

THE 24TH WORLD ENERGY CONGRESS PREVIEW

February 2019 | Edition II



APICORP Chief Economist's Top Picks 2019: What's in store for Energy Investments?

End of 2018, analysts struggled to make sense of declining stock prices and fluctuating markets. Brent hit \$86 a barrel in early October, then fell to less than \$51 on December 24 when Dow Jones tanked. Brent returned to around \$60 mid-January. Were oversupply and lower demand the cause, or was it a repeat of 2008, with overvalued assets and bubbles? Three major themes make this period different from the past.

First, the energy sector is learning to live with volatility, amplified by perceptions, social media and computerised speculation. Tweets from presidents or ministers only affect short-term sentiment, not longer-term structural fundamentals. That short-term volatility seems to be amplified by computerised trading, quantitative hedge funds and passive funds. Algorithms are programmed to sell if they perceive signals of an economic slowdown or tightening monetary policy.

Second, fundamentals still govern the long-term direction and energy market analysts face the same routine in 2019. There will be some new factors to watch, such as how shipping companies and refiners are addressing the International Maritime Organization 2020 sulphur caps. US oil production should continue to grow, the question is how operators and service

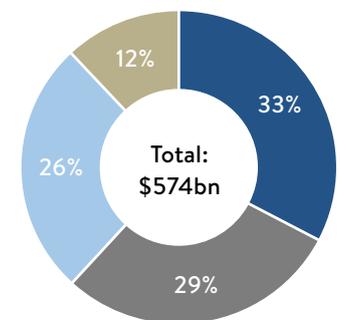


companies manage debottlenecking and Drilled but Uncompleted Wells (DUCs). With global GDP growth easing, and OPEC and its allies trying to balance the market, our base assumption is that Brent would trade between \$60-70/b by the second half of the year.

Lastly, global energy investment declined for the third consecutive year in 2017. Among the traditional energy players, we see a new cycle of convergence and integration between upstream, downstream and utilities. Diversification into mobility, logistics, petrochemicals, utilities and storage is driving the strategies of several majors and NOCs. While the US energy industry continues to have relatively easy access to capital, the picture in the rest of the world is mixed.

APICORP's five-year investment outlook estimated that energy projects worth \$622 billion were planned in the MENA region in 2017. In 2018, the total decreased to \$574 billion—an 8% dip. Around 80% of energy

investment in MENA is still government-led. With government budgets squeezed and private investors holding back because of market volatility, Multilateral Development Banks (MDBs) have an opportunity to close the funding gap. Investment opportunities are numerous and variable. For example, Asia, and a few large energy and financial players, will continue to bring proof of concept at large-scale, for almost every form of energy.



Planned MENA energy investment by sector (%)

With multi-faceted multi-paced energy transitions underway, APICORP sees three areas where investment and funding support are particularly needed: 1. natural gas, particularly on the consumers' side, 2. system flexibility and energy storage solutions, including when coupled with Renewables deployment, and 3. support for service companies in need of rapid efficiency improvement to leverage digitalisation.

Leila Benali,
Chief Economist, Energy Economics & Sustainability
APICORP

Art that Gives Energy

As a reader of the 24th World Energy Congress Preview, you are quite aware of the rapid expansion of renewable energy. You know, for example, that solar photovoltaic installations are expected to add 575 GW of new capacity over the next six years (International Energy Agency).

To attendees and delegates of 24th WEC this information is second-nature. But how much has this impending change permeated the consciousness of popular culture? Do we all understand the impact that our new energy infrastructure will have on our landscapes and our cities?

Those 575 GW of capacity will occupy land area nearly the size of Qatar, and we will need to install far more than that capacity before 2050 if we are to meet the goals that the IPCC has established (renewables must account for 85% of electricity supply by then).

Over the next few decades, solar, wind, and other renewable energy installations will be distributed across rooftops, farmlands, vacant lots, and sites of every scale around the world, and they will have an impact on our cities and rural landscapes like nothing else since the construction of the automobile superhighways of the mid-twentieth century.

While the vast majority of this new infrastructure will be utilitarian installations designed to meet the most competitive PPA, the energy transition also offers the opportunity for certain more cherished sites—and in instances where community engagement will be key to permitting and long-term project success—to think creatively about how clean energy technology can weave itself into the cultural landscapes of our cities.

Here is where we can begin to really engage the general public and get people excited about the renewable energy transition. By using clean energy technology as the media for public art and creative place making we can beautify our cities while we



Energy Duck: A submission to the 2014 Land Art Generator Initiative design competition for Copenhagen
Team: Hareth Pochee, Adam Khan, Louis Leger, Patrick Fryer
Energy Technologies: Photovoltaic panels, hydraulic turbines (Kaplan, Francis, or similar 100–500 kW capacity)
Annual Capacity: 400 MWh

make them more sustainable. We can educate and inspire a wide-ranging public to be excited about the beauty of a renewable energy future.

With 1% for the arts applied to 6 trillion in renewable energy investment we can bring about a transformation of our cultural landscape along with the transition of our energy landscape, making new artistic landmarks to this important time in human history.

This is the mission of the Land Art Generator Initiative (LAGI), a nonprofit that works with cities around the world on civic art installations that also function as renewable energy infrastructures. These generous works of art give back more than just beauty and return more than just kilowatt hours on their capital investment.

LAGI design competitions have changed the way that cities and developers manage

the integration of public art and creative placemaking into the master planning process for new developments. Competitions for Dubai/Abu Dhabi (2010), New York City (2012), Copenhagen (2014), Glasgow (2015), Santa Monica (2016), and Melbourne (2018) have brought in nearly 1000 designs from 60+ countries.

LAGI is pleased to be holding a special edition design competition in partnership with the 24th World Energy Congress and sponsored by Masdar. LAGI 2019 Abu Dhabi—Return to the Source—invites architects, landscape architects, artists, and other creatives around the world to design an iconic work of art for a landmark site within Masdar City, Abu Dhabi.

An official side event of the 24th World Energy Congress, the primary exhibition of the top 25 proposals and the official LAGI 2019 award ceremony will be held at the Abu Dhabi National Exhibition Centre September 9–12, 2019.

Elizabeth Monoian and Robert Ferry
 LAGI Founding Directors

World Energy Issues Monitor 2019

Dear reader of the 24th World Energy Congress Preview.

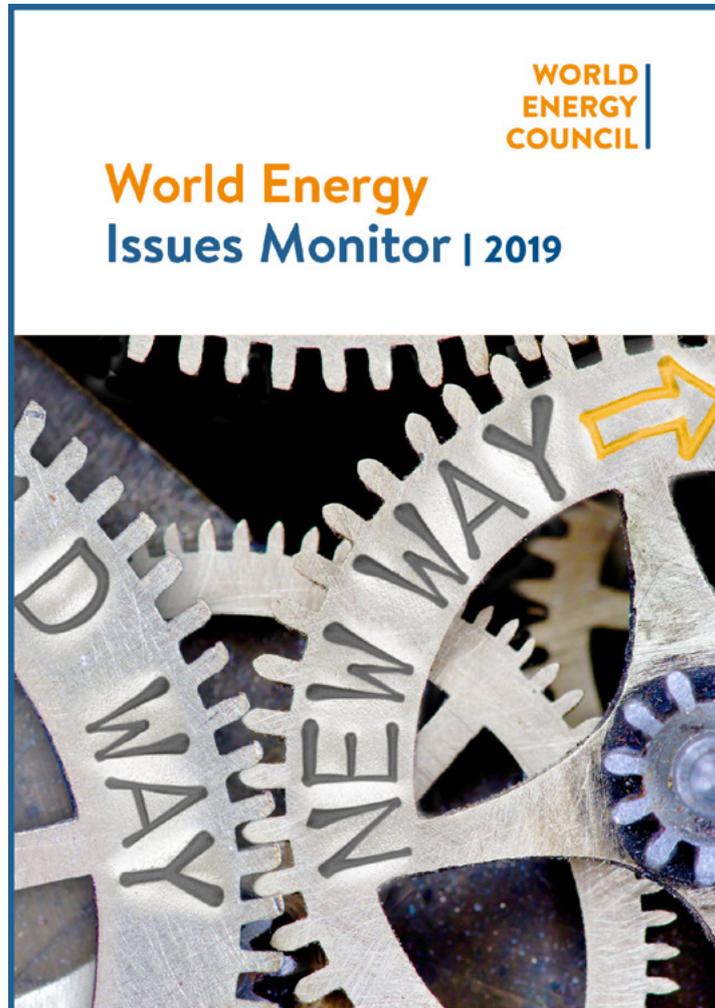
We are delighted to inform you that the World Energy Council will launch the 10th World Energy Issues Monitor at the Africa Energy Indaba on February 19th, 2019.

For ten consecutive years, the World Energy Council's Issues Monitor has been gathering the perspectives of energy leaders from public and private sectors across the six regions on 42 key issues that shape and drive our energy system. The Issues Monitor has become the energy leaders' foremost platform to identify, share and track critical issues surrounding the energy transition and assess which keeps them most awake at night or busy at work and how these change across time and space. This year's report sees a significant increase in the participation of global leaders as well as the participation of 86 countries.

The World Energy Issues 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 one's own assumptions on the key drivers within the energy landscape.

In addition to this report, the interactive online Issues Monitor tool allows the visualisation of the data that underpins the Issues Maps. This tool has been developed by the World Energy Council in collaboration with our Project Supporter ARUP.

Each Issue Map provides a visual snapshot of the uncertainties and action priorities that energy policymakers, CEOs and leading



It provides a snapshot of the current priorities, keeping energy leaders awake at night and busy at work. We are seeing an important shift in policy and strategy priorities: innovative transport, decentralisation and digitalisation have continued to trend upwards, while centralised technologies such as coal and CCS continue to decline as priorities for energy leaders.

experts strive to address to shape and manage successful energy transitions. Maps can be used in the following ways:

- to promote a shared understanding of successful energy transitions;
- to appreciate and contrast regional variations to better understand differing priorities and areas of concern
- to follow the evolution of specific technology trends related to the energy sector.

Dr Christoph Frei, Secretary General of the Council said: ***“Our Issues Monitor is key to the Council’s transition toolkit, providing unique global, national and regional perspectives into issues central to the energy transition.***

The results of the World Energy Issues Monitor 2019 will have a huge impact on the agenda of the 24th World Energy Congress. You will have opportunity to learn more about the World Energy Issues Monitor and the interactive tool at the 24th World Energy Congress in Abu Dhabi. In the meantime, for more information please visit the World Energy Council's official website <http://www.im.worldenergy.org/>

Natalie Vinters
 Associate Director
 Corporate Communications,
 World Energy Council

Visitor Registration for the Congress is free! Book now.

Six reasons to register now for access to this world-class, feature-packed exhibition:

- **Fast track entry**
Jump the queues, fast track entry!
- **Plan your schedule in advance**
With so much happening at the triennial global energy Congress register now and stay up-to-date on the 70 Government Ministers and trade associations attending from the energy sector.
- **Don't be the last one to find out**
Network with 15,000+ global energy professionals attending the Congress through the Congress social program.
- **100 top start-ups from the globe will showcase their innovation**
Meet the best of the world's energy start-ups and innovators.
- **Everyone in the energy world in Abu Dhabi**
Visit over 500 exhibitors showcasing a broad range of cutting-edge technology, products and services.
- **Knowledge exchange**
Attend the innovative knowledge transfer sessions throughout the 4 day event driving the future of the energy sector.

*** Early bird delegate discount ends 28th February 2019. Register now and get 20% off!**



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