

Energy Transition



INTELLIGENCE BRIEFING

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SCROLL DOWN

BIONENERGY EXCLUSIVE SOUNDINGS INSIGHTS EVENTS THIS WEEK

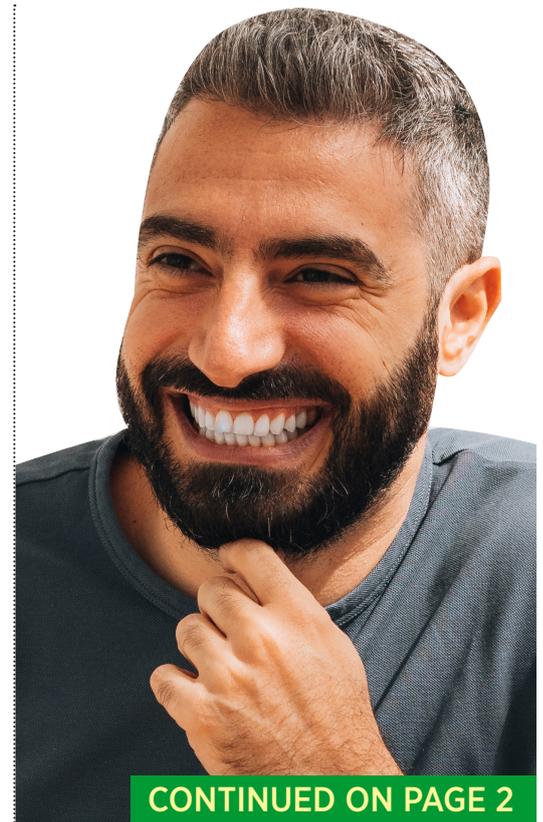
Less Food Waste Boils Down to Data and Partnerships

Q&A: Elie Skaf, Co-Founder & CEO, Right Farm

Agriculture as a traditional industry, and supply chains as an inherently inefficient sector, when plugged together, create a host of challenges where solutions are much needed. The pandemic and the war in Ukraine have further impacted food supply security. In our business of sourcing produce and distributing it to our markets, we get involved in many touchpoints across that value chain and we see enormous value to be added as well as benefits that can be created in line with sustainability. It all boils down to grasping the data from our internal processes and from the supply and demand side. Understanding the market size of agricultural produce can help optimize farm production, contribute significantly to the efficiency of supply chains, and reduce food waste. We are tackling those issues through data, projects, and partnerships.

How exactly are you leveraging data?

We employ machine learning on the core aspects such as pricing and forecasting. Our team mainly works on understanding our customers' segments and needs at an SKU (stock keeping unit) level. We predict their demand based on historical data and projections. We can go as granular as we want in segmenting information – whether it be the size of the restaurant, the type of cuisine, or menu. We relay this data back to our farm partners. Ultimately, the biggest key is getting the forecast accurate and then applying that data across the supply chain. The more data-driven the approach is in the agribusiness, whether in the farming or the supply chain, the less there will be wastage in getting that food to plate. We may not be able to prevent that 100%, but then we see other ways in which that can be done, such as recycling and upcycling of that food waste.



CONTINUED ON PAGE 2



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CONTINUED *Elie Skaf, Co-Founder & CEO, Right Farm*

What other ways can food security be enhanced?

Some key areas that can be worked on include government's policies that offer incentives or subsidies in agriculture. This can be useful for farmers especially in addressing water, electricity, and raw materials use. Secondly, a focus on empowering farms with data and insights can help them make decisions. Knowledge on market size for their specific produce can help address inefficiencies and waste in the farming process. Lastly, the sector can be supported in terms of how local and imported fruits and vegetables are priced.

What role are consumers playing in the shift towards circularity?

The end consumer essentially dictates what everyone before them in the value chain does. It is necessary to create awareness and educate them by shedding light on the issues and start shifting their mindset towards being more sustainable. For example, what we see with our chefs is that they usually don't get involved in the sourcing of their fruits and vegetables. Chefs are artists. They create delicious dishes. But they have a mindset bias towards the ingredients that they are used to and don't necessarily have the information they need on whether those same ingredients can be sourced

more efficiently. Traceability has a long way to go but we are heading in the right direction.

How important are partnerships to accelerating food sustainability?

The partnership between the government and private sector in investing in food technology is critical to drive the growth of impact driven startups which tackle food waste, and which engage in recycling or upcycling projects. One of the initiatives we have launched on the wastage prevention side is to match farms who have imperfect produce supply with purchasers who can make use of that produce.

What do you see as the next target for the food circular economy?

There is a significant increase in interest from the big restaurant chains to address the whole food waste issue. We want to use that to apply a more regenerative approach to food waste throughout the whole network and we look forward to projects such as transforming food waste into by-products that are useful in many cases within farms also. There are many opportunities in this area.

FULL INTERVIEW HERE

BIOENERGY:

REPOSITIONED FOR TACKLING NON-ENERGY SUSTAINABILITY PROBLEMS

Bioenergy or biomass energy is believed to be a sustainable fuel, given its life cycle effect of net-zero emission. CCS integrated bioenergy, or BECCS, is believed to have a major role in global netting-zero roadmap. However, China seems to have a rather differentiated consideration. Although bioenergy development is still very much encouraged, two recently published 14th FYP documents, namely the 14th Five-Year Development Plan of the Bio-based Economy (the Bioeconomy Plan) published on May 10 by the NDRC, and the 14th Five-Year Plan of Renewable Energy Development (the RE Plan), jointly released by eight ministries/agencies on June 1, chart a new course of China's biomass energy development. This Insight China report makes an effort to interpret this new positioning of biomass energy in China's green transition.

Bioenergy as part of a broader bio-economy: Contrary to the earlier five-year planning when a specifically designated FYP would be made for bioenergy, the current FYP planning, instead, has it covered in

two broader plans - one on bioeconomy and the other on renewables. The Bioeconomy Plan covers a very large spectrum of activities covering medical, healthcare, agriculture and food, forestry, energy, environment and material sciences and industries. The policymakers believe these activities are inter-related to one another, and prefer to see bioenergy development as part and within the framework of "strategic emerging industries around the bioeconomy", much broader in coverage and larger in scale. The Bioenergy Plan is more focused on innovation, including identification of fast-growth, high-yield, and highly resilient energy crops; conversion of municipal wastes into ethanol, biodiesel and bio-methane; utilization of municipal wastes for heat and power generation, utilization of solid biomass materials for heat and power co-generation and to replace coal for residential heating, etc. No specific target is set for any time horizon.

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

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INSIGHTS



“We are going through an energy crisis that threatens our climate goals and energy security and independence all in one”

Kadri Simson, EU Commissioner for Energy

The ripple effects of the Russian aggression in Ukraine have kick started a huge change in our geopolitical environment. In recent days and weeks, Russia has again and again demonstrated that it is an unreliable supplier who uses energy as a political weapon – trying to single out targets across the EU.

The disruptions in gas flows to a number of countries are clearly designed to undermine the EU's unity and determination in the face of Kremlin's invasion of Ukraine. But the EU has remained united. Six packages of sanctions so far have been agreed on. And remaining united is also extremely important for our energy security during this time. That underlines the importance of events like the Three Seas Forum.

Each member country faces a different energy challenge in this new context, but working collectively can enhance our energy security. Coordination is more important now than ever. In this new political context, we cannot continue to feed the Russian war machine with our fossil fuel imports. Instead, we need a plan to look forward. That Plan is RepowerEU: a blueprint to build a future based on a clean energy system without Russian influence. A plan that builds on our Green Deal, not change the course of it. Because it would not make sense to try and replace fossil fuels from Russia simply with fossil fuels

from somewhere else. It would jeopardise our decarbonisation goals. The Green Deal existed long before Russia made the decision to attack Ukraine. So we will stay on the same track but pick up the pace with REPowerEU. To do that, the central element of our Plan is to boost renewable energy even further. This means more renewable electricity to replace gas in power generation, heating and cooling, more renewable gases to help industry to shift away from gas.

We are proposing to increase our renewables target from the current 40% to 45% by 2030. To back this up, we proposed:

- a Strategy for the solar sector to double today's level by 2025.
- a plan to accelerate the production of green hydrogen.
- and an action plan to double the production of biomethane by 2030. If we want to succeed, we need new tools and new approaches. And to find a way around what is preventing us from speeding up production and deployment. That's why a key part of this Plan is our proposal on permitting procedures. Right now we are looking at almost a decade for some offshore wind projects to get off the ground. Far too long. And time we don't have to waste. Our aim is to simplify and prioritise.

With our new proposal, renewable energy projects are considered as being in the overriding public interest. And

we are also recommending that repowering projects and solar panel installations have shorter and simpler procedures. And last, we are proposing that Member States can designate 'go-to' areas. These are places most suited for developing renewable installations and where the environmental risks are known to be lower. And the definition will be based on a strategic environmental assessment. Once this is done upstream, individual projects will not need a separate assessment, meaning permitting procedures will be done much faster. In these areas, it shouldn't take more than a year or six months for repowering projects. Beyond renewables, diversification must be part of the approach. There is a clear risk to our short-term energy security.

Renewables and energy efficiency are necessary, but not enough. Right now, we can't match the shortfall from Russian gas with these alone. Winter is around the corner, and it will be a challenging moment. We are not just looking at high prices, there is a real risk that we do not have enough energy for our societies. We need to make sure the impact on citizens and industry is as low as possible. So preparation is key.

Energy storage is our first insurance policy. So we have introduced regulation to ensure that storage levels are filled up to 90% by November 1st each year.

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Kadri Simson, EU Commissioner for Energy

The filling of storage is advancing well, despite the high prices.

The EU-wide storage level is already above 50% of capacity, around six percentage points higher than last year at the same time. We also need to be pragmatic and diversify Russian gas from other reliable sources and through smart investment.

And things are already moving in the right direction. Our dependence on Russian imports is already decreasing.

LNG imports are at record levels: 12.6 BCM were imported in April in the EU. This represents a 36% year on year increase for LNG.

Meanwhile, the share of Russian gas imports in the EU is already decreasing. April 2021 it was 45%, compared with April this year at 31%. If we look at pipeline gas alone, the reduction is even bigger, from 40% last year to 26%. Our gas infrastructure and cooperation on security of supply allows us to increase LNG and let the gas flow to where it's needed. The fact that Gazprom has cut off a number of Member States including Poland, Bulgaria, Finland, the Netherlands and Denmark – and the situation is stable, is proof of this. I also want to talk about the EU Energy Platform – one of the key drivers of our effort to diversify.

The Platform will:

- aggregate EU gas demand,
- Allow us to better and more efficiently use gas infrastructure, like LNG terminals
- and carry out outreach to supply partners.

We are also working to set up a joint venture mechanism that

will help us purchase gas directly and redirect it in a competitive way among interested Member States. As part of the Platform, we have already established the first regional sub-platform for South Eastern Europe, to help Bulgaria and neighbouring countries. And they should be an example to follow. We want to see other regional platforms come out of the Three Seas Group as soon as possible. There's no reason that the Baltic Region couldn't be the next Group, so I'd really encourage the authorities and market actors to make the most of this avenue.

In terms of outreach to international partners, we are quite advanced with the United States, as well as Norway. Last week I travelled to Cairo where we signed an MoU with Egypt and Israel. I will also visit Azerbaijan in July. At the same time, we have intense contacts with Canada, Qatar, Algeria, and others. Despite all of these efforts, uncertainties remain. That's why Member States absolutely need to step up preparedness, update the contingency plans in place and conclude any outstanding bilateral solidarity agreements. I am also giving priority to deliver a coordinated contingency plan for next winter and to provide guidance to Member States on how to organize demand reduction decisions, if it's needed. So that we know what we will do depending on what happens. There is no immediate risk to our security of supply, but if needed, we will handle it in the spirit of solidarity and minimising the impact on EU's citizens and business. The EU is ready to deal with these developments. Already since last year we have been working hard to enhance our preparedness for gas disruptions – including the most serious scenarios.

REPowerEU is a plan for our security and independence in the EU. Individual countries and regions can build on what we have set out. Energy is now being used as a weapon on a daily basis. And as I said earlier, close cooperation is incredibly important to protect against it. Particularly for those countries that are most exposed to Russian threats.

The three Baltic States and Finland have historically been fully dependent on Russian gas.

And infrastructure is going to be key for energy security, for these countries in particular but also the wider EU. Important developments either have been completed or are in the works. The Baltic Pipe and GIPL. A better interconnection between Lithuania and Latvia. And the ENTSO-G assessment shows us that the FSRU to be installed in either Estonia or Finland latest in 2022 will be a huge help in removing dependence on Russian gas. Aside from gas, electricity is also an area of security concern because the Baltic States are the last Member States with grids still dependant on third countries. Synchronisation with the European continental grid is a priority, one that will be completed at the latest by the end of 2025. And when it's in place, it will create a more secure energy system as well as increasing renewables uptake in the region. Ladies and gentlemen, As I see it, these are the key drivers to reach a safe and resilient energy system.

Source: European Commission Website

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EXCLUSIVE SOUNDINGS



HYDROGEN: “If you talk to some of the companies investing in hydrogen in Australia, they are moving forward under intense pressure to reduce emissions and improve their environmental performance. They are investing in clean technologies like CCS and hydrogen, yet are doing so without the assurance of security of demand.”

Dr. Roberto Aguilera

Energy Economist
Oil and Gas Innovation Center, Curtin University

IMPACT: “A lot of companies now are looking very closely at their internal operations to become more cost effective and efficient. They understand the impact it has on the overall brand and reputation. Many big factories in the UAE are installing solar panels to reduce their carbon footprint. This is important because when big players do it, others follow.”



Habiba Al Marashi

Founder, President & CEO of Arabia CSR Network
Co-Founder & Chairperson of Emirates Environmental Group



CHINA: “Bioenergy in China cannot be developed as an energy carrier and for the energy purpose like other fuels. It must not interfere with food security and its supply chain, its development must be assessed within the context of broader environmental cleaning up.”

Dr. Xavier Chen

CEO, CN Innovation & President
Beijing Energy Club

(Source: CN Innovation newsletter)

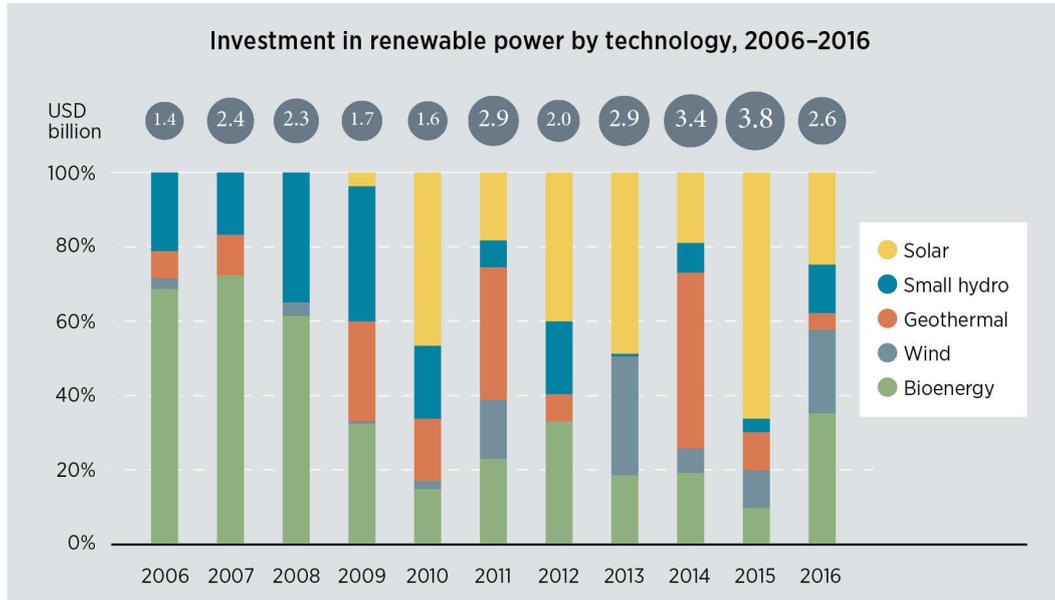
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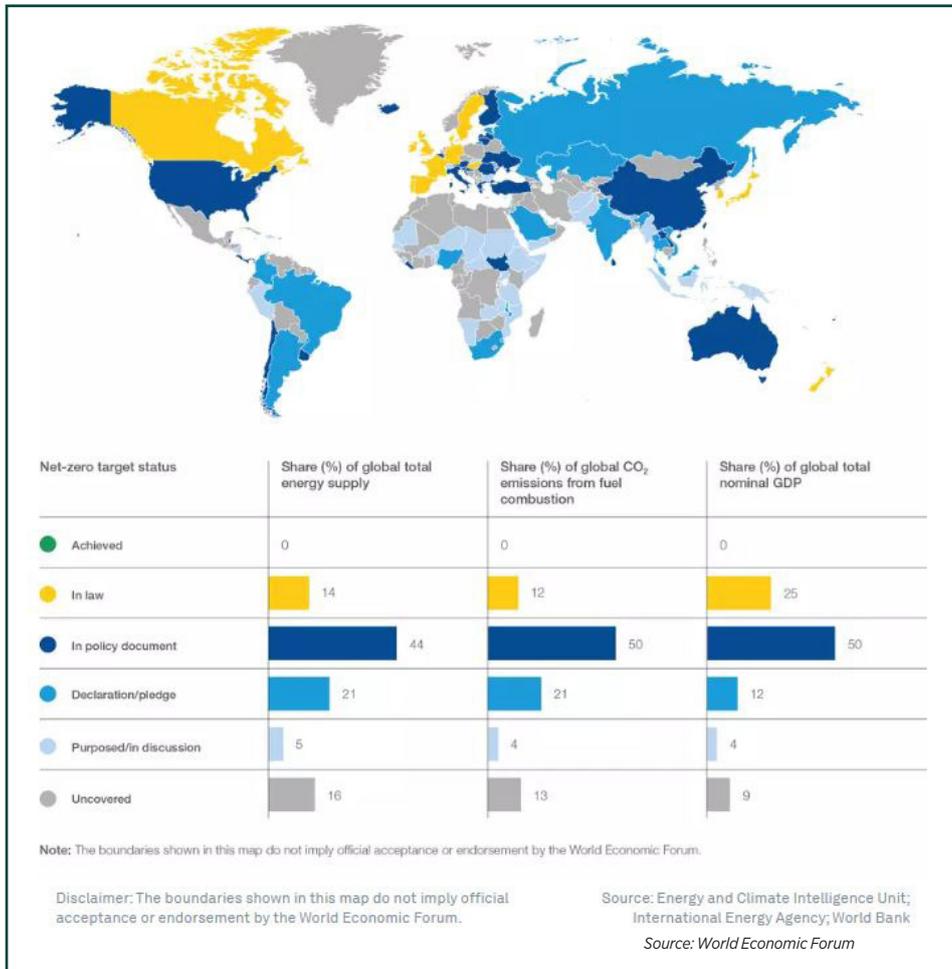
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RENEWABLE ENERGY MARKET ANALYSIS SOUTHEAST ASIA



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