



# Annual Report

2022

# IMPRESSUM

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# TABLE OF CONTENTS

<b>1</b>	About
<b>2</b>	Our work
<b>3</b>	Timeline
<b>4</b>	Highlight: The Basics & The Gaps
<b>5</b>	Highlight: The ARC Cleantech Innovation Festival
<b>6</b>	Highlight: COP27 in Sharm El Sheikh
<b>7</b>	Other milestones
<b>8</b>	Projects and collaborations
<b>9</b>	Participation in events and panels
<b>10</b>	Future Cleantech Architects events
<b>11</b>	Publications



## ABOUT

Future Cleantech Architects is a non-profit climate innovation think tank situated in Remscheid, Germany. We exist to close the remaining innovation gaps to reach net-zero emissions by 2050. To reach this objective, we accelerate innovation in critical industries – such as cement, aviation, or shipping – where sustainable solutions are still in very early stages. We urge policy-makers to intensify and better prioritize their R&D activities. Moreover, we initiate and actively drive high-level research consortia on critical technologies for these neglected technological sectors.

We can rely on a strong network of experts to contribute their knowledge to our projects, analyses, publications, and workshops. We strive to provide decision-makers with the facts they need to make informed decisions.

In 2022, Future Cleantech Architects was able to build upon the momentum of 2021 and experienced substantial growth and development. A pivotal milestone in our trajectory has been expanding our team, as we have been able to add to both our cleantech analysts' unit and our communications department. Our new experts have expanded our presence to four European countries, positioning us to better engage with diverse stakeholders across these regions.



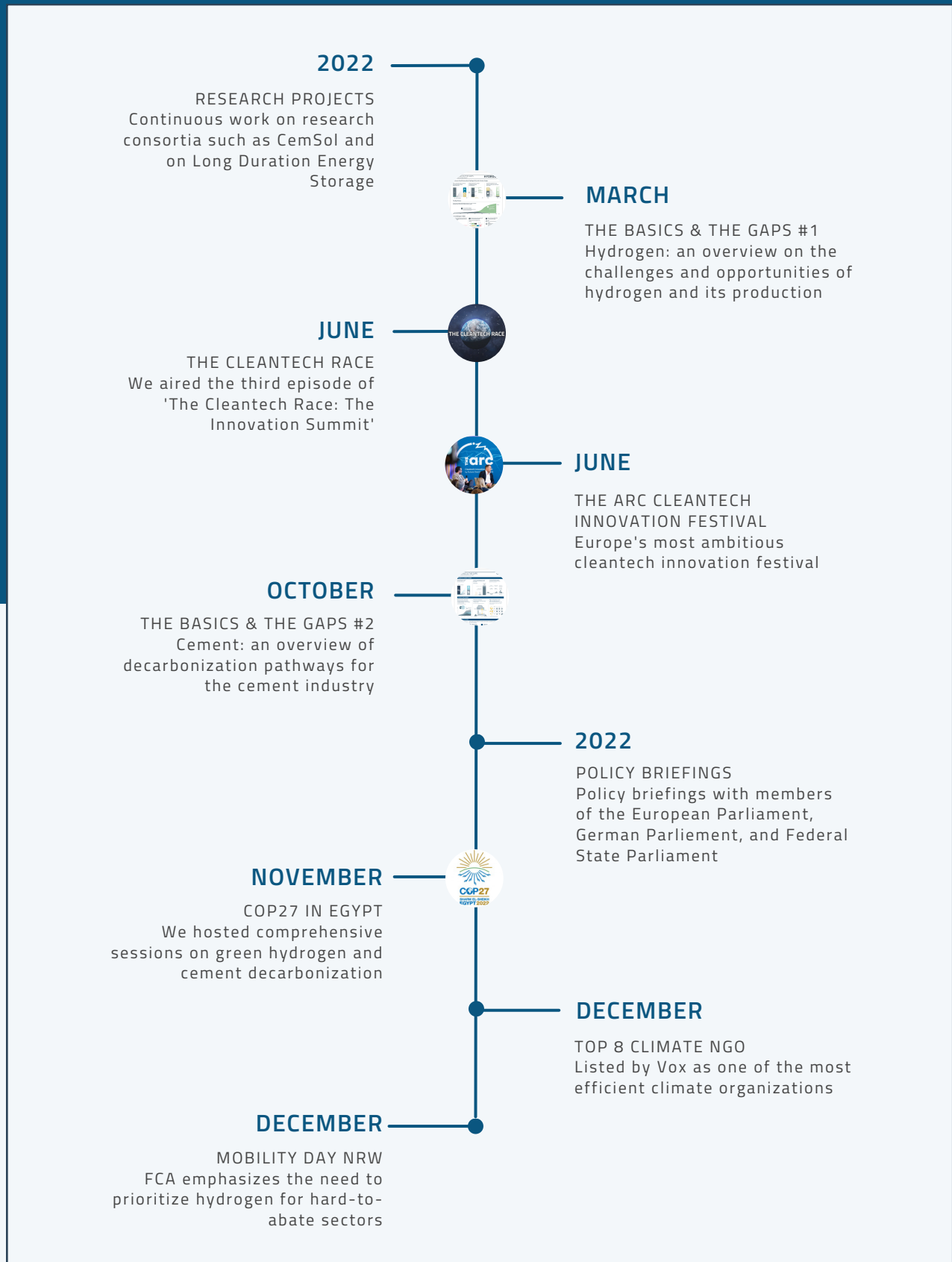
# OUR WORK

Future Cleantech Architects launched "[The Basics & The Gaps](#)", a new factsheet and video series, in March of 2022, focusing on the challenges and opportunities of green hydrogen. A second factsheet analyzing the difficulties of decarbonizing cement and concrete production followed in October. Additionally, our growing team allowed us to successfully complete our first [Cleantech Innovation Festival The ARC](#) in our hometown of Remscheid, Germany, in June. The festival was organized in partnership with UN Climate Change (UNFCCC), UN Industrial Development Organization Investment and Technology Promotion Office Germany (UNIDO ITPO Germany), and EIT InnoEnergy and featured 14 panels focused on promoting technological innovation needed to decarbonize hard-to-abate industries.

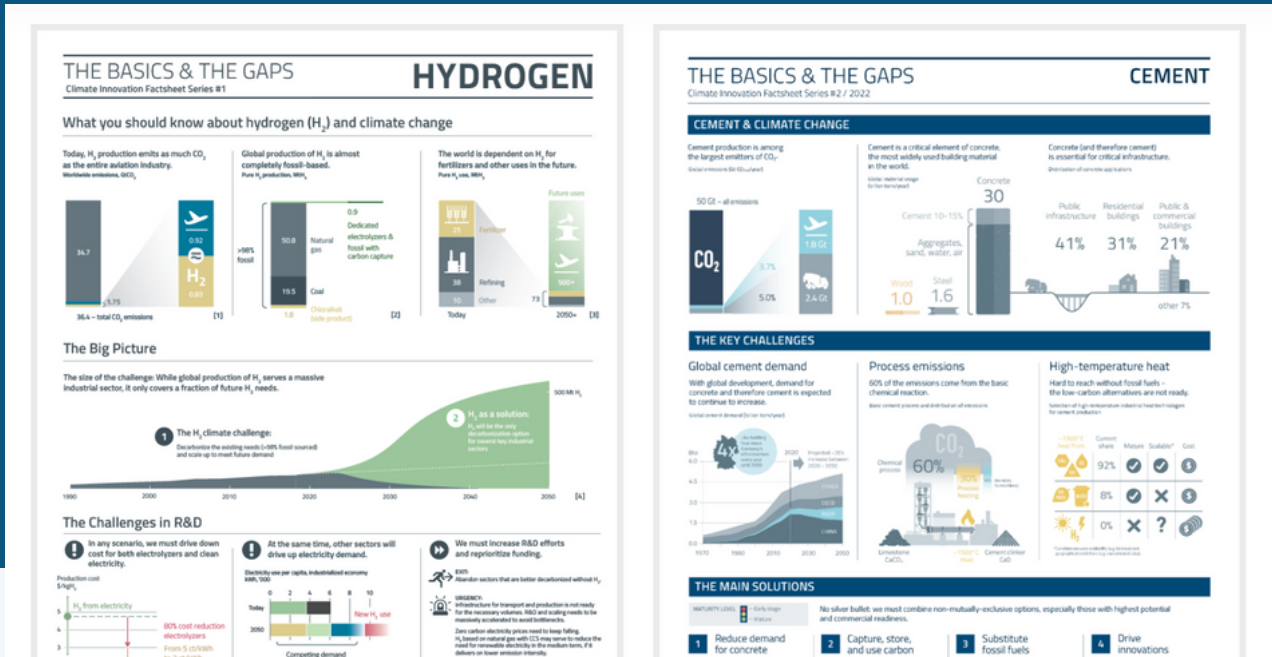
A significant highlight on our calendar was our active participation at [COP27 in Sharm El Sheikh, Egypt](#). Upon invitation of UN Climate Change's Global Innovation Hub (UGIH), Future Cleantech Architects co-hosted The Green Hydrogen Day, which focused on the core value chain of green hydrogen and its innovation gaps, taking into consideration that hydrogen demand is predicted to increase massively, and huge challenges remain to produce, store and transport the quantities of green hydrogen needed for a net-zero future. A further session, hosted at the Climate Action Hub, focused on cement decarbonization and addressed the breakthrough innovations needed to successfully do so. We are thankful for the support we have received in 2022 and we look forward to continue driving positive change in the cleantech landscape.



# TIMELINE



# HIGHLIGHT: THE BASICS & THE GAPS



The Basics & The Gaps is a Future Cleantech Architects-produced factsheet and animation series which aims to summarize the key facts and figures on some of the most challenging issues and technological innovations needed to reach net-zero. The first episode analyzed hydrogen's role in climate neutrality and examined the current state of development of this critical industrial raw material. How "green" is hydrogen to date? What challenges do we face in producing the quantities of hydrogen needed in the future? The second episode focused on the cement industry, which is highly competitive with low margins and little innovation and needs comprehensive support to decarbonize. But why is the cement sector so relevant for reaching a net-zero 2050? What challenges do we face in decarbonizing the cement sector? What alternatives or solutions can we implement to decarbonize cement production?

Our factsheet and animated video summarize the current state of scientific research and provide an easy-to-understand overview on the challenges and opportunities of hydrogen and for the cement industry. You can find them [here](#).

# HIGHLIGHT: THE ARC CLEANTECH INNOVATION FESTIVAL

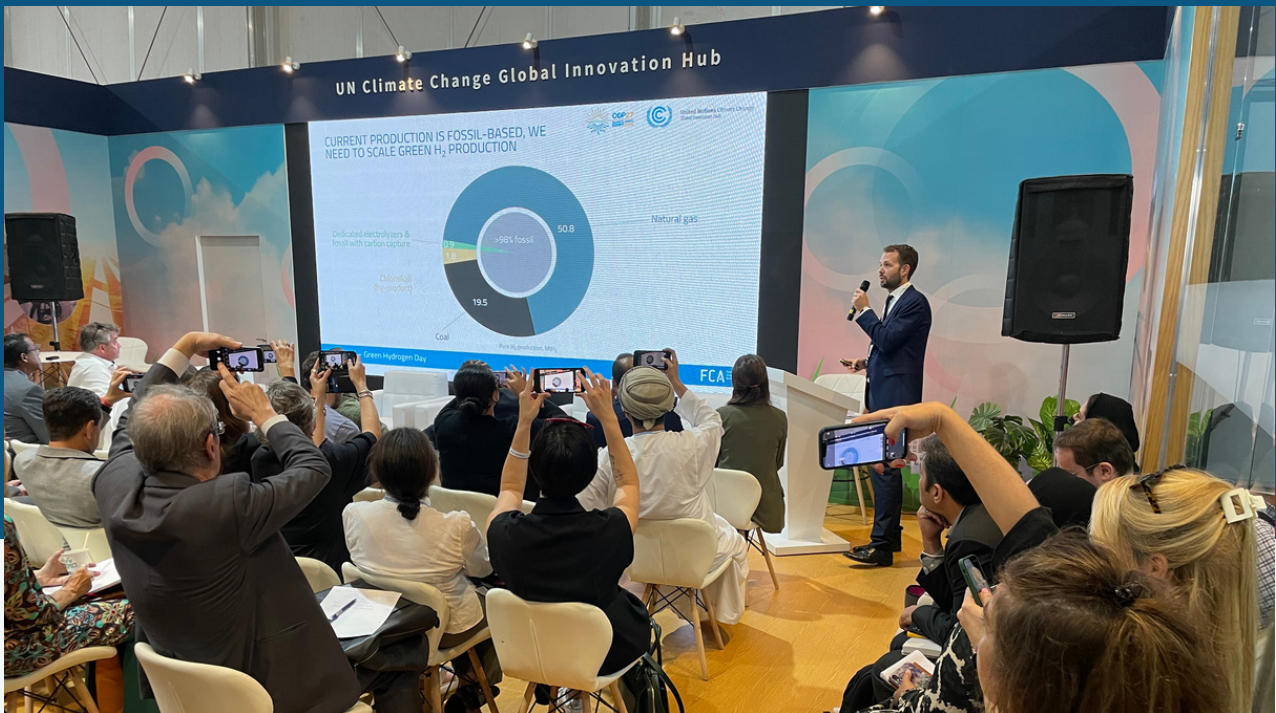


Together with international partners and co-hosts from the public and private sphere, The ARC – Europe’s most ambitious cleantech innovation festival brought together the brightest minds and best ideas in cleantech worldwide. Four stages, each focusing on accelerating high-impact ideas across cleantech innovation, gave attendees the opportunity to discuss the most effective technologies, policy approaches, and financial ideas to drive down emissions drastically. Building on the key takeaways of The ARC 2022, we have decided to host another edition in 2023, so stay tuned!

You can find key takeaways and recordings of the panels [here](#).



# HIGHLIGHT: FCA AT COP27 IN SHARM EL SHEIKH



During COP27, Future Cleantech Architects co-hosted the Green Hydrogen Day with UN Climate Change’s Global Innovation Hub. The day focused on the core value chain of green hydrogen and its most pressing innovation gaps, taking into consideration that hydrogen demand is predicted to increase massively and huge challenges to produce, store, and transport the quantities of green hydrogen needed for a net-zero future. Additionally, Future Cleantech Architects hosted a Climate Action Hub session focused on cement decarbonization, where policy and private sector representatives addressed the biggest roadblocks and possible solutions for a net-zero cement industry.

You can see out the recordings and key takeaways [here](#).

# OTHER MILESTONES

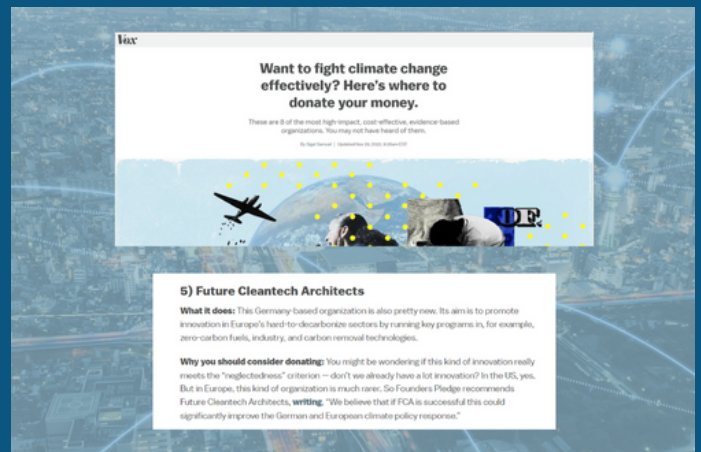


## Policy briefings

We held several policy briefings with senior officials from the European Parliament, the German Parliament, Federal State Parliaments, and National Ministries. Amongst others, Future Cleantech Architects advised on topics such as hydrogen, cement, long duration energy storage (LDES) and carbon contracts for difference (CCfDs).

## Future Cleantech Architects listed on Top 8 Most Efficient Climate Organizations by Vox

Future Cleantech Architects was listed as one of the most efficient climate organizations by US explanatory journalism platform, Vox. Read the article [here](#).



## The Cleantech Race

For our new episode of 'The Cleantech Race: The Innovation Summit', we asked innovation managers of large utilities about the current status of utilities in the energy transition, the needs of the sector, and specific actions that can be taken in the industry to speed up innovation. Watch it [here](#).

# PROJECTS AND COLLABORATIONS

Future Cleantech Architects regularly collaborates with strong partners from the public and private sectors, including with other organizations and research institutions for the substantive analysis of development approaches with the highest potential for breakthrough innovation (e.g., Fraunhofer-Institut für Arbeitswirtschaft und Organisation IAO, World Economic Forum, Tech for Net Zero Allianz, Forschungszentrum Jülich GmbH, Neue Effizienz gGmbH, Breakthrough Energy, LCC, Clean Air Task Force, EIT InnoEnergy SE, etc.).

- Ongoing collaboration with project partners and the Future Cleantech Architects' Advisory Board and Expert Panel regarding the identification of key areas for analysis. This resulted in initial projects in the areas of:
  - Zero-emission cement production
  - Long-term energy storage / Long Duration Energy Storage (LDES)
  - Hydrogen
  - Financing and financing gaps of Cleantech start-ups
  - Innovation promotion
- Continuous cooperation with the Start-Up Center of the University of Wuppertal
- Participation as speakers at the University of Wuppertal's Start-up Center as part of the EXIST funding project with founders of sustainable start-ups in the Bergisches Land region



# PARTICIPATION IN EVENTS AND PANELS

- Participation in and contribution to the "[Decarbonizing Europe's industrial sector: Lessons learned in Germany and the Netherlands](#)" event by Clean Air Task Force
- mobiliTALK Podcast of the Alliance for Mobility NRW on the topic "[How can mobility be climate friendly?](#)"
- Participation in a panel at the final of the pitch competition of the [Sustainable Start-Up Days](#) organized by the Start-Up Center of the University of Wuppertal
- Participation as a mentor in the [Climate Hack](#)
- Participation at the Munich Security Conference as [FUTURITY Fellow of the BMW Foundation](#)
- Speaker at the Transport & Environment Event "[Acting now for the zero-emission planes and ships of tomorrow](#)"
- Contribution to the WirklichGut Podcast on the topic "[Tech solutions for the fight against climate change](#)"
- Participation as speaker at the exchange format of the Start-up Center of the University of Wuppertal in the context of the EXIST funding project with founders of sustainable start-ups in the Bergisches Land region
- Contribution to the Planetary Podcast of brand eins and Planet A on the topic of "[Building](#)"
- Participation in the [Global Renewable Energy Forum 2022](#), hosted by the Embassy of the Republic of Korea, the International Renewable Energy Agency (IRENA) and UN Climate Change
- Participation in the panel "[Catalyzing Cost-Effective Hydrogen Imports in Europe](#)" at the UN Climate Change Conference COP27, organized by Clean Air Task Force





# FUTURE CLEANTECH ARCHITECTS EVENTS

Throughout 2022, Future Cleantech Architects organized and hosted a number of events and panels on climate innovation.

- Organization of the inaugural Cleantech Innovation Festival "[The ARC](#)" in collaboration with UNIDO ITPO Germany, UN Climate Change, and EIT InnoEnergy
- Special episode of the Future Cleantech Architects video series "[The Cleantech Race](#)" focusing on promoting innovation within utilities, featuring innovation managers from E.ON, EnBW, and Wien Energie
- Organization of the [Green Hydrogen Day](#) in collaboration with the UN Global Innovation Hub at the UN Climate Conference COP27
- Organization of a presentation on the topic of decarbonizing the cement sector at the [Climate Action Hub](#) of the UN Climate Conference COP27



# PUBLICATIONS

Alongside our own publications on innovative technologies to decarbonize hard-to-abate sectors, Future Cleantech Architects regularly contributes to external blogs, magazines, and journals.

- Future Cleantech Architects publication on the [key findings of the Munich Security Conference](#)
- Co-signing of several [open letters](#) in cooperation with other European think tanks and cleantech organizations
- Several contributions in print and on TV to The ARC Festival, amongst others by [WDR](#) and [NOWU](#)
- Future Cleantech Architects publication on the [key findings of COP27](#)
- [Interview with Energy Monitor](#) on energy storage
- Contributions to the participation in COP27, amongst others by [WDR](#)
- Roundup of [key takeaways from Future Cleantech Architects' Cleantech Innovation Festival The ARC](#)

