

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

ENERGY TRANSITION DIALOGUES

INTELLIGENCE BRIEFING

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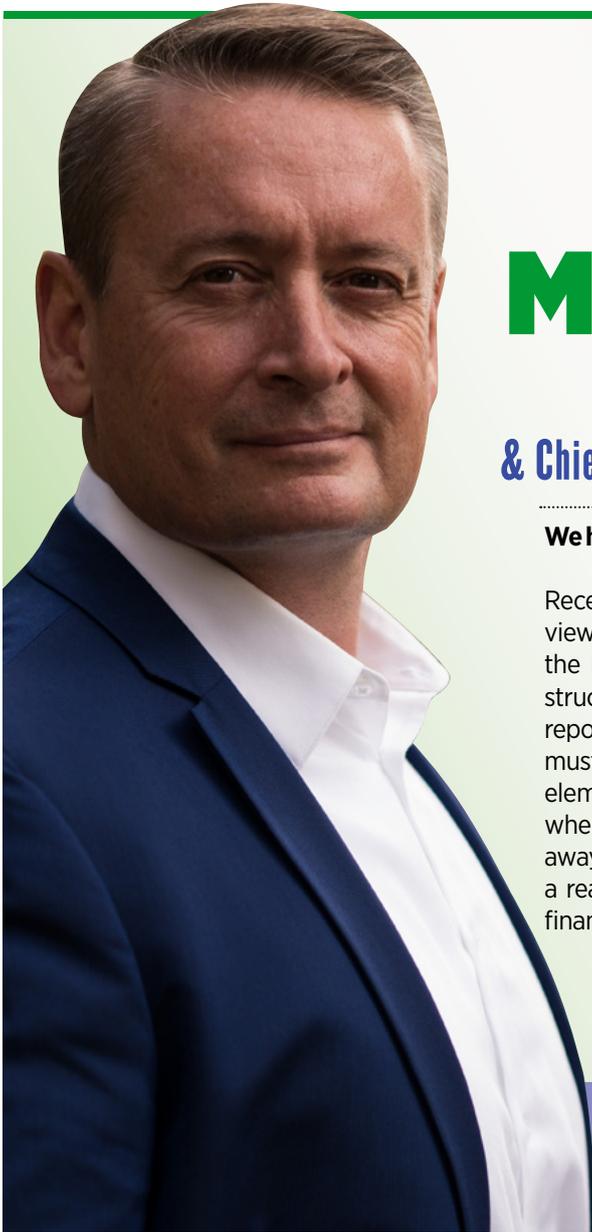
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SCROLL DOWN!

HYDROGEN'S BUSINESS MODELS?

FINANCING NET ZERO?

SURVEY: ALL IS NOT WELL (YET)



TWO MINUTE WARNING

ESG: Data is Missing Element!

**Tim Mohin, Executive Vice President
& Chief Sustainability Officer, Persefoni AI, Former CEO, GRI**

We have never seen such dynamism in environment, social and governance (ESG) investing – Covid-19 has doubled down on momentum.

Recent estimates show that the assets under management that are being viewed through an ESG lens will hit over \$50trn by the end of 2021. Clearly, the market is moving ahead well. We are seeing changes in regulatory structures in the US and Europe, plus changes in international financial reporting standards. And a lot of changes are coming – smart companies must pay attention. This especially applies to data – a critical yet missing element. The lack of good data in ESG also increases the risk of greenwashing, whereas strong data can strengthen sustainability efforts. We must move away from outdated methods of gathering ESG information and turn to a real enterprise resource planning (ERP) system, as we have done in the financial systems for years. It allows better assessment and prioritization of investments – a good idea for all!

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\$53TRN

is the value that global ESG assets may hit by 2025
– a third of the world's assets under management.¹

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¹/ Source: Bloomberg Intelligence

HYDROGEN

Greater Commoditization Needed – and Soon!

Dr. Joaquin Narro

Managing Director, Alcazar Investment Management

“Passing the tipping point” in the development of hydrogen means overcoming several challenges.

These include the need to reach a critical mass of investment between now and 2030. In Europe, this means investments in electrolyzers should range between €24bn-€42bn and that €220-€340bn will be required to scale up directly and connect 80-120GW of solar and wind energy production capacity to the electrolyzers. Plus, the investments required to retrofit half of the existing plants with carbon capture and storage (CCS) are estimated at €11bn, with another €65bn of investment needed for hydrogen transport, distribution, and storage. Add to this the value of an enabling framework with supportive and homogenous regulation and targeted incentive programs. Plus, the need for new lead markets, such as adapting end-use sectors to hydrogen consumption and hydrogen-based fuels (like steel making, road, and transport sectors).

Don't ignore pricing...

I encourage investors to look at the subject of pricing: the factors that define the price of hydrogen need to be understood to achieve realistic and accurate pricing. Fixed costs can be

2050 is when green hydrogen could cost less than natural gas.¹

¹/ BloombergNEF

“HYDROGEN NEEDS AN OPEN AND COMPETITIVE MARKET WITH UNHINDERED CROSS-BORDER TRADE – THEN INVESTMENTS CAN MATERIALIZE IN EARNEST.”

investigated, like capital and operational costs. However, the main interest lies in variable feedstock costs that are representative of the spot energy costs in every region, i.e., the cost of gas, electricity, emissions, guarantees of origin, and so on. These variable costs are already commoditized and provide useful and well-worn stepping-stones towards the bankability of projects.

Ask the right question...

Neither green nor blue hydrogen are currently cost-competitive against grey hydrogen, which uses fossil fuels. Given the multiple factors that affect the cost of hydrogen production, together with the imperative need to reduce carbon emissions, a key question should be:



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how can the cost of green and blue hydrogen production converge to eventually undercut the cost of grey hydrogen production? At the moment, the European Commission puts grey hydrogen production at around €1.5/kg, versus blue hydrogen at around €2/kg and up to €5.5/kg for green hydrogen. Looking ahead, several factors will impact production costs. An important one is the ability to harmonize standards and commoditize hydrogen, encouraging transparency and price discovery. Plus, the European Commission estimates that carbon prices in the range of €55-90/ton of CO₂ are needed to make blue hydrogen competitive with grey hydrogen.

TOP 5 NEWS STORIES

[A Hydrogen Future for Planes, Trains & Factories?](#)

[Hydrogen Start-up Raises Funds](#)

[The Race between Hydrogen and Batteries?](#)

[Solar-to-Hydrogen Tech's Efficiency Jump](#)

[Orsted to Link Wind Farm to Hydrogen Production](#)

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THIS WEEK FINANCING NET ZERO?

2,000+ That is how many companies of all sizes worldwide have joined the Race to Zero arranged by the United Nations Framework Convention on Climate Change (UNFCCC).

In approximately a year, we have seen a collection of the world's biggest economies step up and commit, including the US and China, the world's first and second largest economies, respectively. The US' decision was on a bit of a tightrope due to the election, but the result with the Biden administration has increasingly paid off. Now the pressure is on to make sure that verbal commitments are fully translating into work-on-the-ground and financial support packages, especially as nations meet at the UNFCCC Climate Summit, also known as COP26, in Glasgow this November. The hope is that detailed roadmaps with firm regulatory and policy architectures, well-funded research and development (R&D), talent enhancement, finance support packages, and an increased culture of innovation emerge in seven months' time. Currently, the UN puts the global need to support climate adaptation at \$300bn per year, yet international financial flows to adaptation and resilience are estimated at only \$30bn per year. How to narrow this chasm – and soon?



Dr. Roland Kube

Economist for Energy and Climate Policy, German Economic Institute

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The priority in Europe? The Green Deal and all the policy instruments that are going to be designed and presented by June.

For example, the European carbon market needs to be revised with new regulations for sectors, like transport and heating, which currently lack an EU-wide carbon price. We must adjust the cap in accordance with new emission targets, making a drastic change and increase carbon prices. We are already seeing carbon prices rising in expectation of tougher emission targets – the correlation is there.

Greater respect for efficiency?

Energy efficiency is always included in the instruments and policies, but there is not a strong push in this direction overall. There are often talks about soft policies and other ways to address behavioral changes. Yet, these often under-deliver, or are overrated with a hard-to-measure impact. We cannot deny that there is still potential in so many applications – especially in transport and buildings – and that smart technologies can help bridge these gaps.

Rajeev Mahajan

Head of Project Finance-Private Sector Facility, Green Climate Fund



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The world lacks viable business models in the climate adaptation space, so we have too few projects coming through.

While organizations like the World Bank and Green Climate Fund could trigger some of these investments, there is still a lot of work that must be done to craft scalable business models. The good news is governments are realizing that this must be a priority area.

Hearts and minds?

Achieving behavioral change and an open attitude towards green investments is still a challenge. The issue is even more acute when it comes to industries where these investments could be rather disruptive. Therefore, there must be financial

incentives to make it easier for board members to approve such investments. One example is an industrial energy efficiency investment program that the Green Climate Fund proposed to seven countries in Eastern Europe and Central Asia. The unique funding approach meant we made it easier for management to support the idea by offering increased support if they agreed to develop a green roadmap and proceed with the investments. We need more of these creative tools!

2,799GW was the world's renewable energy capacity in 2020 – rising 10.3% year-on-year.¹

^{1/} International Renewable Energy Agency (IRENA)

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Jes Rutter
Managing Director, JRP Solutions

Energy efficiency – a key part of net zero – is broken down into two elements of equal importance.

One is technical projects and the other is behavioral projects. The latter is simply being ignored globally! More investments are needed to cultivate this untapped potential. We will never get to net zero if we do not engage people. There are more than 140 different types of behavioral interventions. These must be done on a holistic enough basis to be measurable and accurately accounted for.

Green energy tariffs: misleading!

Although they have been around for a while, green energy tariffs are unquestionably misleading. While there are different levels of certification behind the data, there is still a lack of confidence and people do not know where the actual resources are coming from. This area needs immediate attention.

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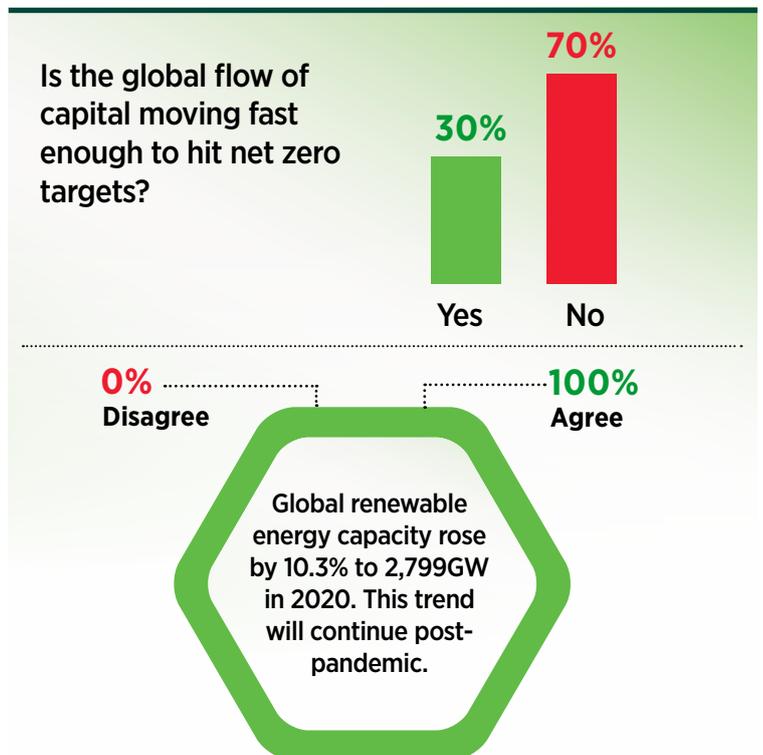
\$29TRN is the climate investment potential across 21 emerging markets, representing 48% of global emissions.¹

1/ International Finance Corporation (IFC)

SURVEY ANALYSIS

Financing Net Zero: All is Not Well (Yet)

We are back to an age-old argument when it comes to low carbon growth: an insufficient flow of capital. More than two thirds of respondents (70%) say capital is not moving fast enough to hit net zero. But is this perhaps a little negative? We are in the swirl of a global gamechanger, one that is even turning down the volume on the frustrated decades-long row between environmentalists and corporates. Today, even as governments and investors grapple with the Covid-19 fallout, momentum for low carbon growth is greater than ever. News headlines are seemingly bursting with renewed vigor. Among many, US President Biden has called for more than a \$14bn boost in climate change investments in fiscal year 2022 and some of the world's largest investors managing assets worth more than \$9trn have committed to investing only in companies with net zero emissions by 2050. If this keeps up, the respondents to the second survey question just might be proven right.



Survey source – ETD

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