

EXCLUSIVE INSIGHTS /// ACTIONABLE INTELLIGENCE /// EXCLUSIVE SURVEY ANALYSIS

# ENERGY TRANSITION DIALOGUES

# INTELLIGENCE BRIEFING

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**SCROLL DOWN!**

**HYDROGEN**

**Don't rely on subsidies!**

**POWER RELIABILITY**

**Keeping the lights on?**

**TEXAS' BIG FREEZE**

**The verdict?**

## THIS WEEK CHINA'S COAL COMPLICATIONS?

China has the world's biggest population, the world's second biggest economy, and is the world's biggest polluter, accounting for 28% of global emissions in 2018, according to BNEF. While China's commitment to net zero by 2060 is a decade slower than many other major economies, the aforementioned points mean many still consider it ambitious. But coal remains a major sticking point in this climate narrative – and understandably so. China is the world's biggest consumer of the dirtiest fossil fuel, as well as a major investor in other countries' coal plans. So far, Beijing's stance has been unclear. For example, a Chinese energy company decided to go ahead with a \$10bn coal-to-chemicals plant on the same day that the nation announced its first short-term blueprint for the 2060. How will China balance this juxtaposition in 2021?

**38.4 GW**

was the new coal power plant capacity that China put in operation in 2020 – three times more than the rest of the world.\*



**Kaare Sandholt, Chief International Expert,  
Center for Renewable Energy Development Energy Research Institute of NDRC**

**China's path to carbon neutrality by 2060 includes three main tasks.**

They must make the end-user consumption more efficient. That is one way to continue their economic reforms, heading away from heavy industry into light industry, and ultimately the service sector. This will also increase the energy efficiency per gross domestic product (GDP). The second step is to have a green power supply; wind, solar, and storage will play a huge role. And thirdly, electrification of the industry should be extremely high on the agenda. Remember, half of the country's coal consumption is in industry.

### Throwing down the gauntlet

China is known for taking its promises seriously, so the net zero goal by 2060 is extremely telling. Now the question is: when and how are they going to achieve this target? China is still very much dependent on coal for two main purposes: coal

production and industry. This will continue for several years, considering they have invested heavily in capacity. However, we will see a substantial reduction in coal consumption within the next ten years and a gradual increase in natural gas demand.

### Economics: the green switch?

It is now cheaper to invest in onshore wind and solar PV than to invest in new coal-fired power plants – this is a huge change. Solar manufacturing is already a huge industry in China, for example, which is one of the reasons that there are now more jobs in renewables overall than in the entire coal industry. And there are massive investments in research and development (R&D) and modern energy systems in the recent Five-year statements.

**FULL INTERVIEW HERE!**

\*Global Energy Monitor

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# HYDROGEN



## THIS WEEK GREEN HYDROGEN CAN'T RELY ON SUBSIDIES!

With global ambitions to ramp up hydrogen production, notably green hydrogen, the myriad of questions over cost, scalability and import-export markets need answering – and soon. One key area is avoiding the well-trodden route of supporting energy market dynamics with subsidies. Especially for regions increasingly trying to shrug the subsidy load off their economic shoulders – such as the Middle East – the prospect of subsidies as a crutch up to 2030 seems an unhelpful and circuitous route.



**Yusuf Macun, Managing Partner**  
Cranmore Partners

**Hydeal Ambition intends to deliver green hydrogen across Europe at \$1.8 per kilogram by 2030. It is ambitious – but realistic.**

The key ingredients are cheap electricity, efficient transport, and upscaling the size of the current electrolyzer market. The ultimate ambition of Hydeal Ambition? Unsubsidized and commercially viable green hydrogen. Another factor to consider is proximity, both for production and for end users. When it comes to intercontinental strategies, such as selling Middle Eastern green hydrogen in Europe, ammonia is an efficient vector that needs to be explored further.

### H2 and natural gas?

The impact of hydrogen on natural gas still needs to be seen. Hydrogen is still an emerging market, so it has not significantly disrupted existing energy flows. But as time goes on, the key question is: can the existing infrastructure for natural gas be converted into hydrogen? The answer is yes. There are complex regulations, legal requirements, and geopolitics surrounding

**\$120.7BN** was the value of the global hydrogen generation market in 2020, with the CAGR expected to rise at 5.7% between 2021-2028.\*

this development. But those concerns have been resolved in the context of oil and gas. So, now we can use those experiences to support the growth of hydrogen.

### NOCs' significant role

National oil companies (NOCs) in the Middle East have had great vision when it comes to embracing the energy transition. They realize that it would be counterproductive to approach it defensively, and instead are seeing it as an opportunity to build new industries. Clearly, the know-how in relation to how best to handle fuels and complex value chains are areas that they can manage better than most.

[FULL INTERVIEW HERE!](#)

## TOP 5 NEWS STORIES

[KSA's Plan to Rule the \\$700bn Hydrogen Market](#)

[Steel Powerhouse Turns to Green Hydrogen](#)

[Hydrogen: Big Oil's Low Carbon Solution?](#)

[Hydrogen, Ammonia and the Future of Shipping Fuels](#)

[Race to Make Green Hydrogen Cheaper](#)

\*Grand View Research

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# PODCAST

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## THIS WEEK FLEXIBILITY & RELIABILITY IN CHECK?

**W**hy does this matter? Most simply put, because it allows billions of people to continue benefitting from easy energy – i.e., light turns on when a switch is flipped – and it gives hope to the 1bn people worldwide who still lack that. Without flexibility, reliability weakens and without both, energy security can start to come apart at the seams. For example, both are pivotal to boosting energy efficiency, itself a core part of global decarbonization. Energy efficiency can deliver more than 40% of the reduction in energy-related greenhouse gas (GHG) emissions over the next 20 years, said the International Energy Agency (IEA). Yet energy efficiency has been declining since 2015, a stress intensified by Covid-19. How to start getting back on track in 2021?

**7%**  
global growth in  
renewables used for  
power generation in  
2020 was in sharp  
contrast to other fuels.\*



**Yana Popkostova, Founder and Managing Director**  
European Centre for Energy & Geopolitical Analysis

### The EU aims to have a cross-border power exchange with the ability of member states to trade electricity daily by 2030.

Our target is to have 15% of installed capacity available for interconnections – achievable with enough financing and collaboration.

### Times are certainly changing

A few years ago, we had an archaic model with centralized and often monopolistic utility companies providing energy to very passive customers. Today, we have a multiplicity of actors and more proactive customers. Integrating a large percentage of renewable energy into the power system is not something that can be done overnight. There are many complementary

approaches in terms of policy, regulation, and innovation that are needed to ensure grid stability.

### Don't forget the SDGs

Energy leadership remains homogeneous, despite initiatives around diversity mushrooming across the sector. We need to promote a transition that not only puts us on the path of a low carbon transformation, but also achieves the sustainable development goals (SDGs). For this, diversity is a major factor, including gender diversity. We must acknowledge the importance of leveraging an inclusive and collective wealth of knowledge.

**FULL INTERVIEW HERE!**

## Dr. Pablo Izquierdo Lopez, Senior Manager – Energy Auditing and Consultancy SMart4Power



### Global carbon pricing must increase more than seven-fold to contain global warming to pre-industrialization levels of 1.5°C under the Paris Agreement, according to recent reports. In other words, potentially a 600% gain.

While there is generalization in that statement, it is a good way of putting a number on the environmental risk of inaction. It allows us to convert an abstract concept of CO<sub>2</sub> emissions into a number that can be embedded in people's minds and companies' balance sheets.

### Utilities: Snail or hare?

The world has added a record amount of new renewable power in recent years. Some of this is cheap, and some is already

cheaper than fossil fuels. In the past year, we have seen great improvements in many countries, which are moving forward with better prices and cheaper clean technologies, including power purchase agreements (PPAs). But much more is needed. The most successful countries are those with stable legal frameworks that can establish a reliable environment for companies to invest. That is the key ingredient that allows the best technologies and players to enter the market. Furthermore, energy efficiency remains a key element. There are still a lot of low-hanging fruits that can be harvested to save more energy.

**FULL INTERVIEW HERE!**

\*IEA

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# PODCAST

**\$100BN** is the estimated economic annual losses attributed to power outages in the US alone.\*  
\*US Energy Department

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**Omar Sadder, Key Account Manager**  
 Yellow Door Energy

**The freezing of Texas’ wind turbines is an anomaly; wind power generation will bounce back from this incident.**

Although a lot of negative attention was focused on renewable energy sources during the big freeze, many of the conventional oil and gas infrastructures experienced the same freeze. One of the biggest challenges in Texas was heating, which is predominantly fulfilled by gas. We cannot judge the reliability of renewable power sources by this experience alone.

**Resilience? It matters – a lot**

A key word we hear these days? Resilience. This is not only about being able to get up, but also about being ready for what is coming next. The cost of energy is an area that businesses are thinking about seriously and customers are getting smarter about metering their energy consumption. Let’s take Egypt as an example. Traditionally, the country’s power and water have

been subsidized for businesses. But over the last few years, we have seen rising power and water prices – a growing concern for some. But this has prompted businesses to investigate sustainable solutions, like recycling water, using alternative sources of energy, and adopting technologies to manage their water and power bills.

**Tech’s growing sophistication?**

Advancements in the solar energy industry have enabled us to increase the size of installations in small areas, for example. This ultimately leads to less pressure on the grid. Furthermore, there are a lot of tools being adopted to reduce energy consumption, especially in residential buildings, such as artificial intelligence (AI).

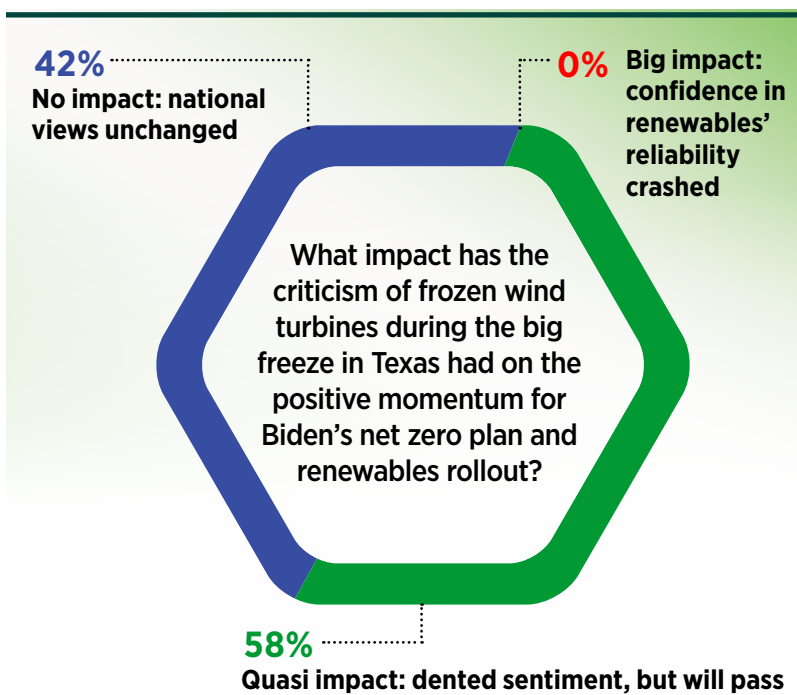
**FULL INTERVIEW HERE!**

## SURVEY ANALYSIS

# TEXAS’ BIG FREEZE AND RENEWABLES: A HEALING BRUISE!

**It speaks volumes about the US’ ever-improving climate narrative that no respondents believe Texas’ big freeze has turned confidence in renewables on its head. Instead, it has only caused a blip in the upward trajectory of green energy in the world’s biggest oil producer.**

Texas, the US’ biggest oil producing state, is often lauded for its ramp up of wind power generation over the last 15 years, despite a rollercoaster of climate directives from the White House. But the positive impact of having Biden in the Oval Office – the nation’s most climate-focused President ever – appears to be filtering through the ranks. What was most notable from critics and some news headlines was that the fact that oil and gas infrastructure also froze was buried several paragraphs down. Perhaps if the winter of 2021 brings a similar challenge, then renewables will receive equitable finger-pointing?



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