

**WORLD
ENERGY
COUNCIL**

World Energy Issues Monitor | 2018



**PERSPECTIVES ON
THE GRAND ENERGY
TRANSITION**

ABOUT THE WORLD ENERGY COUNCIL

The World Energy Council is the principal impartial network of energy leaders and practitioners promoting an affordable, stable and environmentally sensitive energy system for the greatest benefit of all.

Formed in 1923, the Council is the UN-accredited global energy body, representing the entire energy spectrum, with over 3,000 member organisations in over 90 countries, drawn from governments, private and state corporations, academia, NGOs and energy stakeholders. We inform global, regional and national energy strategies by hosting high-level events including the World Energy Congress and publishing authoritative studies, and work through our extensive member network to facilitate the world's energy policy dialogue.

Further details at www.worldenergy.org
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ABOUT THE WORLD ENERGY ISSUES MONITOR

The World Energy Issues Monitor provides a snapshot of what keeps CEOs, Ministers and experts awake at night in over 90 countries. The monitor helps to define the world energy agenda and its evolution over time. It provides a high-level perception of what constitute issues of critical uncertainty, in contrast to those that require immediate action or act as developing signals for the future. It is an essential tool for understanding the complex and uncertain environment in which energy leaders must operate, and a tool through which one can challenge own assumptions on the key drivers within the energy landscape.

This ninth iteration of the monitor is based on insights provided by more than 1,200 energy leaders to provide over 30 national assessments across six regions. 2018 will see the launch of a new interactive online tool for visualising the data that underpins the Issues Monitor, developed in collaboration with our Project Supporter ARUP.

FOREWORD

I am pleased that participation in this year's survey has once again exceeded 1200 energy leaders; including Ministers and CEOs from over 90 countries. This year's report includes 38 national issues maps including three new countries, Malaysia, Slovenia and Cameroon. I would like to thank all who have taken the time to respond to our invitation to participate. The World Energy Council's issues survey provides the basis for our unique macro perspective of the perception of critical issues in the energy sector, how they change over time and differ across regions. Once again, I would also like to recognise our Future Energy Leaders for their contribution. It is clear from the results that our community of leaders of the future are anticipating an accelerating/rapid energy transition.

It is important to include the participation and voice of Future Energy Leaders and current energy leaders, and to reflect regional perspectives, the World Energy Council is committing itself to broader participation, to include voices from new energy shapers within and beyond the energy system. Looking forward, we aim to reach out to new start-ups, 'prosumers', energy service providers and policy innovators. In this context, I am particularly pleased that for the first time we also have gathered input from the Start-up Energy Transition Award community, which every year identifies 100 top innovators and start-ups in the global energy scene. It is fascinating to see that for most issues the SET100 community has a similar perspective as the rest of the Energy Leaders community. However, there are pointed exceptions such as digitalisation or commodity prices – the former being even more relevant and the latter as less so by the frontier community.

This year's Issues Monitor report reflects an energy world in an accelerating transition toward digitalisation, decentralisation and decarbonisation. The Council's tracking of the movement of 42 issues over a decade, indicates that there is a dramatic shift in policy and implementation. For instance, electric storage and innovative transport are trending upwards in terms of their importance to the world energy systems of today and the future, whereas centralised energy technologies, such as coal, nuclear or CCS [Carbon Capture and Storage], have continued to decline in terms of energy leaders' perceptions of what matters. This decline in attention is reflected in the action plans of many European countries who are working to phase out coal and nuclear. The tracking of digitalisation, decentralisation, and decarbonisation are further illustrated and explained in the Introduction.

Lastly, the Issues Monitor report provides unique global, regional and national perspectives which can be used in combination with our other tools such as the Energy Trilemma content to enable countries to bring equity, security, and sustainability to all their citizens through the development of their national energy systems. The Issues Monitor is a key tool in our transition toolkit and the Council's mission to be at the heart of the energy transition. It is the Council goal to have all countries add their perspectives in future publications.



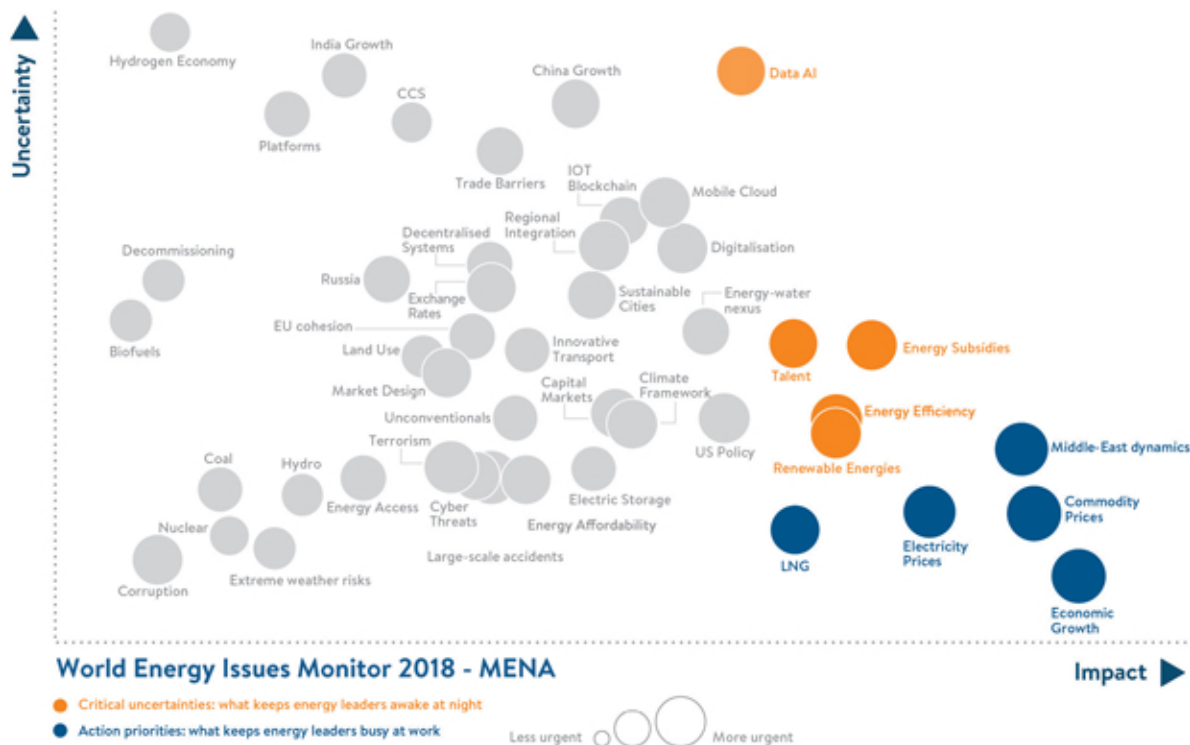
Christoph Frei

Secretary General, World Energy Council

Assessing the energy situation for the Middle East

MIDDLE EAST
LEBANON

MIDDLE EAST AND NORTH AFRICA



The year 2017 was marked by a relative degree of stability in terms of energy matters in the MENA region as witnessed by the lack of issues in the quadrant of critical uncertainties. Historic issues of concern such as Middle East dynamics, commodity prices, economic growth, electricity prices and LNG remain high-impact areas but fall sharply in terms of uncertainty, reflecting a degree of maturity as policymakers learn to live with cyclical issues of concern.

Middle East dynamics, historically a proxy for wider geopolitical tensions outside the GCC (Gulf Cooperation Council), came closer to home in the wake of the decision by Saudi Arabia, UAE and Bahrain to place Qatar under a trade and air embargo. Many of the Issues Monitor respondents are part of the GCC, and it is noteworthy that while Middle East dynamics rose in impact, it fell in uncertainty, possibly reflecting that most of the GCC believes that an early resolution to the issue is unlikely. However, the political situation with Qatar has not impacted **regional integration**, which remains little changed as an issue of moderate impact and uncertainty. This is surprising because Qatar, with its surplus of gas and generating capacity, is a potential nexus for increased regional integration.

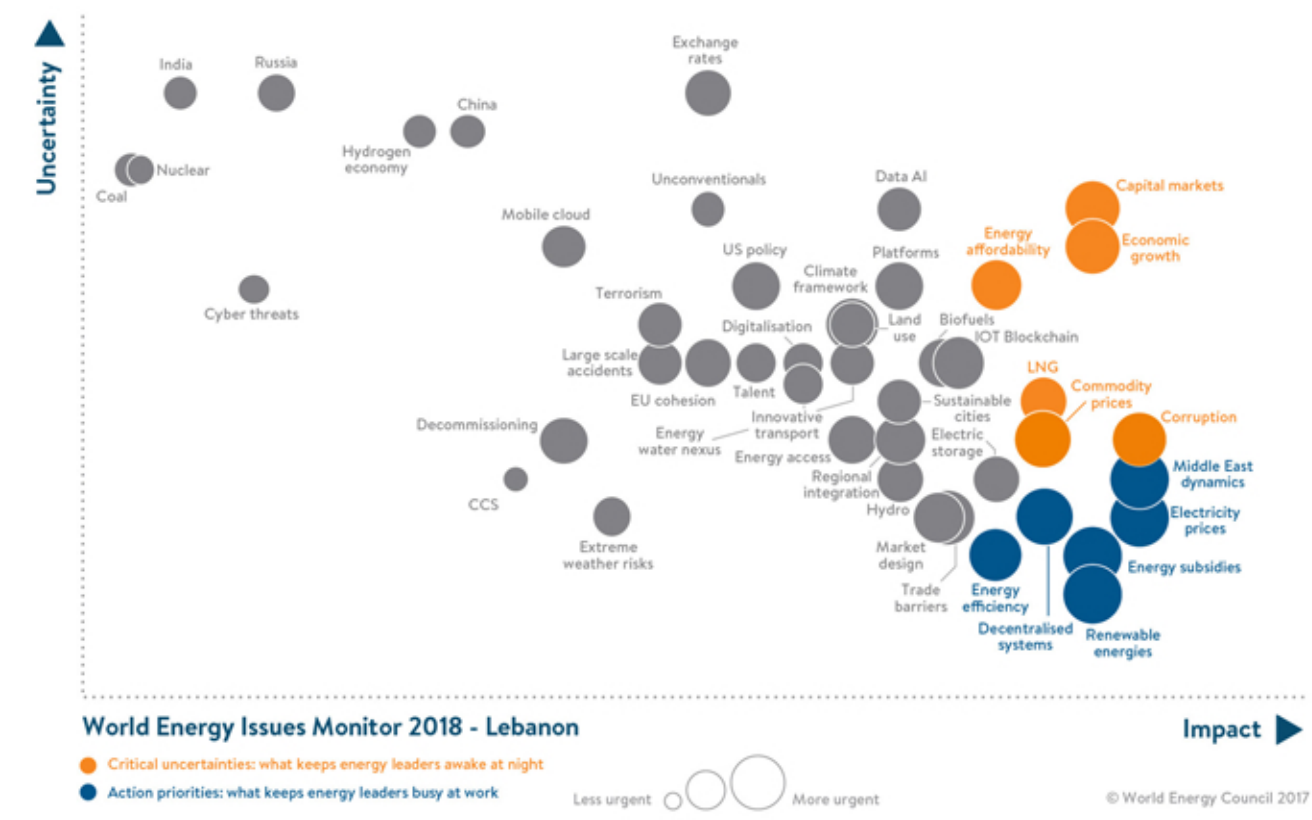
Core domestic economic issues such as economic growth, electricity prices and **commodity prices** remain as topics of utmost importance for policymakers, but their low level of uncertainty shows they are issues that governments feel can be taken in stride. These issues are closely followed by a cluster of domestic issues such as renewable energy, energy efficiency, energy subsidies and talent, all of which suggest that getting the local economy on the right track outweighs international concerns.

LNG continued the trend witnessed in recent years of rising in impact and falling in uncertainty. Supply of natural gas remains a key regional issue as domestic supplies fail to keep pace with burgeoning demand, but the easy availability of LNG imports from outside the region means that buyers are relatively relaxed about the status quo.

Noteworthy is the region's lack of interest in issues related to the energy transition, notably **climate change** impacts and decarbonisation challenges. Extreme weather risks, innovative transport, climate frameworks, CCS and competing fuels such as nuclear, hydrogen, hydro and coal all rank low in terms of impact despite varying degrees of uncertainty, suggesting that the region is not particularly concerned about the energy transition.

The new generation of technology-related issues offering potential opportunities, such as decentralised systems, blockchain, mobile cloud and digitalisation, all appear on policymakers' radar screens. While there is high uncertainty for these issues, the impact is high enough to suggest that policymakers are aware that disruptive technologies represent an opportunity that could be harnessed by national economies. Already, evidence on the ground suggests that private and state-owned companies in the power sector are moving down the route of digitalisation as a means to maximise operational efficiency and optimise energy consumption

LEBANON



NATIONAL OVERVIEW AND CONTEXT

Although the government is working very hard to make large investments to update the outdated electricity infrastructure most Lebanese regions experience 10 to 12 hours of electricity rationing a day, and these power cuts increase dramatically in the event of malfunctions in any of the ageing plants. It is common for residents to pay additional costs for external generators to compensate for frequent power cuts. However, there is much hope and an obvious trend to increase the inclusion of the production of renewable energy as part of the implementation of the national electricity strategy.

In 2017, a 10-year reform plan proposed by the Minister of Energy and Water (MoEW) was approved by the Council of Ministers. The first phase of the plan involves the lease of two additional power barges from the Turkish company that already operates two smaller ships in Lebanon, and the activation of the two recently overhauled power plants with the aim of increasing electricity supply to 21 hours a day this year. The main idea behind the leasing of the barges is to give the MoEW more time to build new power plants that can provide all of Lebanon with 24 hours of electricity in the future. The two additional floating power plants will reportedly generate up to 890MW at a cost of US\$340 million a year. The plan also envisions the construction of solar power plants in several areas in the country.

» The year 2017 has witnessed a historic moment in the development of renewable energies in Lebanon: the first decision in over 50 years to build large centralised renewable energy farms in the country. During its meeting on Wednesday, 12 July 2017, the Council of Ministers (CoM)

of Lebanon approved the construction of three wind farms by the private sector in the area of Akkar, North Lebanon. The three wind farms will be built by three different consortiums and will have an overall capacity of 200 MW.

KEY ISSUES FROM THE NATIONAL MONITOR

As for the field of **commodity prices**, the uncertainty has decreased from 2017 issues monitor due to some improvements the sector witnessed in the past year. On September 2017, the Lebanese Parliament approved the law on tax provisions related to petroleum activities in accordance with Law 132/2010, which was submitted by the CoM. As a result, the approval of the Petroleum Tax Law completes the legal framework governing the oil and gas sector in Lebanon allowing pre-qualified companies wishing to participate in the First Offshore Licensing Round to prepare their bids accordingly. In addition, on December 2017, the CoM approved the awards of 2 exclusive petroleum licenses for exploration and production, namely in blocks 4 and 9.

LNG is expected to play a big role in the supply and reliability of Lebanon's electricity future. A tender was launched for 3 offshore degasification terminals in 3 different locations in Lebanon to serve the power sector with Liquefied Natural Gas (LNG). Another tender was launched for the establishment of a storage farm covering 400,000 m³ in Tripoli, North Lebanon. However, LNG is a high uncertainty item because of Lebanon's refusal to assume any price or supply risk for the LNG or to pay upfront for infrastructure costs may dampen companies' interest.

On a national scale in 2018, **biofuels** shifted from a low impact/low uncertainty to a higher impact and uncertainty. This is because of the high importance of diversification in the energy mix. However, the biofuels are not on the priority list and its economics are yet to be studied in the country.

Comparing the 2017 issues monitor, **renewable energy** in Lebanon takes the lead in the action priorities. Lebanon's commitment to 12% renewable energy by 2020 is on the right path and all actions, both from the private and public sectors, are focused on expanding investments in this field. The Government of Lebanon took this commitment to the next level, by pledging to increase the renewable energy share to 15% by 2030 at the COP23 in Paris in November 2016. **Energy efficiency** and renewable energy strategies for Lebanon are documented in two official documents prepared by the Lebanese Center for Energy Conservation (LCEC) and approved by the CoM: The National Renewable Energy Action Plan 2016-2020 (NREAP) and the National Energy Efficiency Action Plan 2016-2020 (NEEAP). This further confirms the government's adopted systematic approach to reach national goals. The launching of these action plans in addition to the deficit in electricity supply has set the ground for many renewable energy initiatives.

CONCLUSION

The Lebanese energy and electricity sector is currently witnessing drastic progress and will continue to prioritise its renewable energy commitment as it works to bring 24 hours of electricity access to all of Lebanon.