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ENERGY TRANSITION DIALOGUES

INTELLIGENCE BRIEFING

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SCROLL DOWN!

US HYDRO NEEDS HELP

INDIA NET ZERO BY 2070?

OUCH! ASIA TAKES A HIT

HYDROGEN

THE US' EAGER PIVOT?

**Mona E. Dajani, Global Co-Head Energy
& Infrastructure Projects Team, Pillsbury Law**

The US is completely pivoting when it comes to hydrogen. For one, there are several initiatives and programs coming from the new Biden administration - a gamechanger - with some already implemented with the Department of Energy.

And there are others within global carbon pricing that are on the table with global players. There is also support from the huge infrastructure plan, which includes electrifying the grid in the aim to stimulate the US economy while pushing a clean energy agenda. A hydrogen economy will certainly help increase the US' energy security, environmental quality, energy efficiency, economic competitiveness, and reputational value. We see a big push on this from all different directions.

At the moment, European countries have a lot more government programs and incentives, while the Middle East's natural resources and existing infrastructure will help propel the region to be a strong player if it wants to be. With big oil majors, we are seeing a lot of the same infrastructure being retrofitted for hydrogen. There is also existing talent and expertise within the oil industry that can be banked on to pivot to a hydrogen economy. There are barriers, of course, especially given how capital-intensive hydrogen investments are. But overall, it is looking very bullish!

14% of the US' energy needs could be supplied by green hydrogen by 2050.¹

FULL INTERVIEW HERE!



¹The Roadmap to a US Hydrogen Economy

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TWO MINUTE WARNING

97% of US' Hydropower Potential is Untapped!

Malcolm Woolf

President and Chief Executive Officer, The National Hydropower Association



FULL INTERVIEW HERE!

A huge majority of existing dams are not being fully leveraged. But there are two major developments to look out for.

The first is pump storage. We need that long-duration energy storage, particularly with the higher penetration of variable wind and solar power generation. We need solutions that last hours and batteries cannot provide that. This means there is a renaissance of interest in building new stores in the US and in new technologies. In the pump storage world, the ability to do this is the closed loop from storage from navigable rivers. Reusing the same water over and over helps makes it much more sustainable. Furthermore, a recent report by the Department of Energy finds that the US hydropower industry could grow from 100GW to 150GW by 2050 – a 50% growth rate to come from existing dams that currently have no power generation. Plus, flexibility has become the key issue for the evolving electricity system. As we add more variable resources like wind and solar, we need resources that can integrate that flexibility. In this case, hydropower is not only clean and carbon free, but it is also a force multiplier. It enables us to generate more wind and solar in the grid. Therefore, hydropower must have an essential role in the global energy system.

“IT WAS VERY DISAPPOINTING THAT PRESIDENT BIDEN’S RECENT SPEECH ON THE NATION’S INFRASTRUCTURE PLAN DID NOT INCLUDE A SIGNIFICANT ROLE FOR HYDROPOWER. WE’RE WORKING TO CHANGE THAT!”

Biden’s help?

One of the issues with hydropower is the perception that it is not a fully renewable source of energy. The Biden administration has a definition of clean energy that includes all forms of zero-carbon technologies, in which hydropower would qualify. This would be a huge boost to levelling the playing field and showing investors that the US is ready for hydropower business again. With the success we

have had in getting wind and solar to be cost-competitive, we can now shift our goals and focus on supporting all forms of zero carbon generation – including hydropower. Hydropower is an essential part of a 21st century energy and climate system. It is one of the largest renewable sources and provides power to about 30mn Americans. It is often called America’s first renewable resource; it has been around since the 19th century. Currently, the US has 80GW of traditional hydropower and another 23GW of flexible storage. This equates to approximately 70% of the US’ total energy production and around 40% of its renewable production.

TOP 5 NEWS STORIES

[Global Emissions Far Off Net Zero Trajectory](#)

[UAE, Japan Ink Deal to Explore Hydrogen](#)

[China’s Coal Ban & Steelmakers’ Dilemma](#)

[Decarbonizing Heavy Industry](#)

[Hydrogen: Cheaper than Natural Gas by 2050?](#)

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PODCAST

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THIS WEEK ASIA: FROM SECURITY TO CLIMATE JUSTICE?

Asia faces a mammoth juggling act. It is home to some of the world's fastest-growing populations with some of the fastest rates of urbanization and vulnerable to some of the worst impacts of climate change. It is quite a melting pot; one that is spurring a mixed bag of climate-related ambitions.

Some nations are clearly leading an ambitious charge, i.e., China and Japan have committed to net zero by 2060 and 2050, respectively. But question marks in flashing red neon lights still hover above many countries' plans and above particular markets, notably coal. For one, China is the world's biggest consumer of coal by far, as well as a major investor in other countries' coal-related projects. Against this complex balancing act, our esteemed speakers share where they think the spotlight must land.



Vasuki Shastry

Senior Fellow, US Chamber of Commerce & Associate Fellow of the Asia Pacific Programme Chatham House

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India being net zero by 2070 is probably the year to target as the developments within the country suggest that a mid-century target is not viable.

It is reasonable to assume that China is well on its way to its 2060 net zero target. But India and other developing countries need more time before committing to the rather aggressive deadlines that the US and Europe seem to be suggesting. Linked with this is the amount of financial assistance that the developed countries are willing to offer countries like India to help reshape their energy transition goals and move away from coal.

Elephant in the room?

Coal makes up 55% of India's industrial fuel mix. However, we need an explicit political commitment and a pathway that takes a broader approach to decarbonization, rather than a singular focus on coal. In this vein, electrification, a greater push for renewables, and removing fossil fuel subsidies are issues that need focus. When we talk about capital for climate adaptation, is there money to finance a pathway outside of coal? The solutions can already be found in the fiscal policy of many developing countries.

FULL PODCAST HERE!

Dr. Zulfikar Yurnaidi

Senior Officer – Renewable Energy and Energy Efficiency, ASEAN Centre for Energy



With its pace of growth, Southeast Asia has a gap of \$100bn annually in climate finance and overall infrastructure.

There is an opportunity to fill this gap with green and climate-friendly technologies and infrastructure. The region needs to direct a lot of funding towards renewable energy and energy efficiency in the next few years. But more importantly, we need to look at how we can strengthen the infrastructure in countries like Vietnam, which has had a solar revolution in the last two years. In the short-term, countries in the region will be more focused on an economic recovery rather than a green recovery post-pandemic. But now is the time to ensure that the infrastructure, capacity building, and policies are in place so that in the mid to long-term, we are in a better place in terms of our climate goals.

Positive signs in the region?

Singapore already has a net zero target for the second half of the century and Indonesia has developed three scenarios, one of which is the low carbon scenario that would allow the country to be net zero by 2070. We see similar pledges from other countries. Such movement could be further intensified with the support of developed countries. The US' stronger stance towards climate change will certainly place pressure on the global community for more commitments and cooperation on climate change.

60 of the world's largest commercial and investment banks invested \$3.8trn in fossil fuels from 2016-2020!

1/ Banking on Climate Chaos 2021

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PODCAST



Dr. Ning Lin
Chief Economist, Bureau of Economic Geology, The University of Texas at Austin

FULL PODCAST HERE!

China has made a strong climate pledge and is taking concrete actions towards it. But do not expect one of the world's biggest fossil fuel consumers to make a rapid shift from oil and coal. It takes time to turn around such a big ship! For some, there were some reservations about the seriousness of China's President Xi Jinping's announcement that the country would be targeting net zero by 2060. This was especially due to the fact that China did not specify any plans to phase out building new coal plants. However, these two positions – net zero and high coal consumption – are not completely conflicting. In China and many Southeast Asian countries, the intention to curb coal consumption is there. But it will take time. Today, coal and oil combined make up 80% of China's energy mix. To meet its 2060 target, China has to cut this by half by 2040. A rapid shift would only disrupt the system.

Coal divestment: Ambitions to reality?

Another issue to look into is financing. Coal financing is going to be harder as countries make stricter climate commitments, but it is not going to disappear overnight. Actually, global coal financing has slightly increased since the signing of the Paris Agreement. This trend will likely not continue. The pandemic has made people more concerned about the vulnerability of the current systems and determined to make a change. But remember, it is not going to happen overnight!

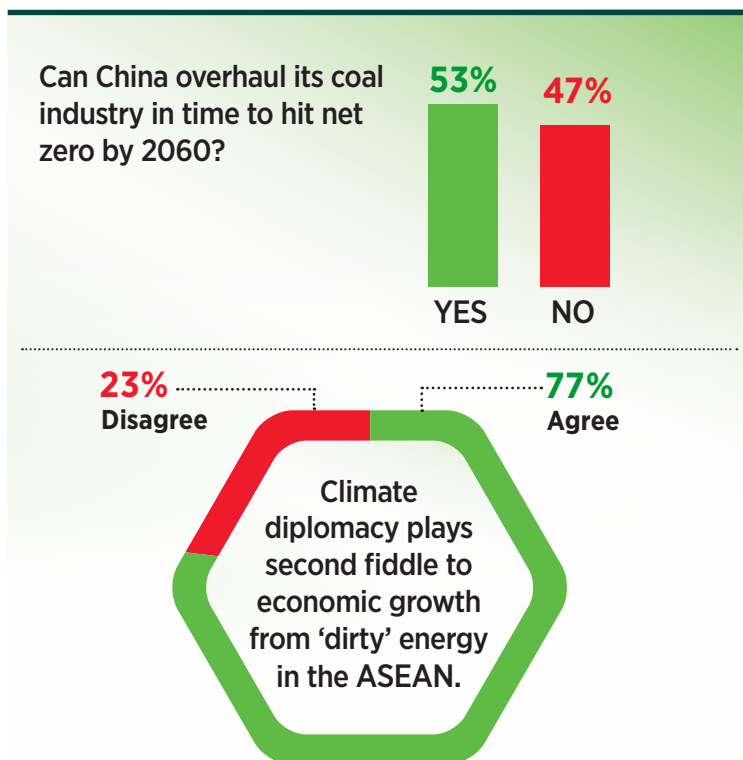
\$1.6TRN is what China could save over 20 years by switching from coal power to renewables, said Transition Zero.

SURVEY ANALYSIS

Ouch! Asia's Climate Confidence Take a Hit.

Asia is home to the world's biggest energy consumers and populations – and yet neither survey answer inspires confidence.

How worried should we be? A little. Still, many of the leading economies in the region have committed to net zero targets by mid-century, or 2060. Many have also dramatically upped renewables as part of their energy mix, or are planning to, while also taking an increasingly proactive part in the global climate conversation. Most recently, Beijing said it would cooperate with the US on climate change and China's growth in wind power, for example, is astonishing. New wind power capacity figures showed a staggering 71.7 GW was installed in China in 2020 – more than double the country's previous annual growth record, according to the National Energy Administration. So, there are many bright spots but an equal number of suspicions. The best countermeasure to strengthen the region's reputational climate credibility is to curate detailed net zero roadmaps. Silencing the doubters means walking the walk – and soon.



Survey source – ETD

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INSIGHTS INTO INDIA

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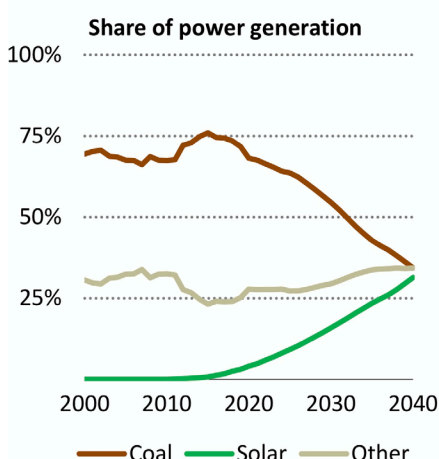
SOLAR POWER INDIA'S GOT IT!

But Getting More Will Get Harder...

By Bill Spindle

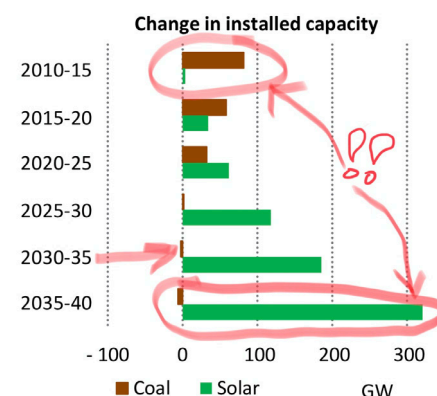
As many of you have noticed - especially those in India - the country is enduring a big Covid-19 spike.

That's causing new hardship for Indians. Difficult to know how exactly it will all disrupt transportation and travel, but surely it will. In the three weeks or so before I get to India, I'm going to risk a bit of a wonky start to this substack. Think of it as an investment, so when the more interesting on-the-ground reporting comes, the larger context will be clearer. In a way, the journey is a look at India's energy past, its present, and its future. To oversimplify: its past is coal, its future is solar. The chart below from the International Energy Agency's (IEA) recent deep dive into all things Indian energy pretty much says it all.



Source: IEA India Energy Outlook 2021

But the present is what I'm most focused on, a moment of furious transition. Coal remains tenaciously woven into the fabric of India's economy, politics, and society. You can see that in the chart below. It's an IEA future scenario based on the policies that India pretty much already has in place. Note, despite the amazing change in the kind of energy that gets added to the system between 2010-2015 and the 2035-2040 projection, coal capacity doesn't even begin declining on a net basis until after 2030.



Now, some smart analysts — particularly at the Institute for Energy Economics and Financial Analysis (IEEFA), whose consistently terrific work on India underpins much of my own thinking — believe coal could come out of the system faster than that, as the actual burning of coal falls faster than the capacity to burn it. India is reportedly considering a net zero carbon emissions target, as well, which if adopted might spur a more rapid decline of coal. But whatever the pace of coal's demise, it won't go easily.

At the same time, solar energy is racing ahead to such an extent that it will likely

encounter obstacles of its own creation unless India moves quickly to continue accommodating its rise.

Today I'll look at the second part of the transition: the stunning rising of India as a global renewables powerhouse, a development as unexpected as it is monumentally important for the planet's fortunes. Without India's embrace of renewable energy, we'd all be looking at a much darker climate future. It's eye opening how deeply an energy source can penetrate a society — as fossil fuels have everywhere, no less so in the West — and yet equally startling to see how quickly the calculus is changing around what was once, but is no longer, India's go-to-first fuel option.

Finally, before hitting the ground, I'll quickly review the extensive and daunting climate challenges India faces. They're not unique in type, but are exceptional in breadth and scale, especially compared to the resources available to address them. These challenges are not unrelated to India's energy transition, of course, even though Indians bear little responsibility for the current global warming.

India is also pretty much the only major country keeping ahead of its commitments under the 2015 Paris Agreement. But its emissions are rising fast to third on the global emissions rankings and could eventually top the world charts. There's also India's acute air pollution problem, to which fossil fuels contribute no small part. In short, India has plenty of incentives to accelerate the transition, especially if wealthier countries more responsible for the current predicament step up appropriately.

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