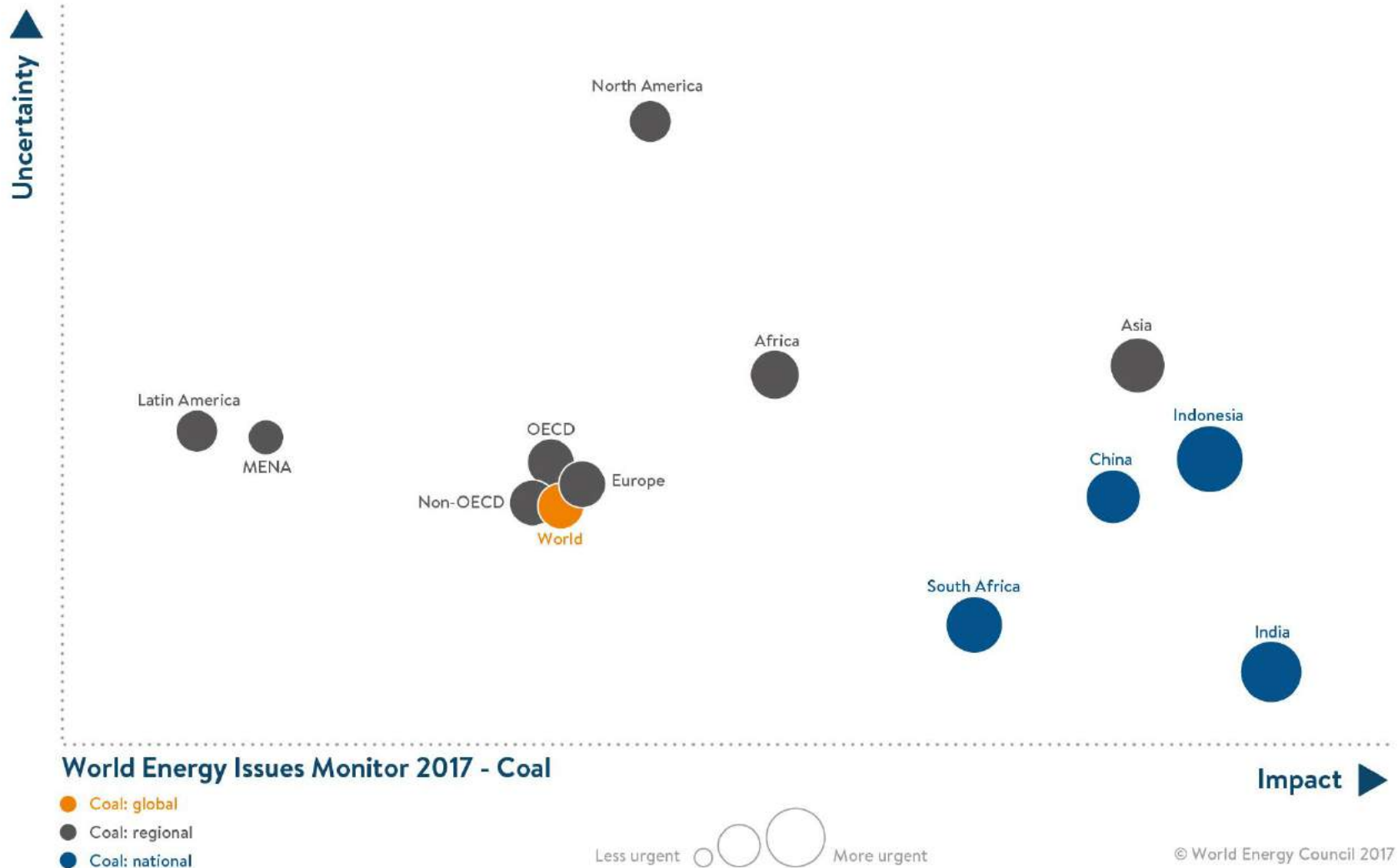
More 'traditional' generation technologies lose out: CCS, Coal and Nuclear



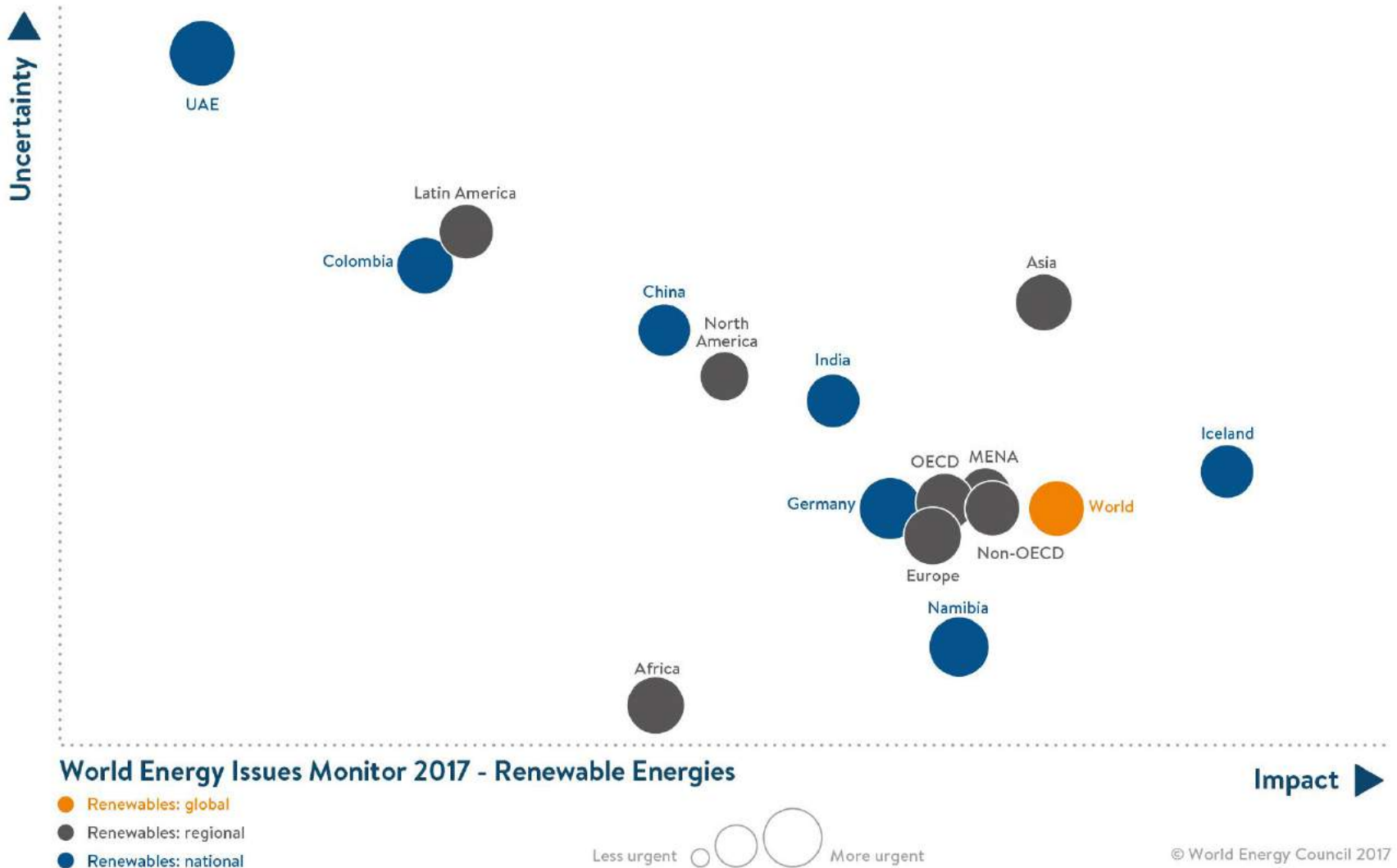
But with a Highly Diverse Regional Importance – Nuclear



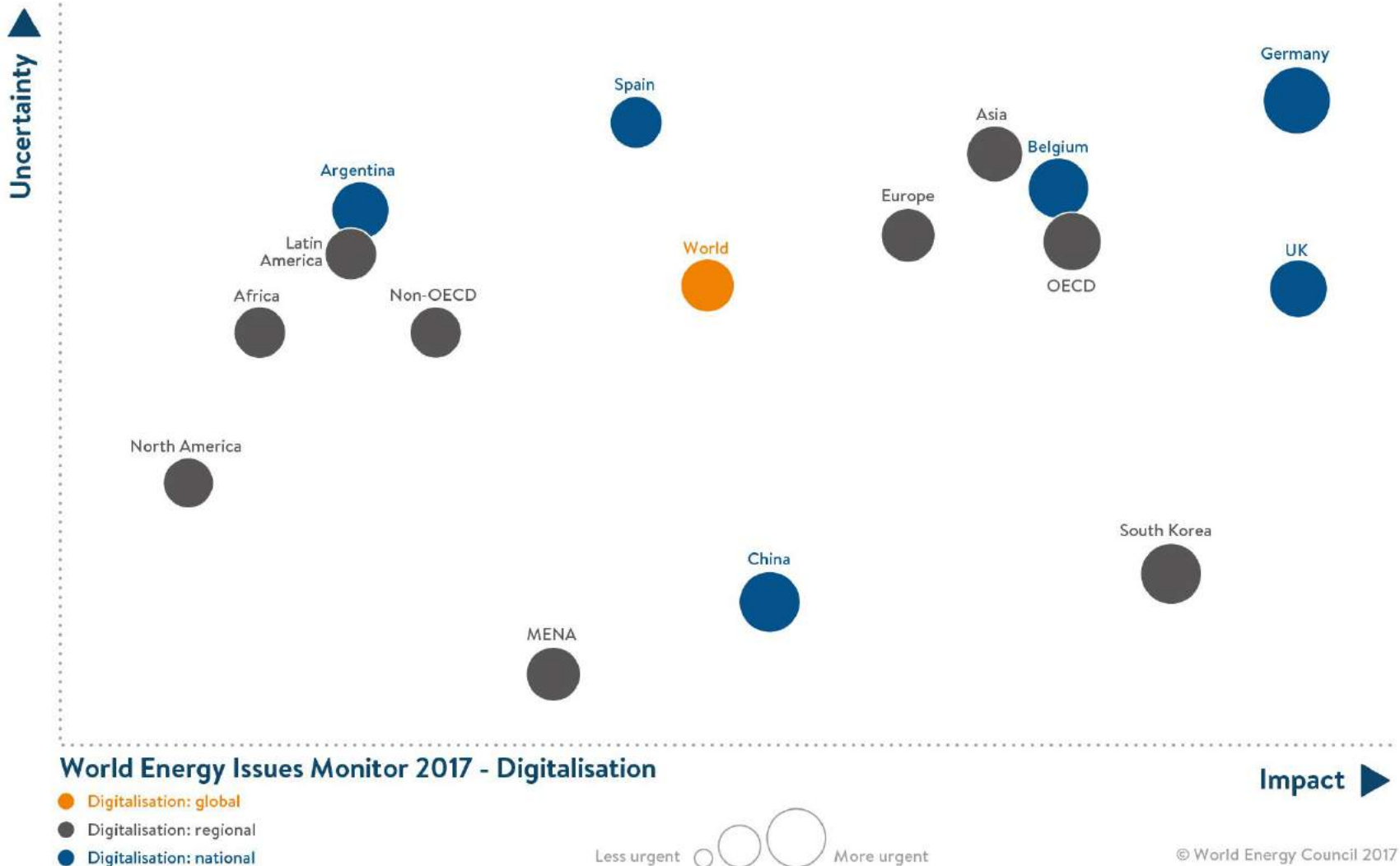
But with a Highly Diverse Regional Importance - Coal



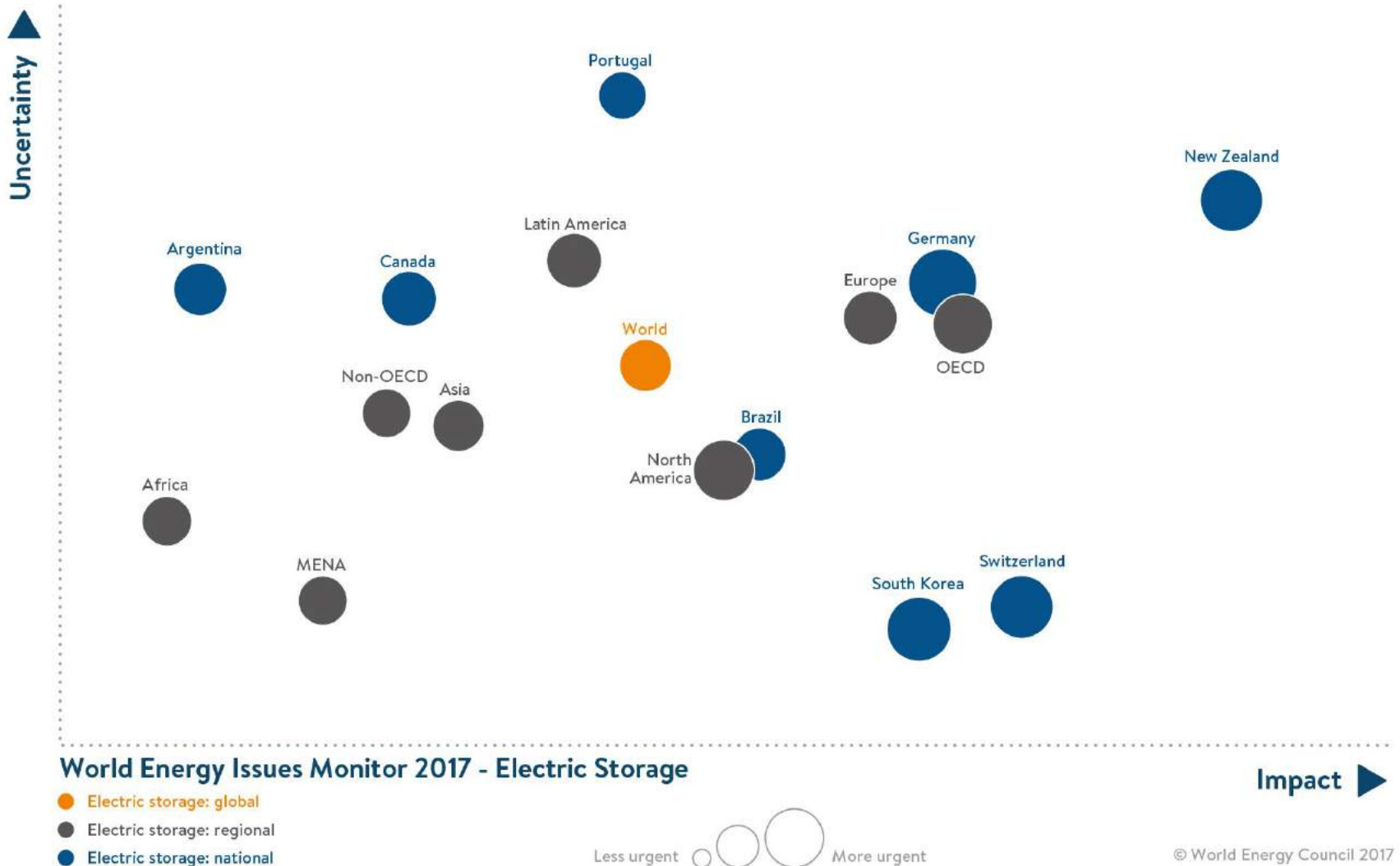
Renewable Energies are perceived with increasing certainty



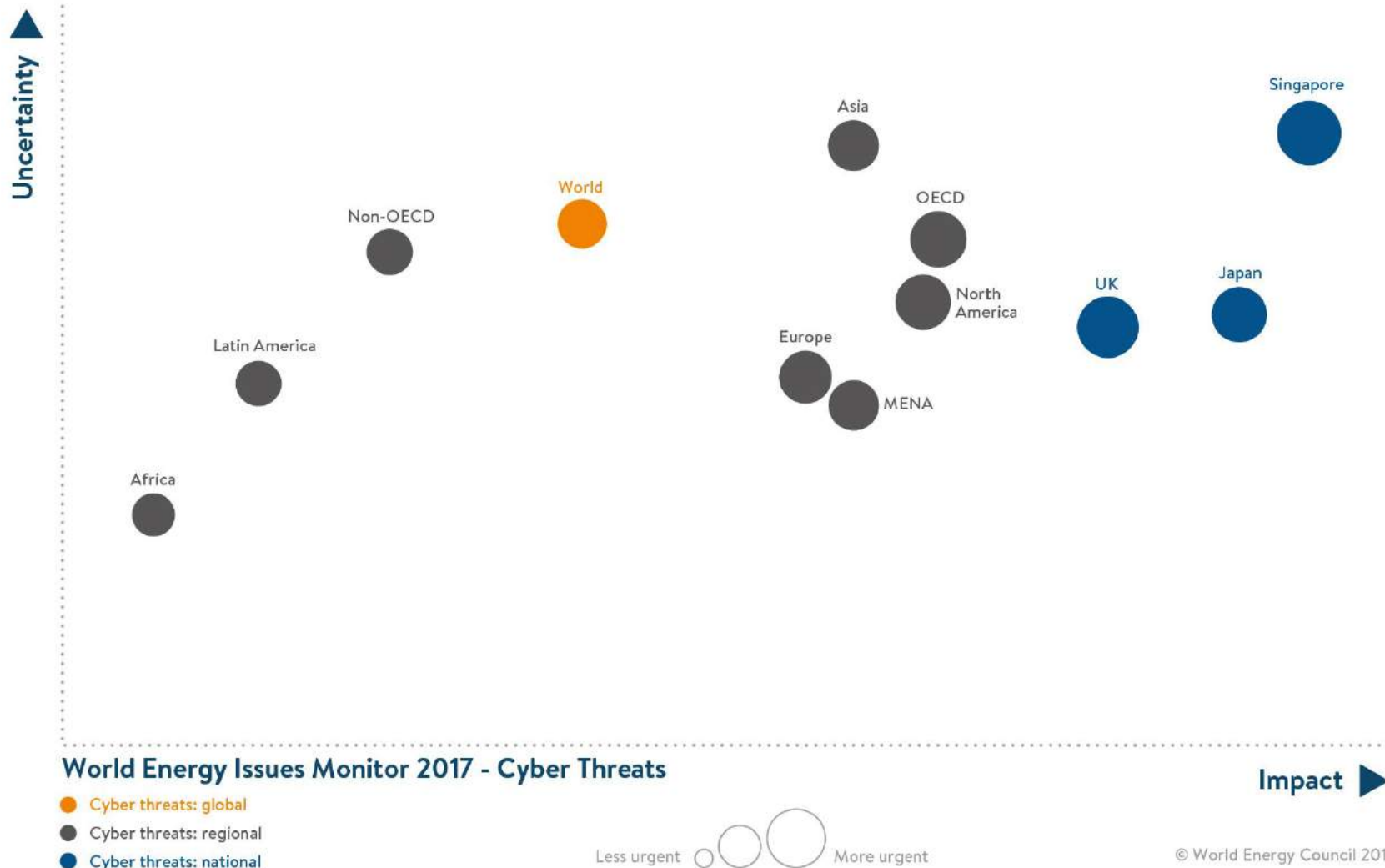
The Impact of Digitalisation Splits the Agenda



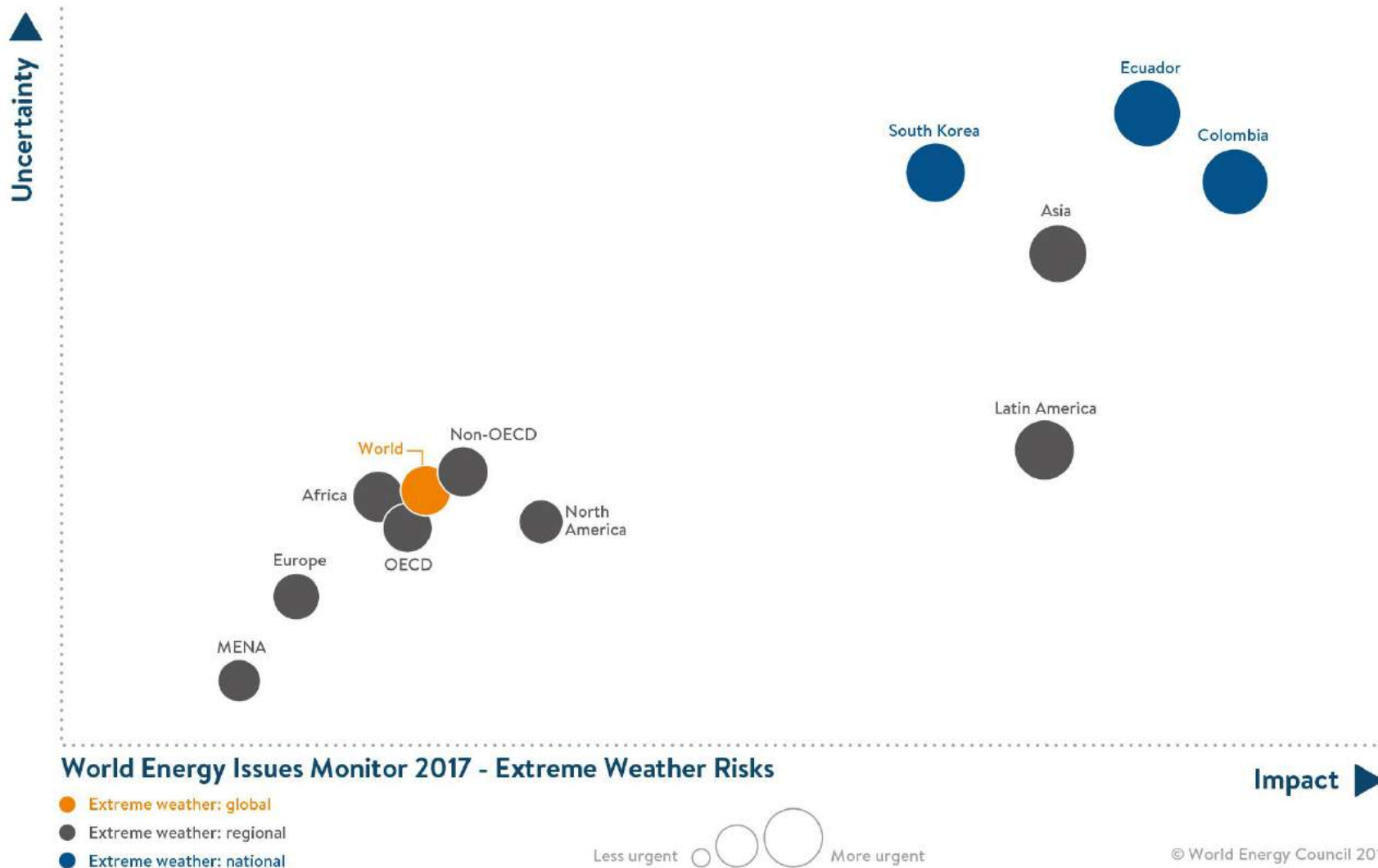
Electric Storage is of most importance for leaders in Europe and North America



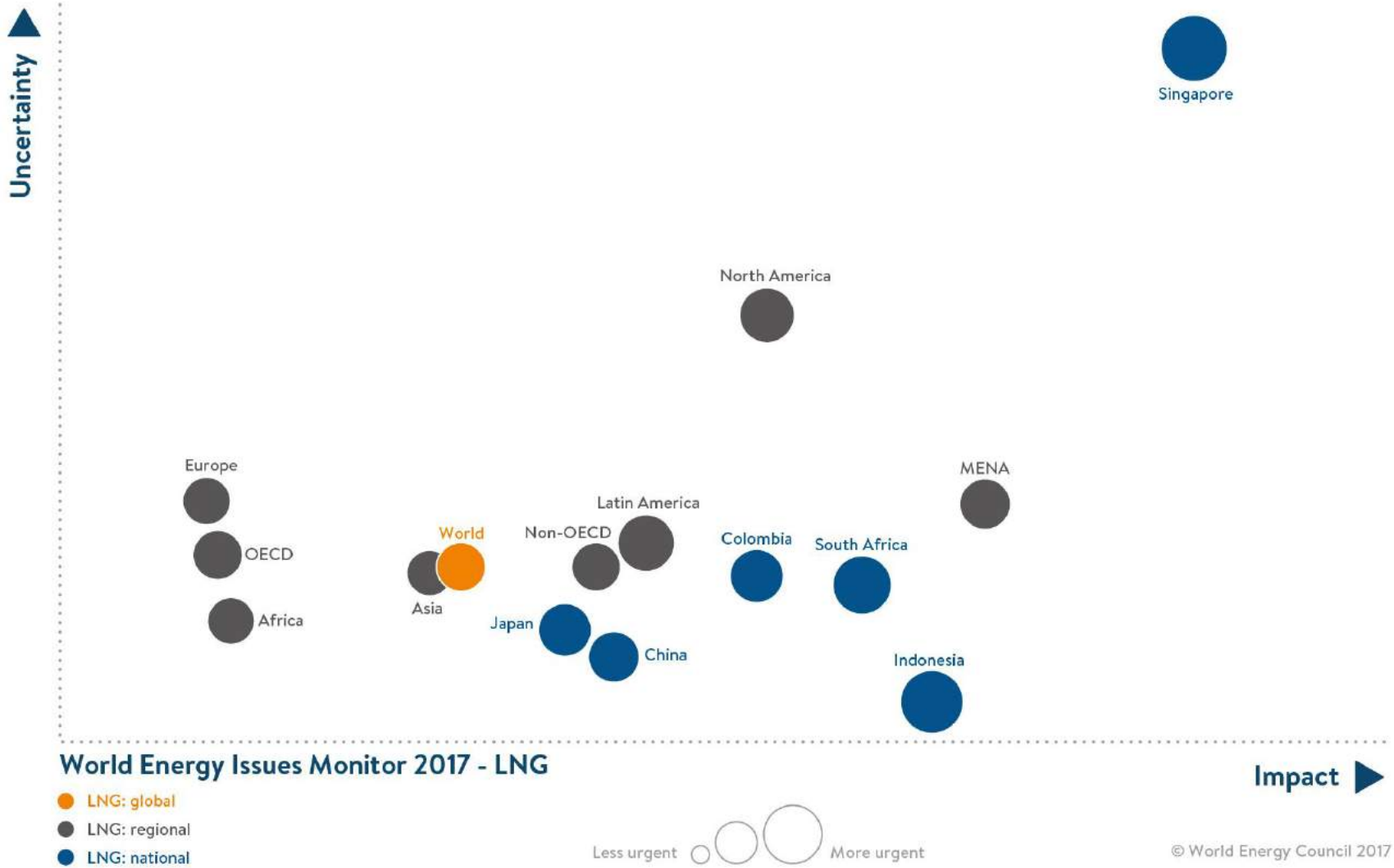
Resilience Defined at the Regional Level: Cyber Threats top for the OECD



Resilience Defined at the Regional Level: Extreme Weather Risks for Asia and LAC



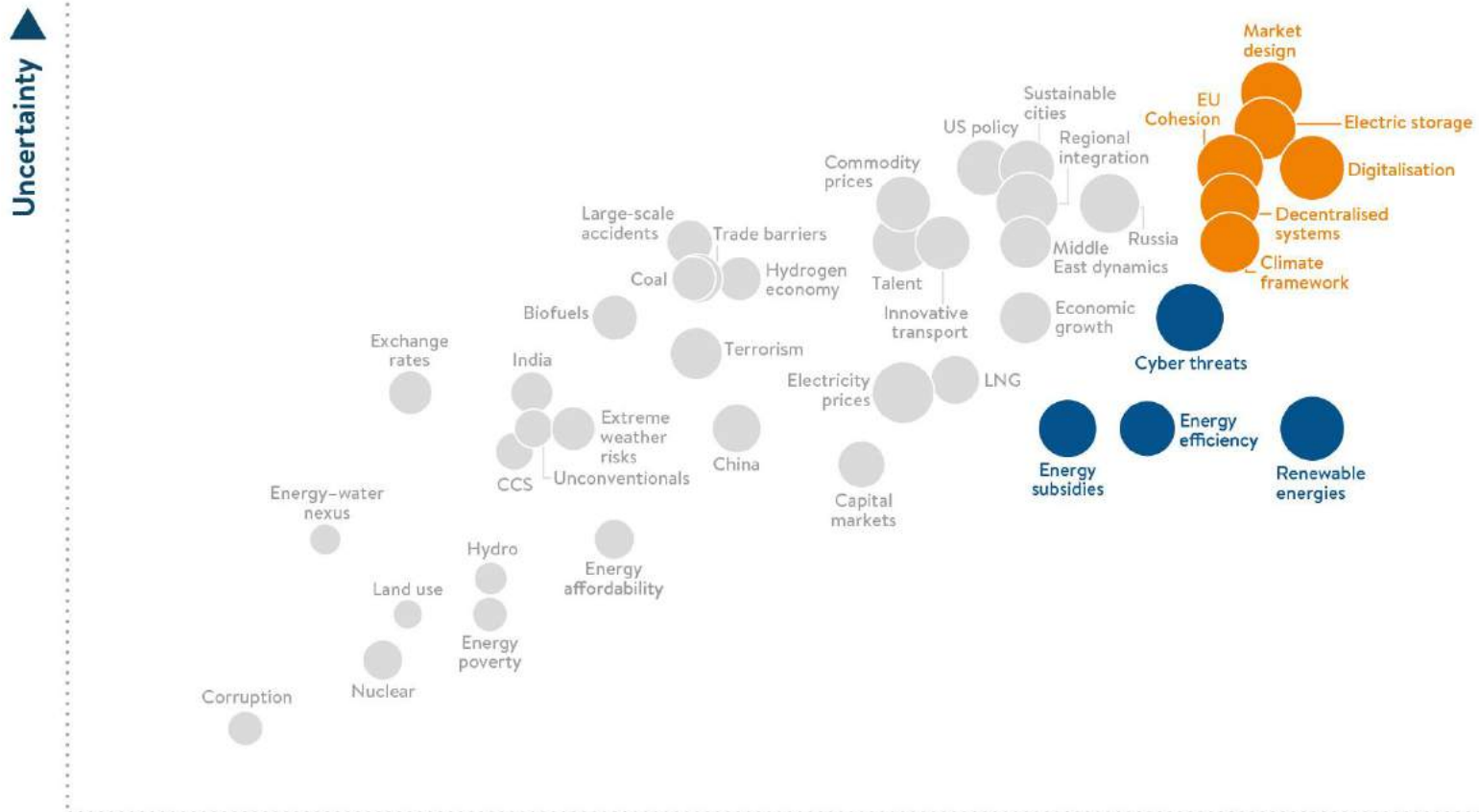
LNG of highest interest in North America and MENA



Section 2

The German Agenda

Germany Issues Map 2017



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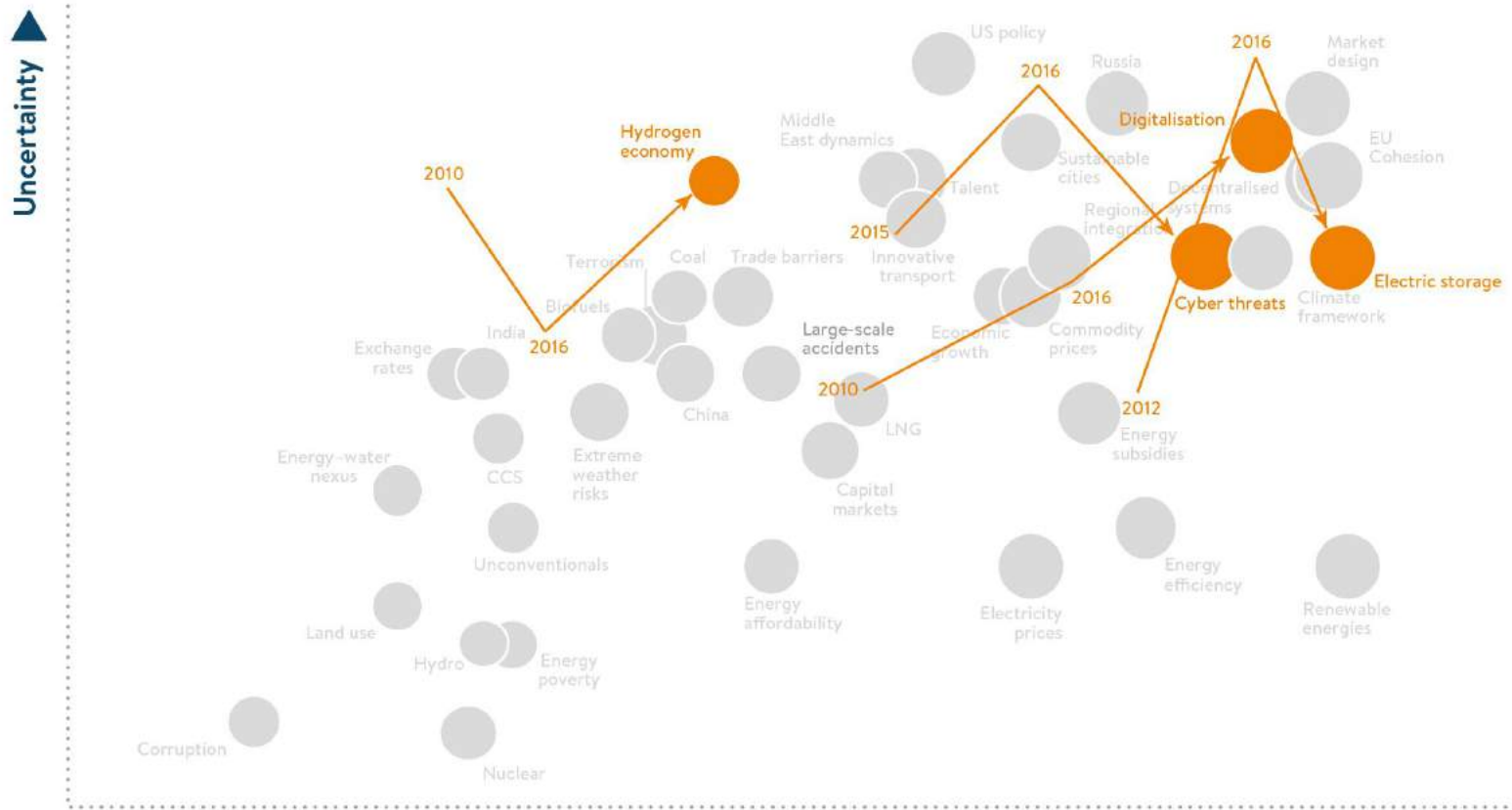
● Critical uncertainties: what keeps energy leaders awake at night

● Action priorities: what keeps energy leaders busy at work



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Germany Innovation Issues 2010 - 2017



World Energy Issues Monitor 2017 - Germany

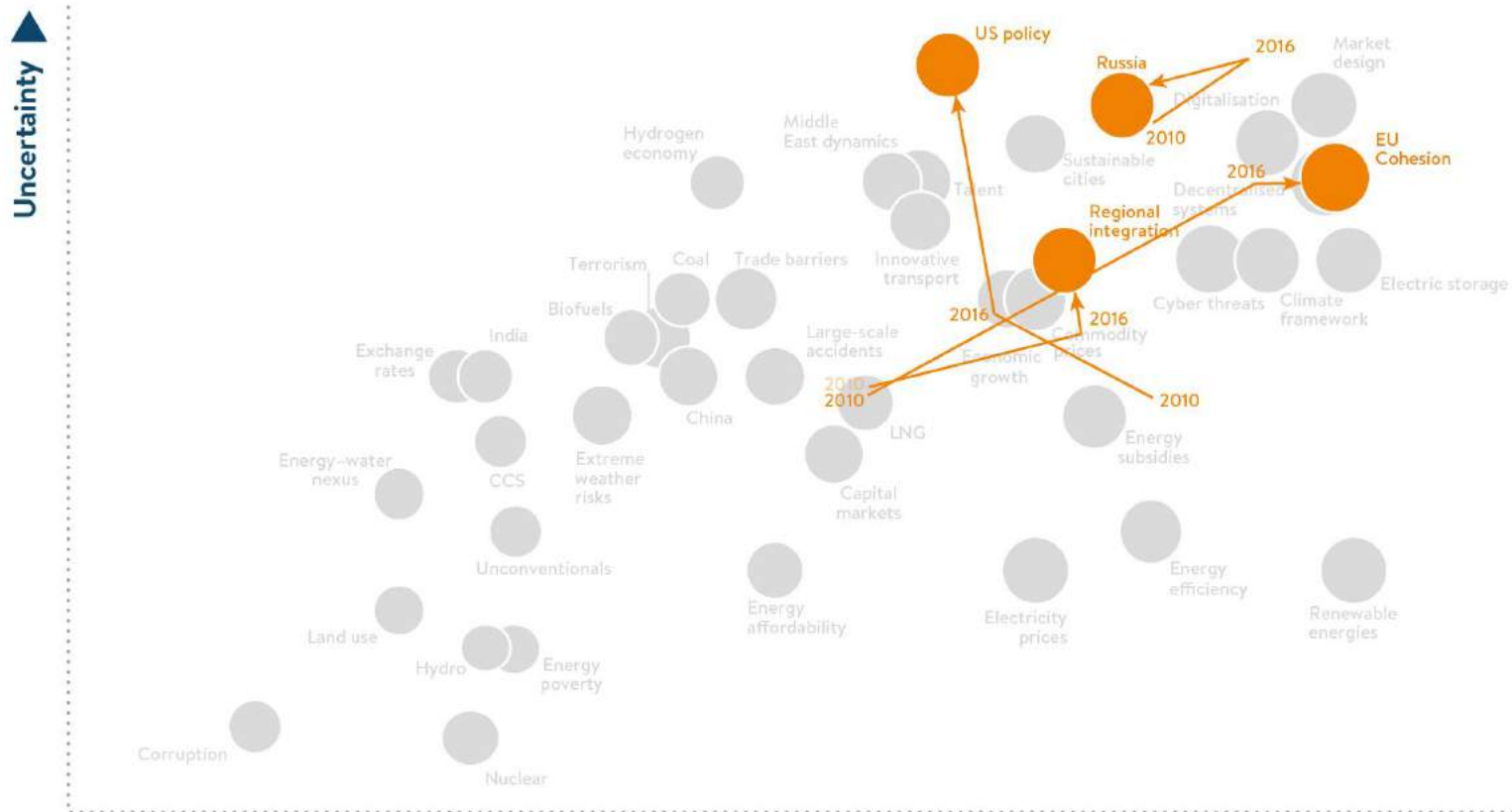
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● Innovation Issues: Timetracking from 2010 to 2017

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Germany Geopolitical Issues 2010 - 2017



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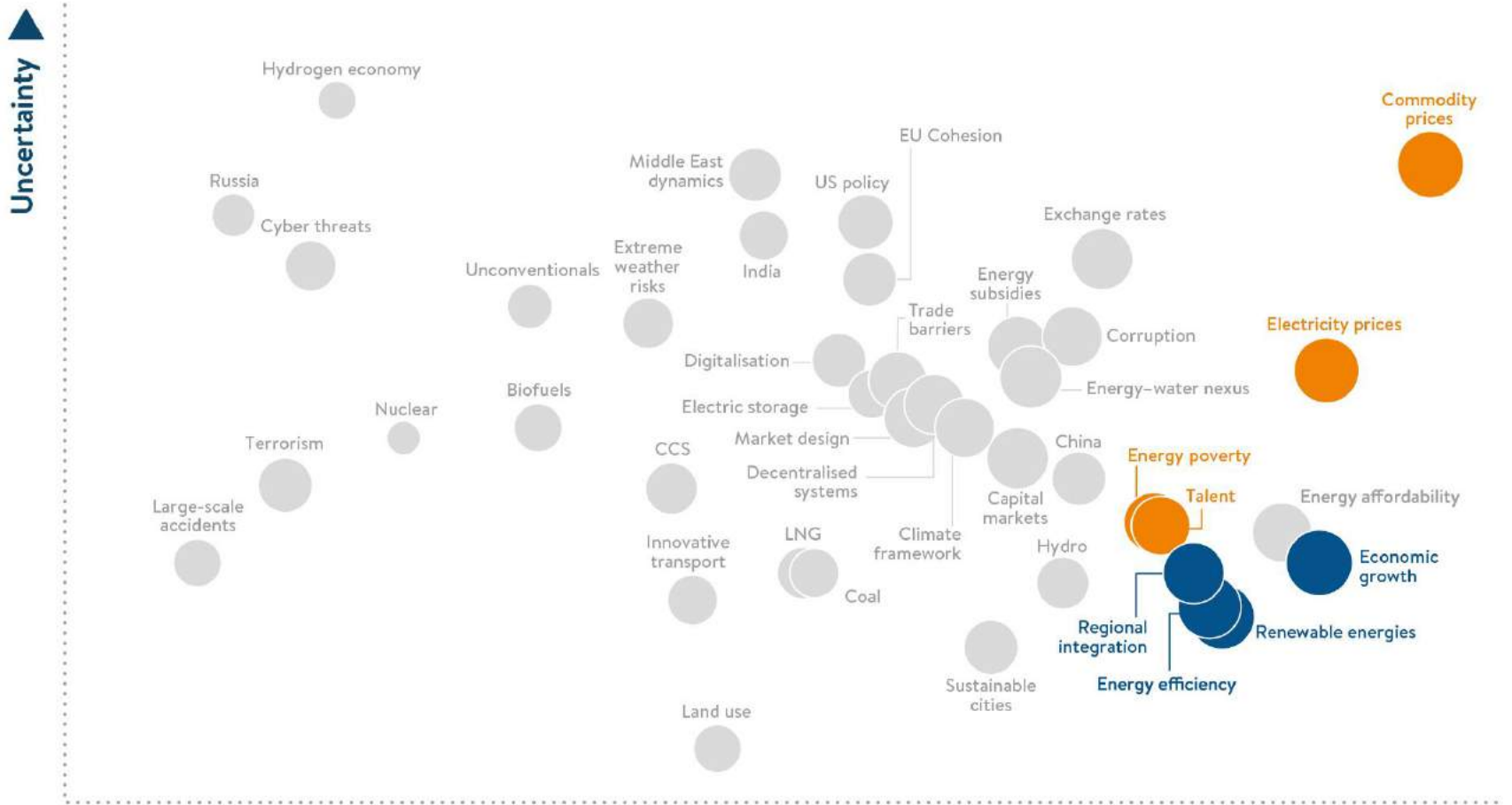
● Geopolitical Issues: Timetracking from 2010 to 2017

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Section 3

The Regional Agenda



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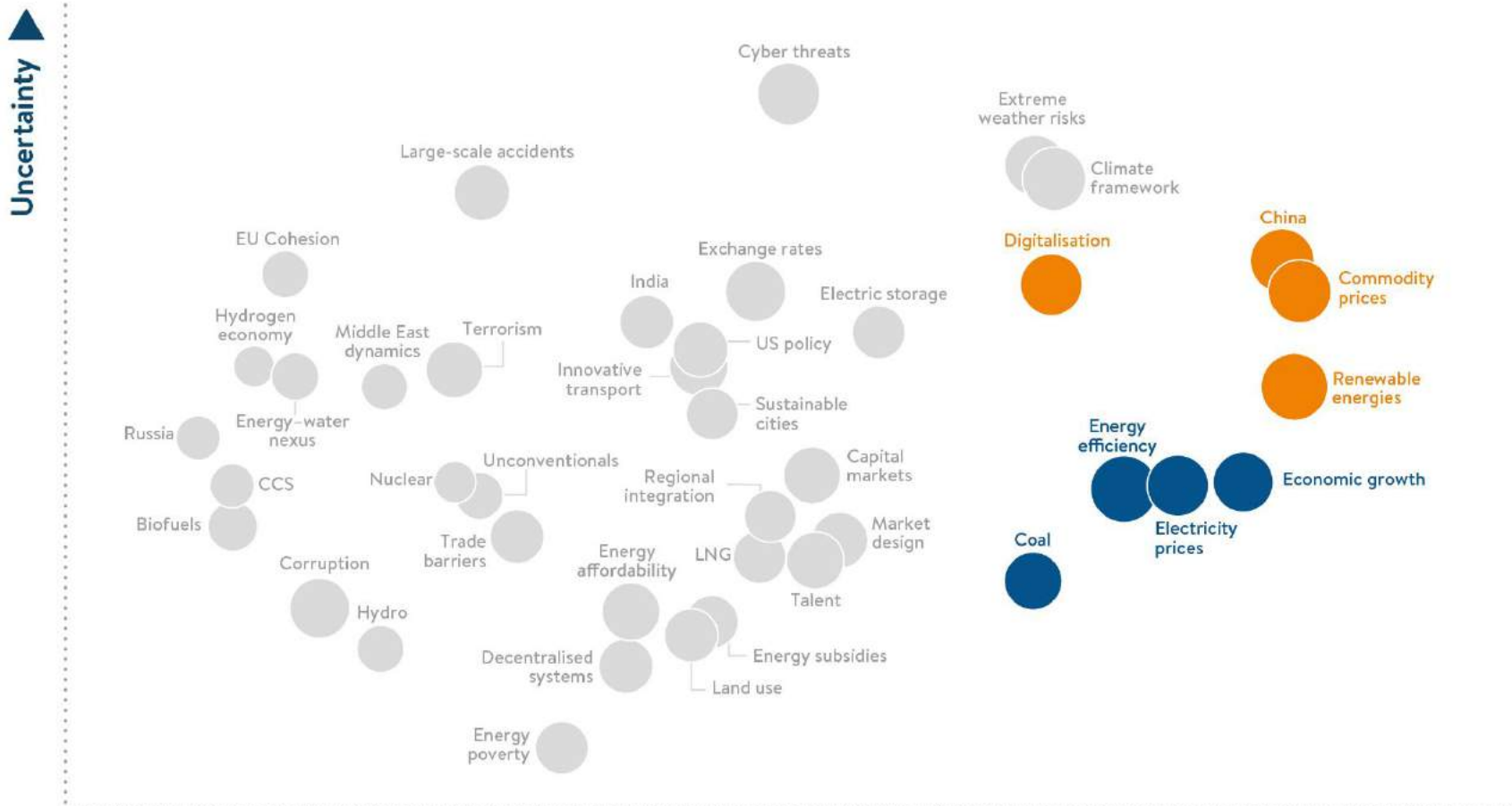
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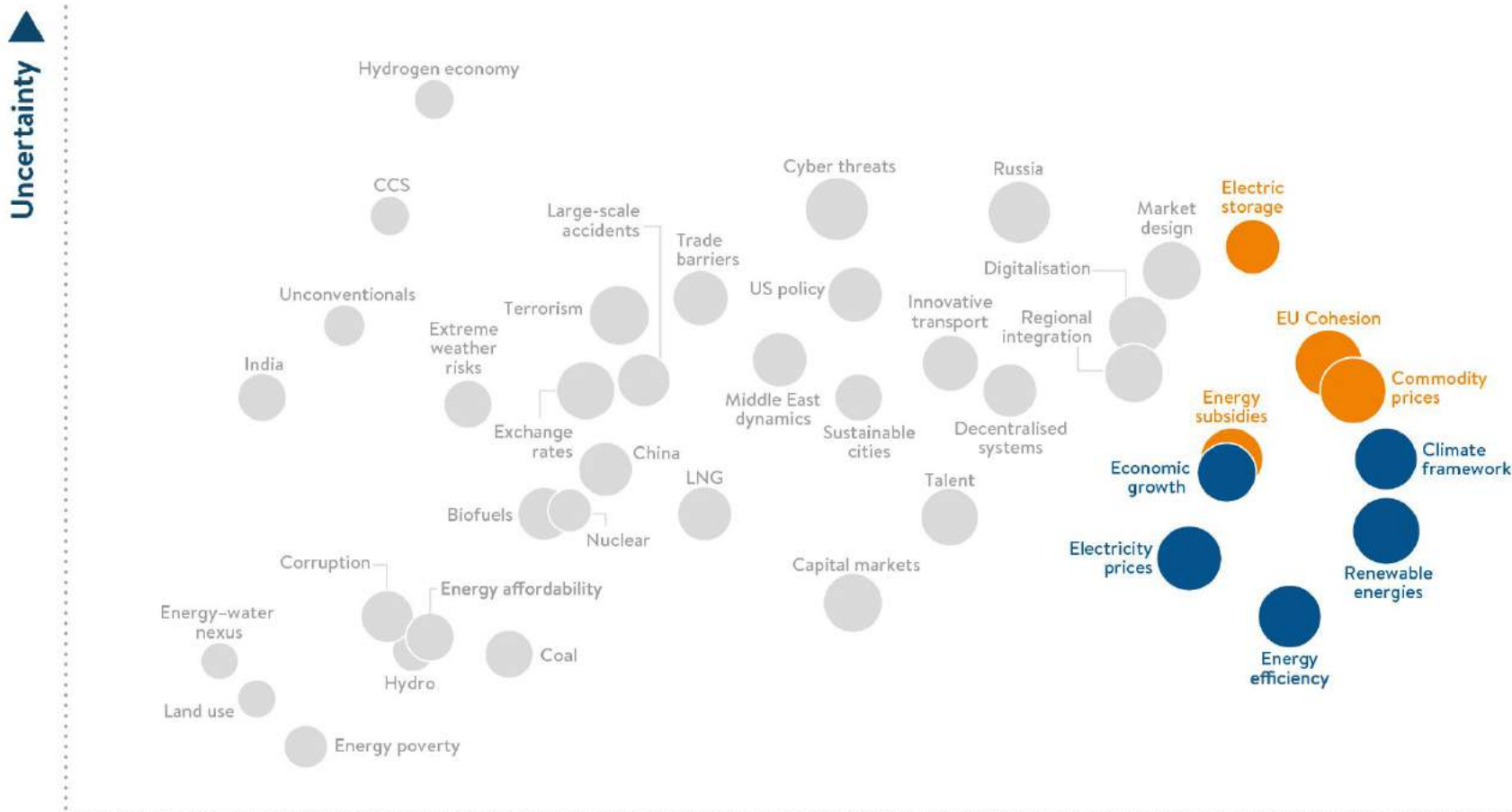
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- Low position of coal and nuclear
- High position of digitalisation and renewable energies

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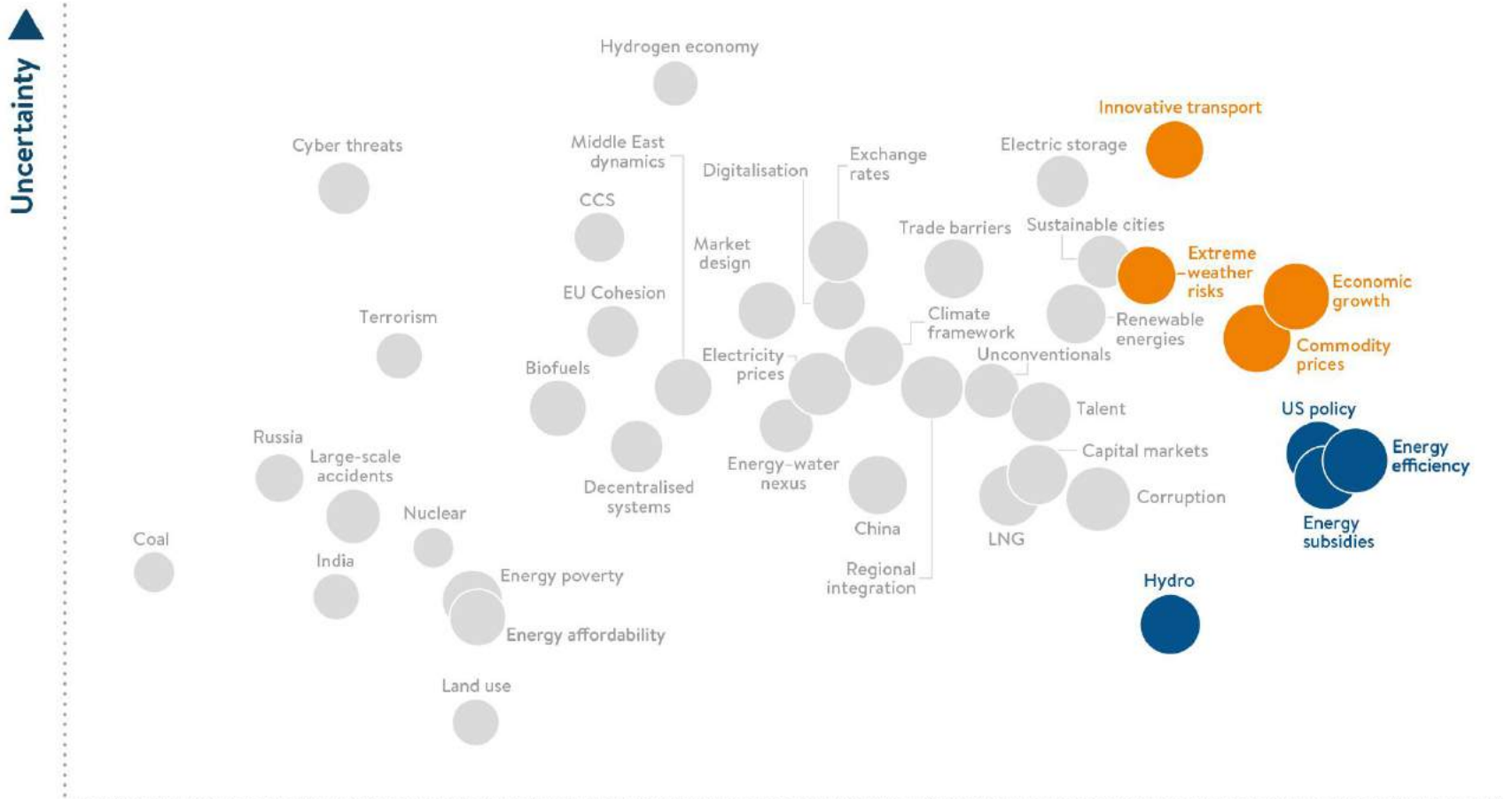
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The European countries have ambitious 2030 goals. Achieving these goals will require fundamental system changes. Using cooperation in the energy sector as much as possible will be beneficial for the European people, since it will reduce the costs of the ongoing energy transition. Cooperation will also help to reap the benefits of a digitalized energy sector much faster.

- Dr. Leonhard Birnbaum, Vice Chair - Europe

Latin America and the Caribbean



World Energy Issues Monitor 2017 - Latin America and the Caribbean

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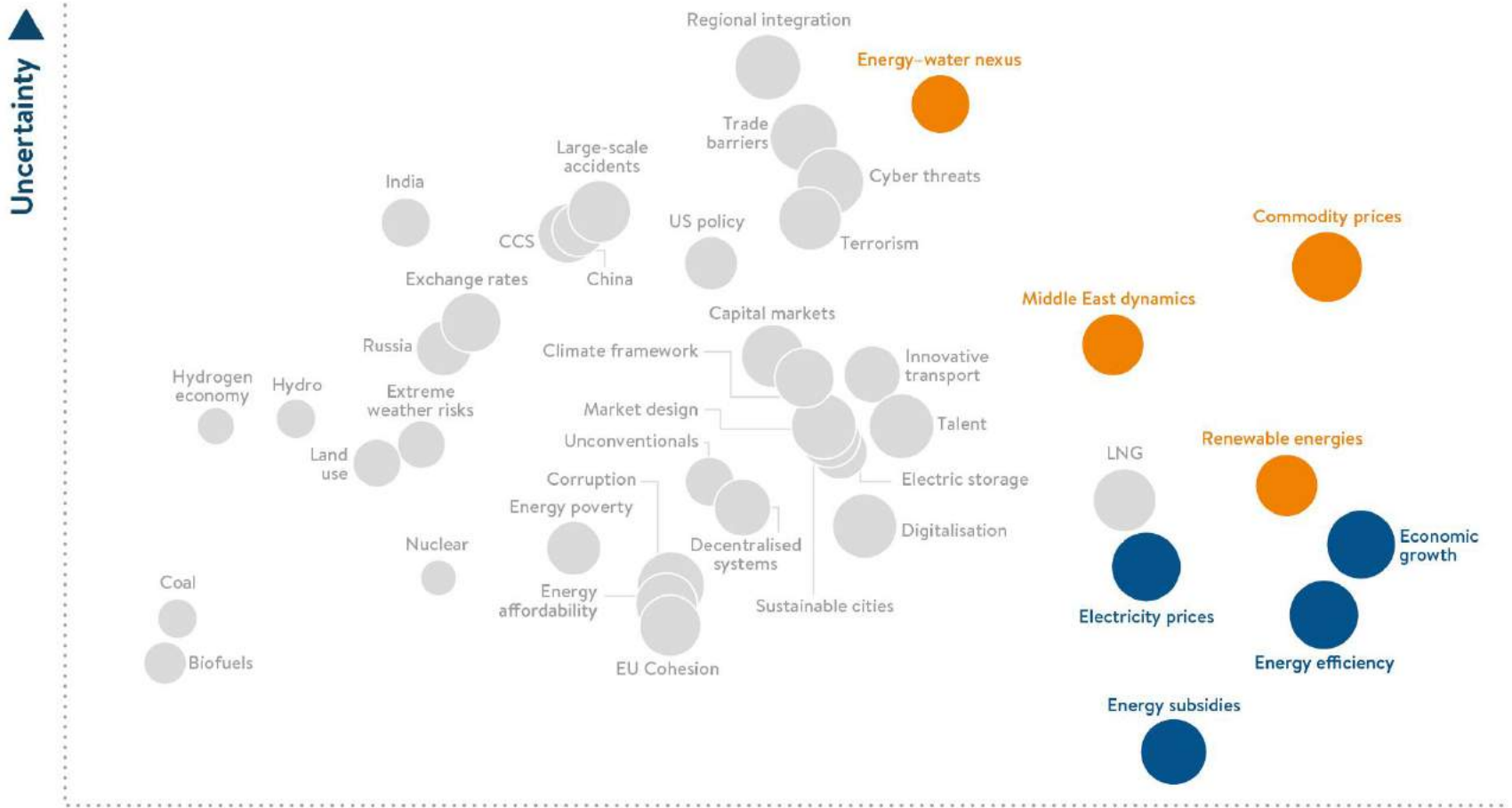
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The Middle East and North Africa



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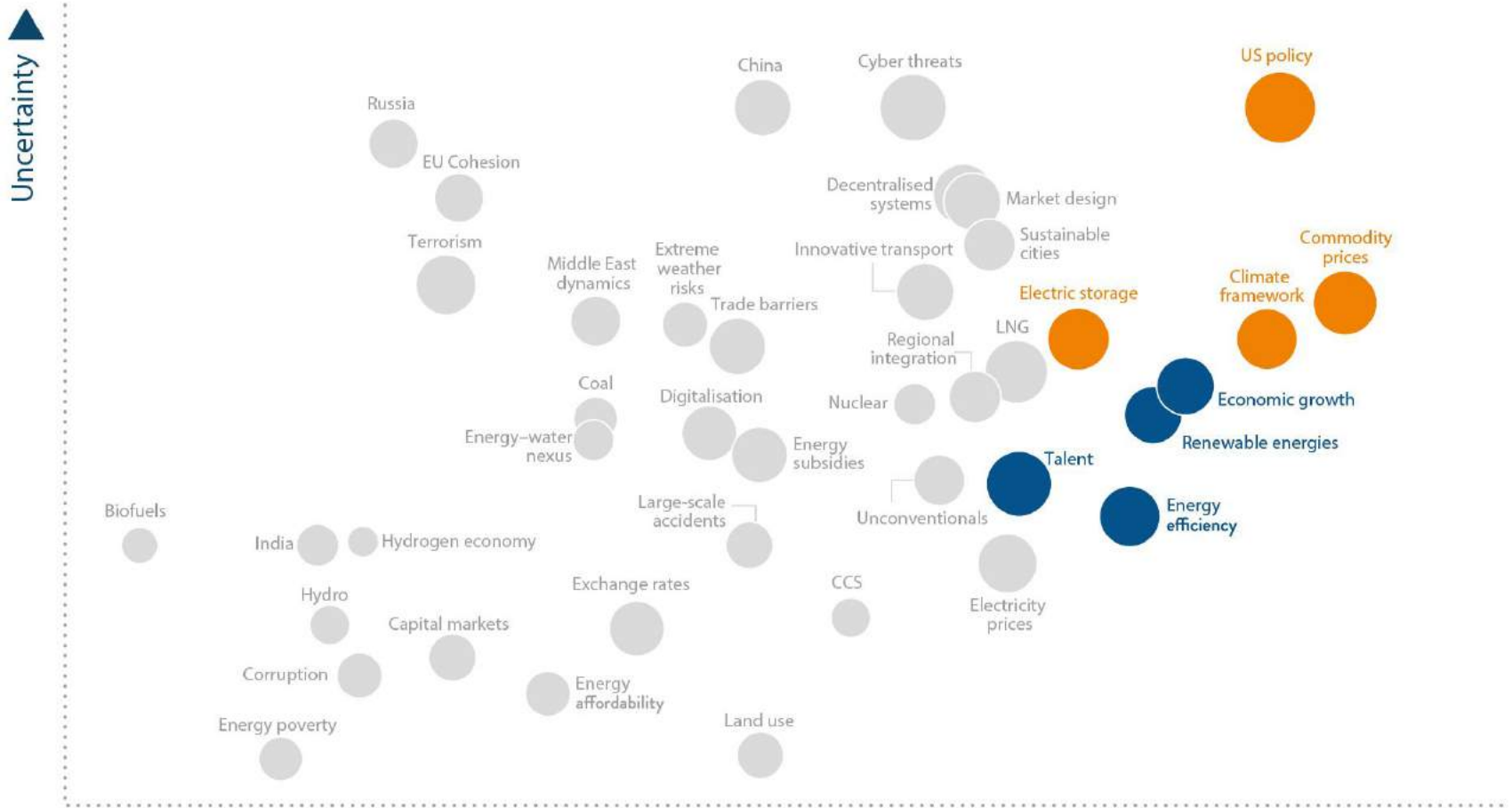
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North America



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About the World Energy Council

The principal impartial network of energy leaders

- At the forefront of the energy debate since 1923
- Guiding thinking and driving action around the world to achieve affordable, stable and environmentally sensitive energy system for the greatest benefit of all.



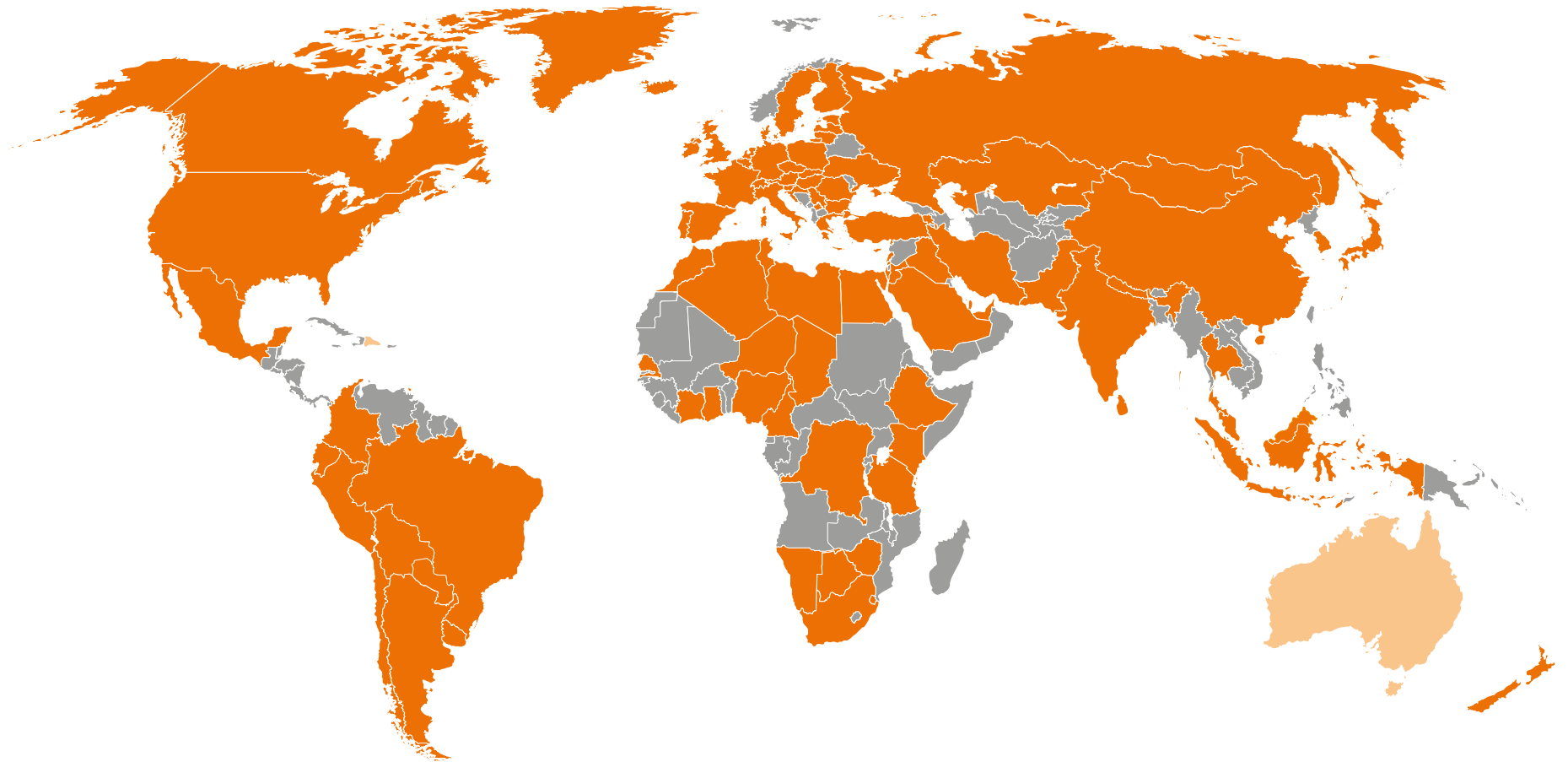
Max Planck and Albert Einstein at the "World Power Conference" in Berlin on 17 June 1930 where Einstein presented his theory of relativity



Informs global, national and regional energy strategies by:

- hosting high-level events
- publishing authoritative studies
- working through its extensive member network to facilitate the dialogue, peer to peer connections and sharing of best practice

Presence in 97 countries across the world as of November 2016



Member Committee

Direct Member

Membership Network

- UN-accredited energy body: principal impartial and inclusive
- Covers all nations including 92% of world energy consumption /production
- Made up of more than 3,000 organisations representing the complete energy spectrum – from fossil fuels to renewable energy sources
- Co-operation with governmental, non-governmental and international organisations



Generate new opportunities through the Council's multifaceted global membership network of leading energy players worldwide



Convening events for the energy community

- High-level exclusive events for the global energy leaders' community:
 - **World Energy Congress** - every 3 years, global flagship event enables dialogue among Ministers, CEOs and industry experts on critical developments
 - **World Energy Leaders' Summit** - twice a year, top level, on critical issues affecting the energy world
 - **Annual Executive Assembly** – strategic Council's governance and energy issues dialogue

- More targeted regional **World Energy Leaders' Dialogues**, Regional, National meetings and workshops



World Energy Congress - a truly global event

- **2016 World Energy Congress Istanbul**

- 5,500 delegates from 151 countries
- 4 Heads of State and 56 government ministers from 48 countries
- 266 speakers from 78 countries
- 50 sessions over 4 days

World Energy Congress – a truly global event



- 5 Community Roundtables, including the CEO, Trilemma Ministerial and Africa Energy Leaders' Roundtables
- 75 Future Energy Leaders' Programme participants from 56 countries

- **24th World Energy Congress : 8-12 September 2019 in Abu Dhabi, UAE**



“Some people say that since the price slump we should completely redirect energy to cleaner sources. I believe there are no grounds for such far-reaching conclusions. ...So-called smart grids have helped to speed up the process [of increasing energy access] but at the same time oil and gas consumption is speeding up. India and China’s consumption continue to increase.”
- **Vladimir Putin**, *President of the Russian Federation*

“We need to be competitive in a very different way than in the past. We need to be open about new ways to do business.... In previous cycles, as an industry, we have let costs drift up when prices are high, then cut back when prices fall. From now on, the challenge is to build—and sustain—businesses that are good through all cycles.”
- **Bob Dudley**, *Group Chief Executive, BP*



“The first driver of change is always technology, followed by customer desire, governments and regulators come after. Decisions must be localised and brought as close as possible to customers.”
- **Johannes Teysen**, *Chairman and CEO, E.ON*

Thank you

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