



Ramping up renewables

At our most recent meeting, Clairfield's energy, cleantech and resources practice group discussed the issues surrounding recent geopolitical events affecting the energy business.

We hope you find their insights interesting and food for thought.

Europe has been making efforts to reduce its reliance on Russian natural gas since the invasion of Ukraine in late February, and the impact is being felt worldwide. Decreasing dependence on fossil fuels has become imperative; in addition to carbon neutrality, we need a rock-solid effort to end the reliance on Russian energy supplies.

In a statement released by the International Energy Agency in July, Keisuke Sadamori, International Energy Agency's director of energy markets and security stated, "Russia's unprovoked war in Ukraine is seriously disrupting gas

markets that were already showing signs of tightness" and that "we are now seeing inevitable price spikes as countries around the world compete for LNG shipments, but the most sustainable response to today's global energy crisis is stronger efforts and policies to use energy more efficiently and to accelerate clean energy transitions."

Members of the Clairfield energy, cleantech & resources practice group share their thoughts on how the business of clean energy is being affected in their countries:



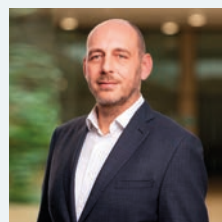
Marino Marchi,
co-head of Clairfield's
energy, cleantech
and resources group
(Italy)



David Hassum,
co-head of Clairfield's
energy, cleantech
and resources group
(Australia)



Alexander Klemm,
chair of the
Clairfield board
(Germany)



Petr Dedecek,
executive director
(Czech Republic)



Enrique Garcia,
managing director
(Spain)

In May, BBC Business News reported that Veronika Grimm an economics professor at the University of Erlangen-Nuremberg and currently one of Germany's three special advisors to the federal government said: "we need to diversify and decarbonize our energy sources faster than initially planned." To help achieve that goal, Ms. Grimm wants Germany to "ramp-up" its use of hydrogen. Hydrogen can store vast amounts of energy, replace natural gas in industrial processes, and power fuel cells in trucks, trains, ships or planes that emit nothing but the vapour of drinkable water. According to the International Energy Agency (IEA), dozens of countries have published national hydrogen strategies or are in the process of doing so. With this in mind, has the current energy crisis expedited the development of any specific renewable energy sources in your country?

Marino Marchi (Italy): Yes, this has prompted an acceleration of authorizations for businesses that are related to renewable energy. Italy is already authorizing photovoltaic projects and plans to do so even more intensely starting in September 2022. There has also been momentum around offshore wind farms, a type of renewable energy that, before the current energy crisis, hadn't seen much support

in Italy. Italy's path to decarbonization remains clearly marked. Photovoltaic and wind are the two renewable sources exhibiting the most significant momentum.

David Hassum (Australia): There is a growing interest in significantly developing hydrogen, waste to energy and pumped hydrogen as alternatives.

Enrique Garcia (Spain): Although Spain is not so dependent on Russian gas (barely 10% of total imported gas in 2021), energy prices, inflation, and interest rates are also increasing dramatically. Due to its climate and geographical conditions, Spain has unlimited access to natural resources (wind, sun, water) and Spain has already been investing heavily in wind and photovoltaic installations for many years.

Petr Dedecek (Czech Republic): Agrovoltaic energy is a concept gaining traction because it provides an effective and efficient solution to the competition for land use by combining solar and agricultural farming. Some benefits include protecting the environment against high temperatures and extreme weather conditions, reducing evaporation, thus increasing soil moisture, and increasing solar panel efficiency and electricity production.

According to the Oxford Institute for Energy Studies, "solar is the only renewable energy source which could, in principle, easily meet all the world's energy needs. With 15% efficiency (already available from Photovoltaic (PV) and Concentrated Solar Power (CSP)), 0.5% of the world's land surface would (with average irradiance) provide 20 terawatts of electricity – more than the current total primary energy use." Solar versus nuclear, which is the better carbon-free energy source, and, as is frequently discussed, what about nuclear power as an option in your country?

Alexander Klemm (Germany): Quite a few start-ups have recently been born using nuclear fusion technology. They are designing very small reactors that can reuse used nuclear fuel, reducing storage problems and radioactive disposal. Still, the nuclear question has not been answered fully.

David Hassum (Australia): Australia is largely dependent on coal, and gas prices have reached an astronomical level, despite the recent cap. Nuclear power is unlikely to gain traction in Australia.

Enrique Garcia (Spain): In Spain five nuclear plants are in operation that supply approximately 21% of the electricity consumed today. However, all five plants are going to be progressively closed and dismantled in the next 10-12 years. There is no ongoing construction project of new plants to replace the existing. The objective is to substitute nuclear-generated electricity with electricity generated from renewable sources.

Spain also holds one of the largest uranium reserves in Europe but local authorities have been reluctant to approve the permits to allow the Australian company Berkely Energia to extract this resource, which would may also contribute to reduce uranium dependence from Russia.

What new technologies are being developed, and what projects have been greenlit by governments recently?

Petr Dedeczek (Czech Republic): Consumers are getting ready for worst-case scenarios. Regarding renewables, our country is speeding up the preparation of laws to support investments concerning agrovoltaic energy. Some projects have already been greenlit for development. We have



active mandates in this sector for the sale of photovoltaic plants. We are also advising on the sale of a gas storage facility and a significant portfolio of heating plants, but these are more of a challenge as buyers are less interested and valuation is a tricky exercise.

Marino Marchi (Italy): Italy has also seen the rise of new technologies. In particular, Energy Dome, an Italian start-up backed by A2A and Ansaldo Energia, has developed a new, efficient energy storage method based on CO₂. There are high expectations around this new technology, especially by Terna, the Italian owner and operator of the national transmission grid. Particularly significant is the cost of storing energy via this method, which is half that of lithium batteries. Indeed, the Western world heavily relies on lithium for energy storage, a material largely controlled by China.

Enrique Garcia (Spain): Spain has the capacity to lead investment in the production and distribution of "green" hydrogen. A large number of projects are ongoing, most at a very early stage, promoted by private initiatives. If all these projects come to completion, Spain could reach an installed capacity of 100 MW in the horizon of 15 years from now. As an example, Repsol is projecting a EUR 2.5 billion investment until 2030 in the construction of 1.9 GW of capacity.

What deals are emerging in your countries due to this energy crisis?

David Hassum (Australia): We are selling a 60MW photovoltaic farm and are into the due diligence phase; this comes at a gradual increase in purchase agreements and the value of renewable energy projects. On the other side, we have witnessed an uplift in input costs related to construction, including steel and concrete. Therefore, we can say that these positive and negative trends offset each other.

Marino Marchi (Italy): A recent positive development has been the signing of a new partnership between ENI and Qatar to increase oil and gas supply which could help safeguard the winter supply. However, we are already experiencing emergencies in Italy due to drought: it has not rained in a long time, and we are increasing energy consumption due to air-conditioning. Some days ago, Italy experienced a spike in energy prices, reaching above 300€/MWh, a figure well above what may be considered sound.

Enrique Garcia (Spain): We see a huge need for financing to support the initiatives I mentioned earlier. We therefore expect to be involved in fundraising processes and see more and more private equity investment in this space.

Clairfield's global cleantech, energy and resources practice supports its clients, from start-ups to large corporations, in seizing the substantial business opportunities presented by the dynamic shift to a resource-efficient and low-carbon global economy.