



# press release

## 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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## Survey on Key R&D Needs | World Economic Forum Pub- lishes FCA Analysis

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The World Economic Forum has published key results from a new FCA study based on a comprehensive cleantech survey. Members of FCA's advisory board and expert panel comment upon key takeaways. See the entire WEF report [here](#).

### Key findings of FCA survey on future R&D needs

- ▶ Until 2025, experts allocate the most important role in R&D *until 2025* to clean electricity, expecting it to decrease strongly in relevance afterwards.
- ▶ During the years 2025 to 2030, zero-carbon fuels are expected to take the top R&D position.
- ▶ Important high-impact contenders – such as carbon capture and storage or all-digital technologies – continue to be underrated. Strong divisions exist on the future of nuclear power.
- ▶ Beyond 2030, major R&D needs are expected to include agriculture, carbon removal technologies as well as more advanced market designs and hybrid approaches.
- ▶ FCA surveyed 114 worldwide experts on their expectations regarding key R&D areas for high-impact cleantech development.

### Statements by FCA experts on the results

“The role of all-new technological approaches to tackle climate change has been accepted by decision-makers from all relevant sectors. At the same time, we were surprised by the priority still given to clean electricity until 2025 and the hesitance to embrace other ambitious tech approaches. This is yet another indicator confirming us in our work on such high-impact technologies.”

- Dr. Peter Schniering, CEO, Future Cleantech Architects

“The energy transition has to go far beyond green electricity to achieve the necessary climate goals – carbon neutral fuels and renewable process heat in industry must be additional central parts of the story.”

- Dr. Martin Roeb, German Aerospace Center, Germany

“The survey results show that the energy transition requires deeper structural changes beyond energy production and transport. These will include a radical transformation of industrial processes and agricultural practices aligned with circular economy principles.”

- Vanessa Voelkel, Deputy Head, UNIDO ITPO, Germany

“Decarbonizing transportation and next-stage storage are the next barriers in sight, in which Green Hydrogen is positioned as a key enabler. Industry renewal and conversion will accelerate between 2026 and 2030, as sunk assets are written off and replaced by efficiency and sustainability-driven assets”

- João Saint-Aubyn, Power & Renewables Expert, Co-Founder of Wiimer, Spain

“Digital technologies are important, but when it comes to high-impact approaches to combat climate change, they serve mainly as an enabler. Looking at their reduced relevance in the survey results for post-2030 could be an indicator that most participants consider them already a part of the ‘new normal’ by then.”

- Sven Meier, Director of Digital Transformation, EnBW, Germany

**Remscheid, 18 March, 2021.** A comprehensive FCA expert survey examines the structured feedback contributed by +100 expert participants worldwide on which R&D areas they believe will be paramount to tackling climate change. Experts were specifically asked to identify gaps remaining in the development of technologies and processes that have the potential to help reduce GHG emissions drastically.

The survey allowed participants to rank the importance of various cleantech segments on a scale from 1 (most important) to 10 (least important) within certain time periods. A second section of the survey provided the option to add segments that were not listed and elaborate on more visionary ideas – beyond 2030 – and the best political measures they would recommend to quickly develop and scale those segments. An FCA-Index that ranks the technological options based on the average score they received in the prioritization was developed.

### Energy Storage, Zero-Carbon Fuels and Industrial Processes amongst Top Priorities

Analysis of the survey data yielded both expected as well as surprising results. While energy storage, zero-carbon fuels and industrial processes were amongst the top priorities, segments such as carbon capture and storage (CCS) and digital tools not only ranked lower, but were seen as controversial. While there was relatively broad consensus on clean electricity generation, storage and hydrogen production, segments such as carbon storage or purely digital innovations received much more contentious feedback.

Experts predict the most important R&D fields for the energy transition of the next five years to be clean

electricity, energy storage, and industrial decarbonization. When asked to consider which R&D priorities the experts considered most critical for the **period until 2030**, the scope of the answers changed. Participants seem to have trust that the challenge of clean electricity generation will have been overcome by 2025, shifting the priority to low-cost zero-carbon fuels and conversion processes in the segment of industrial decarbonization.

Results on the key drivers beyond 2030 show a more ambitious, visionary picture: For this period, participants of the survey expect innovative technologies from agriculture to carbon capture in combination with more advanced market design to play a larger role. Moreover, the next generation technology of proven solutions is expected to take over and hybrid versions – such as farming photovoltaics – are predicted to increase in share.



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### Further Reading / Links / Resources

#### WEF Blogpost on FCA R&D Survey:

<https://www.weforum.org/agenda/2021/03/cleantech-investment-priorities-energy-transition/>

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