press release

FCA Future Cleantech Architects

FUTURE CLEANTECH ARCHITECTS

Future Cleantech Architects (FCA) is a think tank based in Germany, dedicated to high-impact R&D for the energy transition. Zooming in on eight specific R&D areas, FCA draws upon a highly experienced international expert base to identify and support innovative approaches with the potential to reduce greenhouse gas emissions drastically.

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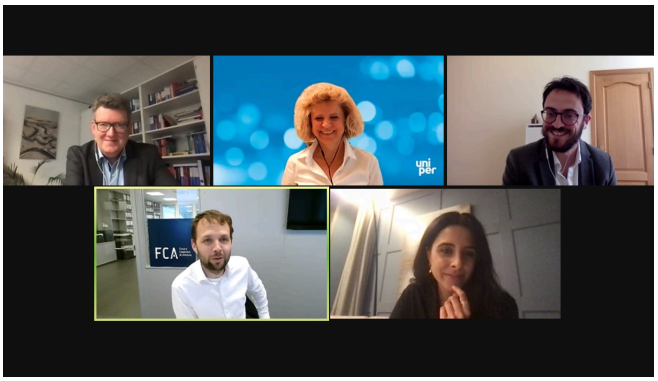
4th Future Cleantech Panel Completed | Twin Sessions on Industrial Decarbonization

Remscheid, May 12th, 2021. Future Cleantech Architects and Clean Air Task Force teamed up to organize the 4th installment of FCA's Future Cleantech Panel Series. Supported by UNIDO ITPO Germany and EIT InnoEnergy and moderated by energy journalist Sam Morgan, the expert panelists discussed the challenges surrounding industrial decarbonization in twin sessions covering the technical and regulatory sides of the issue.

Panel 1: The Technical Briefing

The first session of the panel series, focusing on the technological challenges that need to be overcome to achieve net-zero industries, took place on the 29th of April. Aside from Renate Krammer, Head of Innovation at Uniper, and Prof. Dr. Rüdiger Eichel, Director of Forschungszentrum Jülich, the panel also featured a pre-recorded contribution on the difficulties of decarbonizing steel production by Hiroyuki Tezuka, General Manager at JFE Steel Corporation.

Hiroyuki Tezuka illustrated that two current options to manufacture zero-carbon steel exist, explaining that "the first is capturing CO2 and removing it from the process. The second is developing 100% hydrogen-based iron-making processes", but also noted that both processes are "technologically very hard to achieve challenges considering the huge industrial scale of modern steel-making."



Rüdiger Eichel, Renate Krammer, Sam Morgan, Peter Schniering, Olivia Azadegan

Covering topics ranging from the optimization of clean energy production to ambitious technological solutions such as carbon capture and storage, **Renate Krammer** reminded the audience that "there is no 'one-size-fits-all' approach to decarbonization because every industry has its own challenges". When asked what she believes are the main obstacles in decarbonizing especially the hard-to-abate sectors, Krammer named both the lack of technical solutions and the availability of renewable energy sources or alternative raw materials, highlighting the fact that, "almost 50% of all technological innovations that we need are either non-existent or in an infant stage".

Prof. Dr. Rüdiger Eichel stressed the need to find technologies to defossilize the chemical and transportation sectors as well as the need to "get clean electricity at a price, volume, and scale that allows us

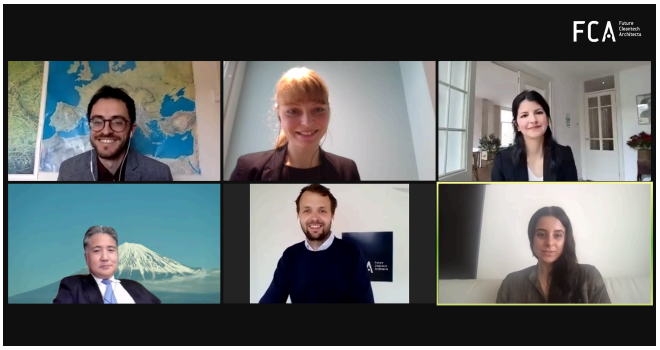
to economically produce new solutions". He suggested that a holistic, value-chain approach must necessarily "consider clever places where we can find local power to x alliances – we need to put some part of the power to x value chain close to a wind farm, close to a PV plant."

Panel 2: The Policy Briefing

Moderator Sam Morgan was joined by a new set of panelists for the second panel aimed at exploring the policy concerns surrounding industrial decarbonization. **Carina Krastel**, EIT InnoEnergy and Commercial Director at European Green Hydrogen Acceleration Center, **Magnolia Tovar**, Zero-Carbon Fuels Policy Director at Clean Air Task Force, and **Dr. Atsushi Kurosawa**, Research Director and Principal Researcher of Global Environmental Program at the Research and Development Division of the Institute of Applied Energy, discussed the progress as well as the remaining policy obstacles on the pathway to decarbonizing heavy industry sectors.

Carina Krastel kicked off the panel by advocating for a holistic approach to decarbonization: "There is quite a lot of policy framework there, now it's about how to bring that to action and how to put it on the ground. We really believe that in order to decarbonize industry we need to take a value-chain approach, meaning we need to include all actors along the value chain and build viable projects and not focus too much on policy".

Discussing the fact that becoming the first carbon neutral continent requires not only investments and innovation, but also strong policy support, **Magnolia Tovar** explained that policies intended to support carbon neutral industry have to take infrastructural factors into account: "A lot of the infrastructure that these projects need to develop or to be able to operate are outside of the scope of the projects themselves – the hydrogen backbone or carbon capture, transport, and storage."



Sam Morgan, Carina Krastel, Magnolia Tovar, Atsushi Kurosawa, Peter Schniering, Olivia Azadegan

Dr. Atsushi Kurosawa provided a highly interesting international perspective, elaborating on the challenges that Japan faces when attempting to reach carbon neutrality. "We can change the source of energy used, but it's very hard to change the placement of carbon. That is a big technological challenge. In order to achieve that, we need huge investments for long-life infrastructure, so in that sense, we have the same problems as the European and American industries. We need to work on every policy area, including tax and R&D funding and regulation and also international cooperation."

Further Reading / Links / Resources

See the Trailer for the 4th Future Cleantech Panel here:
https://www.youtube.com/watch?v=PpXpHluM2D8

Watch Sam Morgan's explainer Video on Industrial Decarbonization here:
https://www.linkedin.com/feed/update/urn:li:activity:6792773425921302528/

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