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

ENERGY TRANSITION DIALOGUES

INTELLIGENCE BRIEFING

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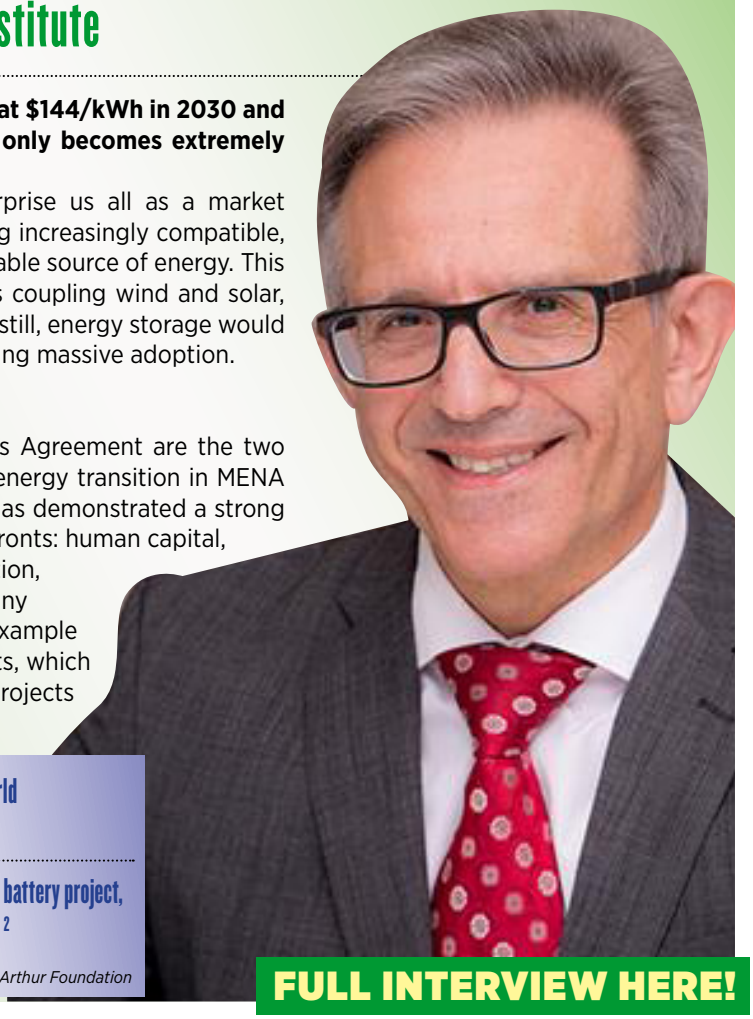
GI Consultancy Intelligence Publishing

SCROLL DOWN!

GULF'S GOLDEN H_2 WINDOW | BIG OIL'S CLIMATE TECH? | SHELL'S RULING SHOCKWAVE? | INDIA'S CLIMATE BALANCE?

WE MUST RETHINK ENERGY STORAGE – SOON!

Dr. Antonio Sanfilippo, Chief Scientist, Energy Management Program Director
Qatar Environment & Energy Research Institute



Energy storage is still too expensive. Costs are projected at $144/kWh in 2030 and $88/kWh in 2050 for a 4-hour battery system – and it only becomes extremely feasible below $100/kWh.

But let us not forget hydrogen storage, which may surprise us all as a market gamechanger. Yes, renewable energy sources are becoming increasingly compatible, but there are challenges! One is that solar is not a dispatchable source of energy. This raises the question of security and reliability. A solution is coupling wind and solar, which are quite complementary in terms of availability. But still, energy storage would really be the turning point for renewables in terms of spurring massive adoption.

Qatar's on track?

Infrastructure investments and a commitment to the Paris Agreement are the two main drivers behind Qatar's top ranking for fostering the energy transition in MENA in the World Economic Forum's (WEF) 2021 Index. Qatar has demonstrated a strong transition readiness that stems from maturity on different fronts: human capital, consumer participation, institution and government regulation, and political commitment, plus infrastructure. There are many ongoing projects – and the number is only increasing. An example is the construction of 800MW solar photovoltaic (PV) plants, which will be completed by the end of 2021, among many other projects that are scheduled for completion by 2025.

1st is Qatar's score in the Middle East and North Africa (MENA) in the World Economic Forum's Energy Transition Index (ETI) this year. [1]

1,200MW is the size of the world's largest proposed grid-scale battery project, by CEP.Energy, a renewable energy fund in Australia. [2]

1/ World Economic Forum 2/ Ellen McArthur Foundation

FULL INTERVIEW HERE!

Middle East's Golden Window?

HYDROGEN

Dr. Laura Nelson, Executive Director, Green Hydrogen Coalition
Former Executive Director of the Utah Office of Energy Development

Hydrogen has clearly reached a tipping point, which brings a whole wave of revenue opportunities for the oil-centric Middle East. If we are to see demand for oil decline, as forecast by the likes of the International Energy Agency (IEA) and International Renewable Energy Agency (IRENA), the national oil companies should take advantage of the opportunities in hydrogen. It is only natural that they pivot to cleaner sources to remain competitive in the energy world of the future.

Global picture?

Japan has been very involved in a hydrogen economy, making investments in infrastructure, liquefied hydrogen facilities, and piloting maritime options in partnership with Australia. In the US, we are set for the first global conversion of a coal-fired plant to a green hydrogen facility, which is expected to be online by 2025. We are going to continue to see the emergence of green hydrogen projects that take advantage of local resources,

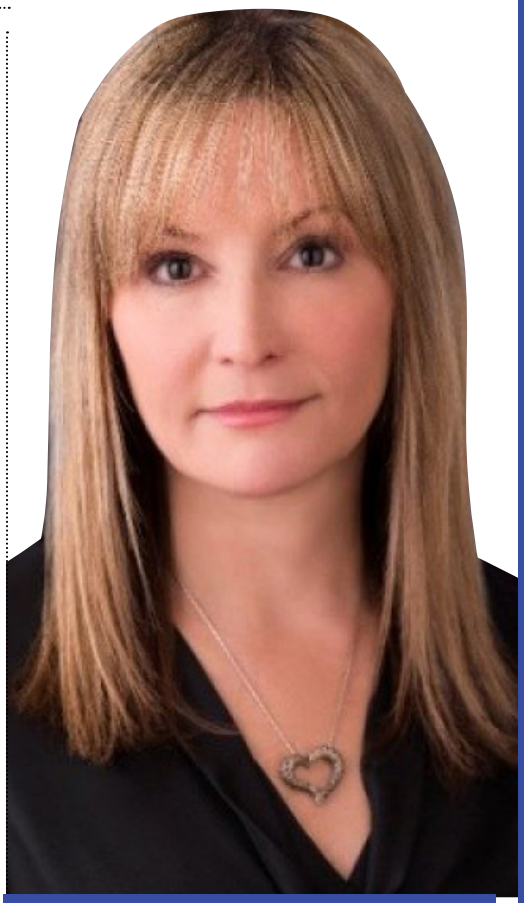
$7.4BN

has been committed by Hyundai Motor Group to invest in hydrogen in the US by 2025.[3]

whether it is the oil sector, the power sector, or natural gas – they are all going to come into play in the energy transition to a significantly greener energy economy.

First step?

We need regulatory certainty. When you have that, plus a refined framework, you are going to attract investment. When you attract investment, you are going to start scaling up. In turn, this brings down the cost so that molecules are more affordable to the end-user. But it all needs more regulatory goal posts.



FULL INTERVIEW HERE!

1st is the US' global ranking when it comes to fuel cell electric vehicle (FCEV) stock.[1]

$50MN

Joint Actions have been identified by Australia's National Hydrogen Strategy to ensure progress across the entire supply chain up to 2030.[2]

1/ International Energy Agency (IEA)
2/ FirstElement Fuel
3/ Reuters

TOP 5 NEWS STORIES

- Russia Seeks Closer Ties with Saudi on Hydrogen
- Bee'ah to Build Region's 1st Waste to Hydrogen Plant
- Germany to Invest $10bn in Hydrogen
- Sinopec's Hydrogen Ambitions
- Obstacles to a Hydrogen Revolution?

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PODCAST

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THIS WEEK BIG OIL & CLIMATE TECH: WHAT'S NEXT?

Tarry Singh, Founder & CEO, deepkapha.ai
Founding Member, Focus Group AI4H, WHO

FULL PODCAST HERE!

We cannot suddenly make the oil and gas industry the black sheep.
An enormous amount of technological investment has gone into making the industry more efficient. Are these legal battles, as seen with Royal Dutch Shell being ordered to cut its global carbon emissions by 45% by the end of 2030, and extreme climate-related pressure necessary?

It is up for debate. But what is certain is that these companies are investing a lot of time and money into reducing their CO_2 emissions and increasing their climate action. In the next three to five years, we will see Shell, Exxon Mobil, and other big oil majors making huge investments to accelerate their climate action. This is why we are very positive that these companies are shifting gears.

FULL PODCAST HERE!

Dr. Satyam Priyadarshy, Technology Fellow & Chief Data Scientist, Halliburton

Digital transformation is a misunderstood term. It is not something you have today or tomorrow, nor is it an endpoint. Rather, the digital transformation is a journey.
When you start looking at an asset holistically, every year you can improve on it. In other words, the digital transformation and value creation will continue for the asset's lifecycle**.**
Another issue is moving projects from the proof-of-concept stage in research and development (R&D) to the actual production and commercialization. The concept is already known – we already understand the concept of AI, big data, machine learning, and so on. But beyond that is the proof of value. And that is what needs evaluating.

Oil faces do or die crossroad?
When it comes to oil majors' implementation of green strategies, it is a case of acting fast. The oil and gas industry is mature and has invested in technologies for the last two decades. They are also fully aware of what must now be done. The recent climate pressure that the industry is facing has changed the thought process of decision-makers when it comes to deciding to adopt digital technologies at a greater scale. This is especially true against the backdrop of the energy transition.

Jean Paul Sacy, Middle East Regional Director BakerHughesC3.ai

FULL PODCAST HERE!

Where do we stand when it comes to the availability and maturity of technological solutions to make climate targets a reality? The good news is that about 25% of the technologies that we need to decarbonize our industries are already available. It is just a matter of scaling them up.
The other 40% is currently at a very early stage and not yet ready to scale up. The remaining 35% relates to technologies that do not yet exist. Is the transition doable? Yes, but it requires discipline, willingness, investment, and proactive policy making – among many other factors!

Violent but necessary
The oil and gas industry has been driving technology innovation for more than 100 years; most of the modern world we live in would not exist without the industry's achievements. Looking ahead, the transition the industry must go through is violent. Is it easy? Is it happening yet? These are key questions we are all facing. The pace of the transition very much depends on the pressures and penalties that are imposed. But we must remember that a big chunk of the problem is solvable. It requires capital, willingness, and capabilities. The industry has innovated before and now it must do so again to eliminate CO_2 emissions.

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BIG OIL'S TURNING POINT

WHAT HAPPENED?

- The Hague delivered a judgment against Royal Dutch Shell, the parent company of the Shell group, on the 26th May – sending shockwaves through the global energy industry. The decision only applies in the Netherlands, but major fossil fuel firms worldwide – notably those criticised for lagging climate ambitions – are wary of facing similar judgements.
- It is the first time that a court has found that a company has a legal duty to reduce its greenhouse gas (GHG) emissions in line with the goals of the Paris Agreement. It is also the first time that international human rights standards have been used to inform a binding emissions-reduction obligation for a company.
- The court held that Shell's current policy of merely reducing the "carbon intensity" of its products by 20% by 2030 and aiming to reach net zero by 2050 would contribute to climate impacts that endanger the human rights of the plaintiffs.
- Now, Shell must cut its CO_2 emissions by 45% compared to 2019 levels by 2030 – more than double its original target. And the court said the Shell group is responsible for its own CO_2 emissions and those of its suppliers.
- The ruling was the result of legal action brought by Friends of the Earth Netherlands (Milieudefensie), together with 17,000 co-plaintiffs and six other organizations.

SHELL'S RESPONSE?

"Urgent action is needed on climate change, which is why we have accelerated our efforts to become a net zero emissions energy company by 2050, in step with society, with short-term targets to track our progress. We are investing billions of dollars in low carbon energy, including electric vehicle charging, hydrogen, renewables and biofuels. We want to grow demand for these products and scale up our new energy businesses even more quickly."

"We will continue to focus on these efforts and fully expect to appeal today's disappointing court decision."

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INSIGHTS INTO INDIA

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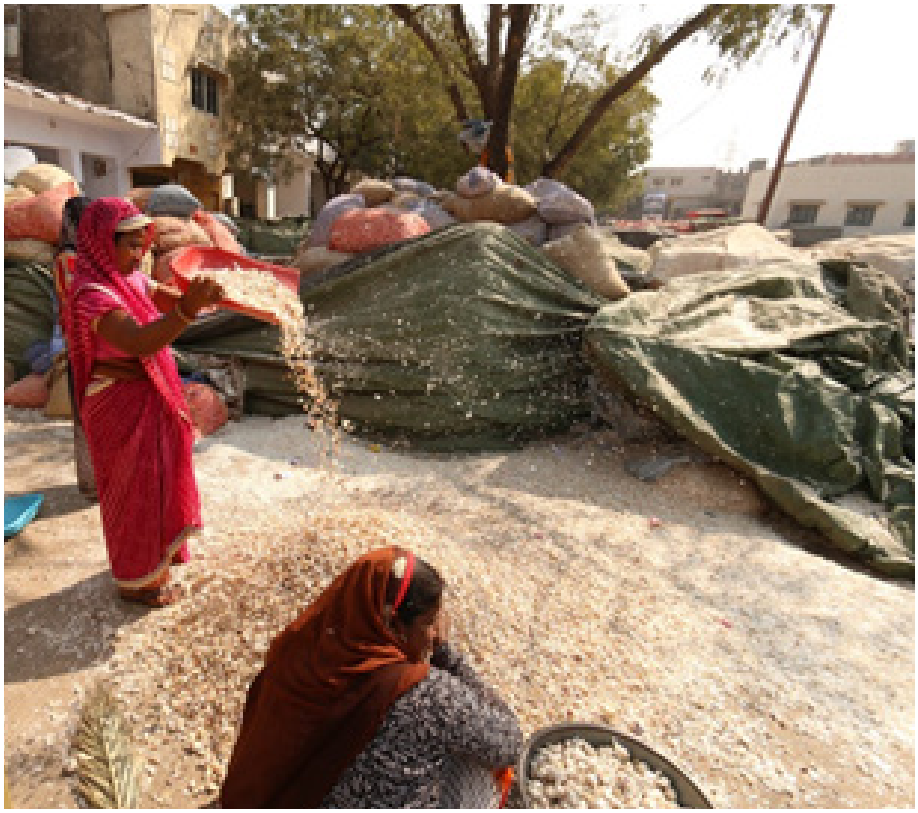
Covid, Climate and the Countryside...

Rural communities are a critical piece of India's climate and energy challenge. They're also part of the solution.

Bill Spindle
Council on Foreign Relations, International Affairs Fellow, India

India's Covid crisis has moved from the subcontinent's megacities to the countryside — that is, from where India's future will play out to where its past lives on to shape its present. I will explain this and also what this has to do with climate and energy.

Covid's retreat in the big cities marks the beginning of the end of major international attention devoted to India's crisis. Major international publications have noted this shift and, to some extent, its significance. But from here the coronavirus, in its increasingly variant forms, will do its destruction largely beyond the view of the world, even of Indian elites who live their lives in urban centers. The risks to all of us that arise from these hidden hinterland clusters of infection will not diminish for any of this. If megacities are the tip of the Indian iceberg — visible, indicating the direction of the country — India's many thousands of villages and rural hamlets are the iceberg. More than two-thirds of Indians (some 900mn people, almost three times the population of the US) live in rural areas, a place where almost one-fifth of India's economic output takes place and half the country's livelihoods are earned. Farmers, exalted by Mahatma Gandhi in the heyday of the India's independence movement during the first half of the 20th century, in many ways remain the political center of gravity for the country. This was demonstrated last year when millions of farmers descended on the capital to protest new laws governing the sale of agricultural output, paralyzing the government and transfixing the country.



Just as with Covid, when we talk about climate impacts in India and the country's critical energy transition, we are often focused on the urban, elite India. That makes some sense. Most of India's energy future consumption growth — likely to be the fastest of any country on the planet over the coming decades — will be in its cities as manufacturing and services expand and the burgeoning middle class purchase appliances, air conditioners and cars. Many of the worst climate impacts will also come to roost in the cities, including more frequent devastating cyclones (two of which have hit India's west and east coasts in recent weeks), rising sea levels in megalopolises like Mumbai and Chennai, and heat waves in cities where scorching summer heat builds disproportionately.

But none of that diminishes the climate threat to environs where the majority of Indians will live for many years to come, or the threats to the rest of the world from emissions that arise from there.

FULL ARTICLE HERE!

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WORLD ENVIRONMENT DAY

5 JUNE
1972 - PRESENT

50% OF THE WORLD'S GDP IS DEPENDENT ON NATURE. $1 INVESTED IN RESTORATION CREATES UP TO $30 DOLLARS IN ECONOMIC BENEFITS.

$10TRN AROUND $10TRN IN GLOBAL GDP COULD BE LOST BY 2050 IF ECOSYSTEM SERVICES CONTINUE TO DECLINE.

15% RESTORING 15% OF CONVERTED LANDS IN THE RIGHT PLACES COULD PREVENT 60% OF PROJECTED SPECIES EXTINCTIONS.

2BN OPPORTUNITIES FOR RESTORATION CAN BE FOUND ON 2BN HECTARES OF DEFORESTED AND DEGRADED FOREST LAND WORLDWIDE – AN AREA LARGER THAN SOUTH AMERICA.

Sources: Verdone and Seidl, 2017, Johnson et al., 2020, Strassburg et al., 2020, WRI, 2011

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