

Energy Transition

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ENERGY TRANSITION REPORT INSIGHTS EXCLUSIVE SOUNDINGS HYDROGEN

New Optimism for Carbon as Feedstock for Consumer Products

Dr. Jennifer Holmgren, CEO, LanzaTech

Within the next three to five years, we are going to see much more circular carbon projects. The opportunity comes from carbon capture and reuse and creating products that you can sell. We are all realizing that carbon capture and storage (CCS) is a cost, however, it is still important that we capture and put back carbon into the ground. What we are seeing now are technologies in carbon dioxide transformation getting into the commercial stage, by companies like ours, where we capture carbon monoxide, hydrogen and carbon dioxide and convert it to products. We have made sustainable aviation fuel, polyester for clothes, and perfume. The next exciting thing will be in food, where CO₂ can be used as a feedstock to make protein.

How far are we into this decarbonized world?

We are still just at the very beginning but the new technologies and approaches that are being scaled today are going to have an impact in five to ten years. The commitment of heavy industry to decarbonize was a big realisation to come out of COP26. Cement, steel, and refining all need to decarbonize quickly. We are seeing commitments being made across industries worldwide which are reducing their carbon footprint, either by carbon capture and sequestration or by utilizing it. The solutions out there are at scale and bode well for the next five years.



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CLIMATEPENPAL.ORG



CONTINUED *Dr. Jennifer Holmgren, CEO, LanzaTech*

Are 5-year timelines achievable given recent energy security concerns?

It is extremely important for us to think aggressively with our five-year targets. We go through these energy security cycles with fossil fuels every few years. At some point, we just need to stand up and say we are not going to take our foot off the pedal and continue to move forwards with decarbonization and CCS.

How soon can the carbon circular economy come into play?

I have seen tremendous progress in turning waste to feedstock in the last five years. The conversation so far has been around reuse, but now we are talking about making products from waste carbon. It's very exciting. At the same time, we still need hydrocarbons to make products that come from polyethylene and polyester. But if we can engage with the petroleum sector, it has so much of the infrastructure that could help accelerate in reaching our goals. Those working on green technologies as alternatives

to petroleum and the people working in the petroleum sector need to come together and accept that we need to go faster.

What has been slowing CCS adoption down?

It is important to understand that technology deploys exponentially. It needs to get the first commercial plants up and running and if that then makes commercial sense, adoption can start to double etc., which is what happened with solar. Technologies that are part of the carbon circular economy or CCS are at a very early stage - some are emerging and others are at the commercial stage.

Is the price for carbon still important?

If you had asked me five years ago, I would have said we don't need it but today, we absolutely do because the difference now is we need to go much faster.

[FULL INTERVIEW HERE](#)

CIRCULAR CARBON ECONOMY: "Within the next three to five years, we are going to see much more circular carbon projects. The opportunity space comes from carbon capture and reuse and creating products that you can sell. We are all realizing that carbon capture and storage (CCS) is a cost, however, we are still going to need some of it, and it is still important that we capture and put back carbon into the ground."

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INSIGHTS

The Free Power Flywheel



Bill Spindle
Council on Foreign Relations
International Affairs Fellow, India

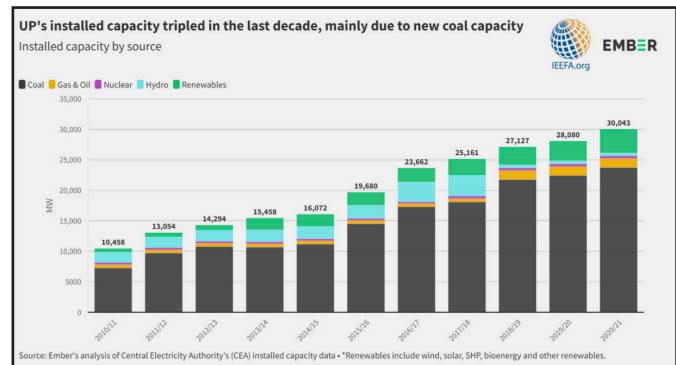
In many Indian states the politics of electricity has hamstrung renewable energy.

Ah, to be an Indian power consumer during election season. The offers of free electricity — for farmers! for the poor! for everybody! — come in from all sides.

When I passed through India's biggest state earlier this year, political parties were competing furiously for a poll that would determine control over the mega-state. Uttar Pradesh, located in India's north, has a population of 280 million, enough to rank it as the world's fourth-most populous country. The stakes are enormous here, locally and nationally. Uttar Pradesh is so big, and so influential within India's political economy, how and when the energy transition happens here matters on a global scale.

The campaigns underscored perhaps the biggest challenge facing India's clean energy transition: the politics of the country's energy market.

As I hopped between campaign rallies and interviews with electricity industry players, the parties were touting electricity giveaways they vowed to enact and the industry players lamented the fiscal mess this would ensure continues. Uttar Pradesh's main opposition party was promising 300 kilowatt hours of free power monthly for all — enough to cover what poor and lower middle class families consume — while assuring around-the-clock power (i.e. considerably more than the 12-18 hours many consumers live with now); Another opposition party seconded that, and upped the ante by promising to waive past electricity bills (and there are many, as non-payment is endemic).



The dominant Bharatiya Janata Party (BJP), which controls both the state and India's central government and thus has the most incentive to restrain itself, nonetheless assured farmers they would continue to receive free electricity for irrigation, as they have for decades. Farmers are the most powerful voting bloc, in Uttar Pradesh and nationally, so cannot be ignored.

The electricity sops — resembling those in nearly every state election across the country — underscore India's long-standing view of electricity: something between a hallowed right of citizenship and a political gift in exchange for votes. This has led to a chronically loss-making power sector and a utility industry bankrupt on an epic scale.

Not everyone benefits from the freebies. Business and industry are determinedly overcharged. Farmers, on the other hand, enjoy almost completely free power. Urban households are systematically undercharged. Cheating and outright power theft — often by illegally tapping into suspended power lines — are widely tolerated. By official admission, between one-fifth and a third of power goes unpaid for. Knowledgeable officials told me the real figures are likely higher since huge swaths of consumption are not metered, more or less by design.

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Tatiana Abella

Founder & Managing Director
Goumbook

Lack of Transparency in Business Sustainability

One of the biggest issues today is that ESG is used as a marketing tool but there's no transparency around strategy, planning, and reporting. We don't really see what's going on. There are no proper investments made, and sustainability is just being used for communications. We have met companies where the leadership or the management does not understand what the Sustainable Development Goals are. It would be interesting to see, for example, licensing bodies here in the UAE being more proactive. It would be good if they would start asking companies what they are doing on sustainability? Are they reporting and do they have an ESG framework? Regulation and policies need to make companies more transparent and follow the proper channels.

Sustainability Strategy Must be Top Down

Companies should ask themselves if their sustainability strategy is embedded into their business. The litmus test would be that when budgets are cut, whether it is sustainability measures that go first. If during a business crisis, you still understand that your sustainability ecosystem needs reinforcement and investment, that proves that it is really part of your strategy. And this must come from the top because if it is only driven at a single departmental or individual level, those efforts would go once that person leaves the company. Finally, from a consumer point of view, individuals need to be more aware and educated about sustainability. ■

**Paraphrased Comments*

Dr. Michaël Tanchum

Senior Associate Fellow
Austrian Institute for European and Security Policy



Morocco's Green Mobility Revolution

Rabat's recent announcement that it would soon sign an agreement for the construction of a "gigafactory" to make electric vehicle (EV) batteries has placed Morocco in pole position to become a green mobility leader in the Middle East and North Africa. A development of enormous significance for the kingdom, Morocco's rise as a global-scale, EV manufacturing hub is as critical to Western supply chain resilience as it is to promoting carbon-free mobility to combat climate change. The focus on shortening supply chains to ensure the stability of European consumer markets has already fueled the rapid advance of Morocco's automotive manufacturing sector and its development of more advanced manufacturing processes. Now, Morocco's reserves of critical battery minerals are accelerating its entrance into EV manufacturing. With ample solar and wind energy resources along with utility-scale infrastructure already in place to utilize them, Morocco has the potential to drive a green mobility revolution by powering the production of EVs using renewable energy.

Nearshoring: The driving momentum behind Moroccan EV manufacturing

The production of EV batteries on a gigafactory scale would be appropriate for Morocco's impressive automotive manufacturing ecosystem, which already has the capacity to produce over 700,000 vehicles per year. Now Rabat is aiming to increase Morocco's output to 1 million vehicles per year by 2025, with many of those being EVs. Already in November 2021, Morocco's public finance bill for 2022 proposed a reduction of the import duty on lithium-ion cells from 40% to 17.5% to promote the local assembly of Li-ion batteries using cells imported from East Asia. The key to Morocco's rise as a green mobility manufacturing giant will be expanding its automotive ecosystem to include local manufacture of Li-ion batteries, which represent 30% to 40% of the cost of the average EV. The new gigafactory could thus accommodate producing the targeted additional 300,000 vehicles as EVs. Nearshoring, combined with Rabat's smart industrial planning and careful cultivation of foreign partnerships, is the engine of the self-reinforcing momentum propelling the advancement of Morocco's automotive manufacturing sector. ■

Source: Middle East Institute

EXCLUSIVE SOUNDINGS



NET ZERO: “To address climate change, we need to frame questions in ways that do not separate the technical, causal, and instrumental aspects from values and local environmental concerns. Instead of asking, “How do we get to net-zero by 2050?” we should ask, “How do we get to net-zero, preserve a healthy environment, and conserve biodiversity, while also ensuring that our solutions are fair to all affected communities, and that they account for pre-existing patterns of injustice?”

H el ene Landemore

Professor of Political Science, Yale University

Source: Project Syndicate

Energy Efficiency: “All the GCC countries have ambitious renewables and energy efficiency targets, although energy efficiency could be the single biggest contributor to reaching climate goals more than renewables. They can achieve these goals by using existing technology, and quickly, with clear benefits from the lower expenditure on energy and reduction of CO2 emissions. This can help curb primary energy demand, thus easing new supply.”

Stephen Jennings

Head of Energy for EMEA, MUFG



Source: Zawya



CHINA: “China seems committed to achieving net zero and will pursue it using a number of different ‘levers’. The three key levers which each bring possible investment opportunities are: energy efficiency improvement through enhanced technologies, improving the power generation mix and transforming the national power supply system, and the long-term decarbonization of heavy manufacturers.”

Virginie Maisonneuve

Global CIO Equities, Allianz

Source: Investment Week

REPORT

US-CHINA SUSPENSION ON CLIMATE COOPERATION: RESTORING TRUST IN A TRUST DEFICIT WORLD

By: *CN Innovation*

This past week, from 28 August to 1st September, thousands of energy industry leaders met in Stavanger for the biennial ONS Conference and Exhibition, under the theme of “TRUST”.

One of the biggest debates was centered around how to pursue cooperation in an era of trust deficit when climate security threatens humanity’s survival and future. From political leaders and royalties - Norwegian Crown Prince and Prime Minister, Ukrainian President Zelensky (online) and Belgium Prime Minister, to energy industry professionals and leaders - Elon Musk, IEA Executive Director and energy company CEOs, all believe trust is essential to advance bilateral cooperation, government-academia-industry collaboration, and multilateral welfare governance.

CN Innovation CEO, Xavier Chen, shared the podium with a top US energy expert, at the opening day on “Co-existence in the Energy Market”. Naturally, the US-China trust crisis in climate cooperation was brought up, and Xavier Chen used the ancient Chinese story of “Axe Thief” to metaphorically describe the US-China contention.

“A farmer could not find his axe and suspected that his neighbor’s son had stolen it. He watched him far and close. Every move and everything the young boy did reflected exactly how an axe thief would have behaved. But when he finally found the axe he had forgotten in his own backyard, he looked at the young boy again. Now

nothing he did reminded the farmer of an axe thief any longer.”

This Insight China report explores the issue further and discusses climate cooperation in a world of trust deficit.

The Distrust:

In a retaliative response to the US House Speaker Nancy Pelosi’s recent visit to Taiwan, Chinese government announced on August 5, 2022, a comprehensive suspension of cooperation with the US, and the last item on the list of eight is climate change. This was followed by both sides pointing fingers to each other, causing wider worries of tic-for-tac escalations of tensions.

It proves demoralizing and devastating when the world’s two largest economies and emitters turn against each other, at a time of intensifying climate crisis that harms and threatens lives, health and livelihoods of billions of people well beyond the US and China. A major reckoning is that a country’s foreign policy to the other defines and underscores bilateral climate cooperation. As we have learned so far, “champion” the latter without a trustful and cooperative foreign policy as its foundation proves more lip services than deeds.

Foreign policy vs climate cooperation
We argue strongly that bilateral climate cooperation does not exist in vacuum, nor can it survive in an “oasis surrounded by encroaching deserts”. Rather, it is nurtured and underscored by a country’s foreign policy to the other, guided by the political vision of global governance.

The contrast evidence is reflected by:

- The “US-China Joint Announcement on Climate Change”, Beijing, November 12, 2014: after years of absence from international climate process, the Obama administration made a strategic decision to announce the US intended nationally determined contribution (INDC) to the Paris Agreement, jointly with China.

- And the “US-China Joint Glasgow Declaration on Enhancing Climate Action in the 2020s”, November 10, 2021, that “unified” a narrative leading up to COP26.

President Obama has said, “The relationship between the US and China is the most important bilateral relationship of the 21st century.” This strategic vision had set the foundation for a US China policy that proved constructive and productive. It is a mutually shared vision.

Back then, Biden served as Obama’s Vice President, so he is an “insider”. But he has abandoned that legacy, instead, he has carried on a confrontational China policy of his rival predecessor – President Trump who framed China as the biggest national security threat and strategic rivalry, and his administration has executed a “systematically-designed” communication strategy to incriminate and demonize China.

Source: © CN Innovation (www.cn-innovation.tech).

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