

Decarbonising the global cement & concrete sector

BIBM Congress 2023
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Thomas Guillot
CEO GCCA



Global Cement and Concrete
Association

CONCRETE
FUTURE

OUR MEMBER COMPANIES AND AFFILIATES OPERATE IN ALMOST EVERY COUNTRY OF THE WORLD

Our Members

- Adani Cement
- Asia Cement Corporation
- Breedon Group
- Buzzi Unicem
- Cimenterie Nationale
- Cementir Holding
- Cementos Argos
- Cementos Moctezuma
- Cementos Molins
- Cementos Pacasmayo
- Cementos Progreso
- CEMEX
- Çimsa Cement
- CNBM
- CRH
- Dalmia Cement
- Dangote
- Fletcher Building
- GCC
- Heidelberg Materials
- Holcim
- Huaxin Cement
- JK Cement
- JK Lakshmi Cement
- JSW Cement
- Medcem
- Misr Cement Group
- Nesher Israel Cement Enterprises
- Norm Cement
- Orient Cement
- PT Solusi Bangun Indonesia
- SCHWENK Zement
- Secil
- Siam Cement Group
- Siam City Cement
- Taiheiyo Cement
- Taiwan Cement Corporation
- TITAN Cement Group
- UltraTech Cement
- UNACEM
- Vassiliko Cement
- Votorantim Cimentos
- YTL Cement

Our Affiliates – partner national and regional industry associations

- Asociación de Fabricantes de Cemento Portland – Argentina
- Asociación de Productores de Cemento – Peru
- Associação Brasileira de Cimento Portland – Brazil
- Association of German Cement Manufacturers (VDZ) – Germany
- Association Professionnelle des Cimentiers – Morocco
- Betonhuis – Netherlands
- BIBM – Europe
- CANACEM – Mexico
- Canadian Precast Prestressed Concrete Institute
- Cement Association of Canada
- Cement Concrete & Aggregates Australia
- Cement Industry Federation – Australia
- Cement Manufacturers Association – India
- Cement Manufacturers Ireland
- Concrete NZ – New Zealand
- European Cement Association (CEMBUREAU)
- European Federation Concrete Admixtures
- European Ready Mixed Concrete Organisation
- Federación Iberoamericana del Hormigón Premezclado – LatAm
- Federación Interamericana del Cemento (FICEM) – LatAm
- Japan Cement Association
- Korea Cement Association
- Mineral Products Association United Kingdom
- National Ready Mixed Concrete Association – USA
- Portland Cement Association – USA
- Thai Cement Manufacturers Association
- The Spanish Cement Association (Oficemen)
- Turkish Cement Manufacturers Association (TürkÇimento)

KEY PROGRESS: CO₂ REDUCTION – GNR



CO₂ emissions*

23%

Reduction in Net CO₂ emissions
per tonne cementitious
(1990 baseline)



Fossil Fuel

18%

Reduction in fossil fuel consumption
(1990 baseline)



Energy Efficiency

19%

Energy efficiency improvement
(1990 baseline)

* Note 23% is a rounded figure – actual figure, accurate to 1 decimal places, is 22.7%

GCCA MEMBER ACTIONS

GCCA members actions are driving decisive progress on our industry mission to fully decarbonise. In the last year a myriad of actions, projects, investments are underway.



Breedon Group – CEM II /A-L rollout



CANACEM – Mexico-FICEM
2030 Roadmap



Cementos Argos – Technical and Financial
Roadmap



Cementos Moctezuma –
Replacing Clinker



Cementos Pacasmayo – EcoSaco
– Sustainable Packaging

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CEMEX – Solar Clinker



Cimsa Cement – Optimising clinker and fuels



CNBM – New WHR Power Generation technology



CPCI – 2030/2050
Net-zero Roadmap Initiative



CRH – ZIN Project in Brussels

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Heidelberg Materials – CCUS driving deep decarbonisation



Holcim – Calcinated Clays



JK Cement – Steps Towards Net Zero



JSW – Decarbonisation efforts towards net zero



MPA – State of the Art Net Zero Fuel Mix

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Orient Cement – Renewable and Alternative Fuels



SCG – 3D Printed Coral Reef



SECIL – The Clean Cement Line



Taiheiyo Cement – Carbon Circulation Technology



YTL Cement – Net Zero Initiatives

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Taiwan Cement Corp. – Ultra-High Performance Concrete



TCMA – Working with Stakeholders



UltraTech Cement – Harnessing Green Energy



3D Printed Concrete



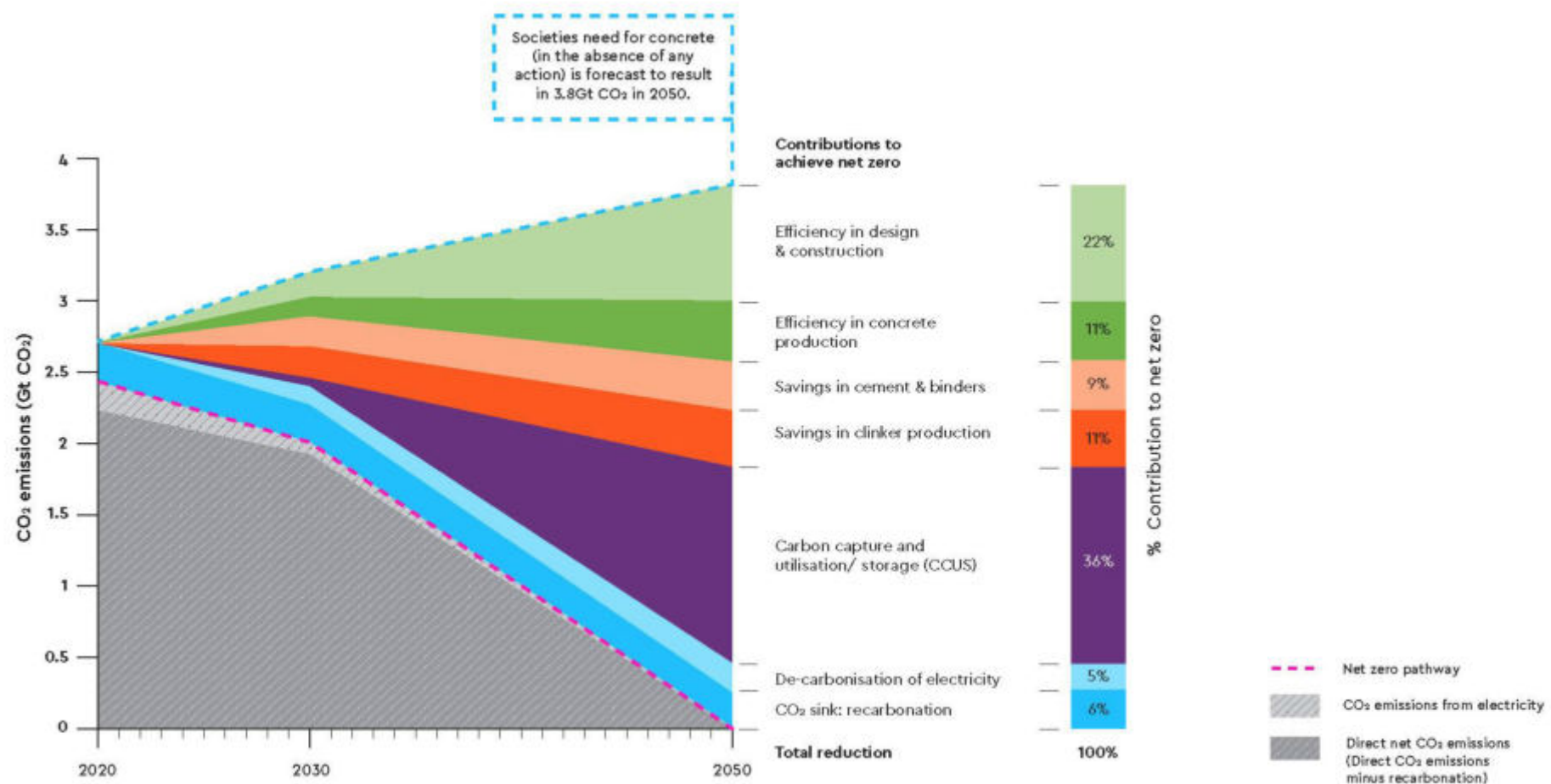
Votorantim Cimentos – Renewable Energy

An aerial photograph of a large, curved concrete dam. To the left of the dam is a large reservoir of dark blue water. To the right of the dam is a bright green, rectangular field, possibly a golf course, surrounded by dense green forest. The dam itself is a long, curved concrete structure. The text "NET ZERO DELIVERY" is overlaid in white on the left side of the image.

**NET ZERO
DELIVERY**

GCCA 2050 ROADMAP -

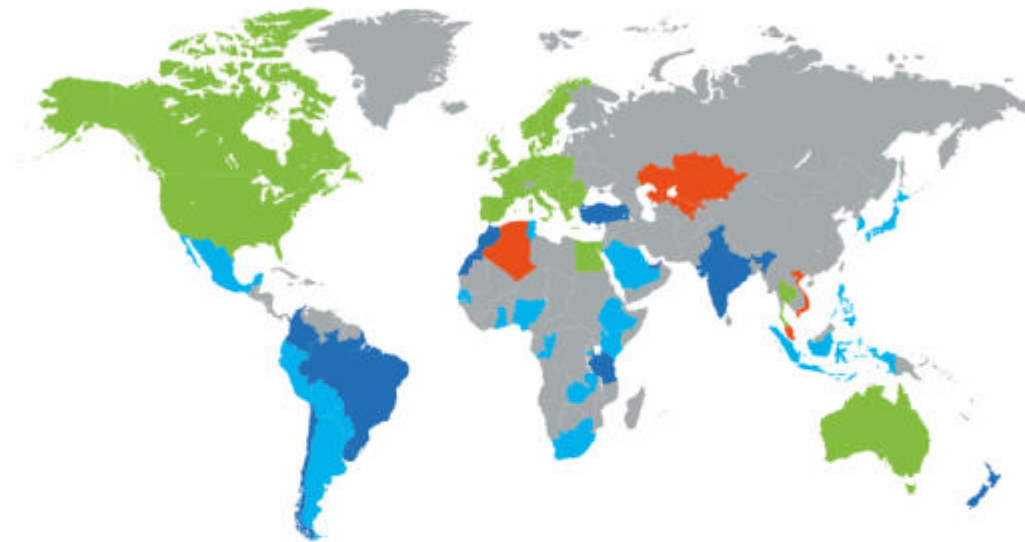
No silver bullet, all value chain contributes to decarbonisation agenda. CCUS ramp up required.



NET ZERO DELIVERY

Roadmap Accelerator

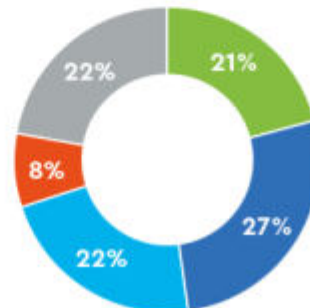
Updated 25.05.23



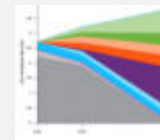
Percentage of world cement production covered

(excluding China)

- Existing Roadmaps
- Initiated Roadmaps
- Roadmaps under discussion
- Future potential countries
- Remaining



KEY DELIVERABLES



Roadmap Levers and CO₂ impact

Per lever, quantification of potential CO₂ reduction 2030 & 2050



Policy

Per lever, identification of enabling policies



Lighthouse Projects

Per lever, identification of lighthouse projects

GCCA Net Zero Accelerator Result in development of Technology “Battle Plan”

Concrete Actions needed to progress on respective technologies

Technologies	Roadmap enablers		Policy asks		Knowledge dissemination		Projects		Financing	
Building efficiencies										
Low carbon products										
Waste to energy										
Green electricity										
CCUS										
Recarbonation										

NET ZERO DELIVERY: CALL FOR ACTION



Next steps are to:

- actively reach out, encourage and equip all stakeholders in targeted countries to progress to the point of agreement to commence their country roadmaps
- enable completion of roadmap activity in countries where roadmaps have already begun
- support implementation once roadmaps have launched

*We count on your support
to ensure your local companies
demonstrate leadership in these endeavours.*

- Our target is to cover 75% of world – plus China

LAUNCHING NET ZERO VALUE CHAIN PARTNER MEMBER CATEGORY



Only by working together with stakeholders across the value chain can we achieve net zero."



- To share common Net Zero endeavour
- To socialise/disseminate new technologies and Knowhow
- To facilitate contact and discussion across the industry

In particular we are seeking partnership with:

- Energy Solution Provider or Carbon Management and Storage
- Equipment Manufacturers
- Admixture Producers
- Consultancy Services
- Concrete and Aggregate Producers



CONCRETE PROMOTION

CONCRETE PROMOTION

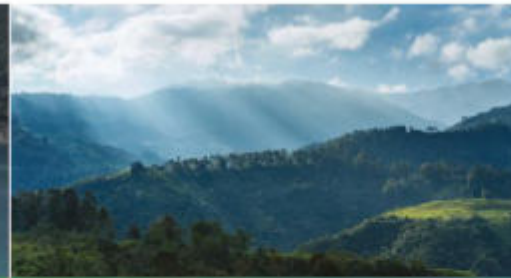
"Moving sentiment in the right direction"

2023 Focus Area



Essential role of Cement & Concrete

Cement and concrete are essential to the modern world – key enablers for a future resilient and sustainable planet



Net Zero Mission & Action

It's essential to (continue to) reduce and then eliminate CO₂ emissions – our members fully committed and driving decarbonisation action today



Innovation – renewed focus

Innovation is key to unlocking our net zero future – and securing the long-term viability of our sector



Attractive successful industry

Our industry is essential and will flourish in executing the opportunities from a net zero, circular economy

CONCRETE PROMOTION


Your European Startup Daily
StartUs Community

STARTUP CITY GUIDES
TALENT & SKILLS
STARTUPS
INNOVATION INSIGHTS



Ready to decarbonize building materials?

WHERE INNOVATION MEETS INDUSTRY

Apply now

Related Articles

Start Your SUB Co-Creation journey with GCA - the Leading Acceleration Program for the Building Industry!

Launch Your Pilot Project with benefits & no Disruption of Turned Water Flows Startup Challenge

"Substrate with transitory to achieve sustainable development using industry 4.0 concept", says Tigris Bioprocesses, Top Smart Factory Project Coordinator

Scale Your Net Zero Concrete Solution with GCCA Innovandi Open Challenge 2023

by StartUs Insights

Are you a startup working on new materials or aggregates for low-carbon concrete? GCCA seeks your innovative solution to help decarbonize the cement & concrete industry. Apply for its innovandi Open Challenge 2023 to partner with the world's leading cement and concrete producers and gain access to labs, research facilities, expert guidance, visibility, & more to help accelerate your technology. Hurry, applications close on 19th May!

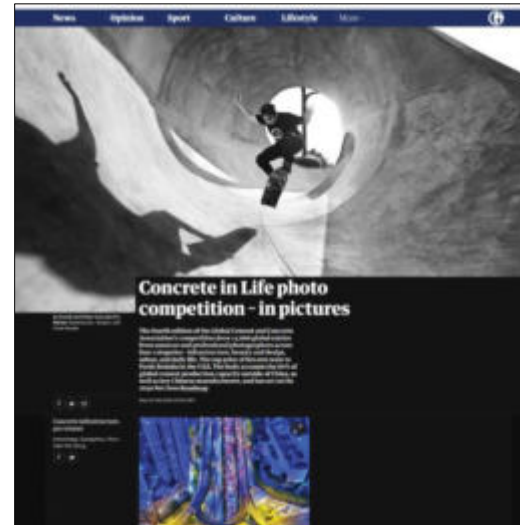
The **Global Cement and Concrete Association (GCCA)** represents the global cement and concrete industry, which is responsible for producing the most used man-made substance on earth. GCCA advocates for transforming concrete into a sustainable, long-lasting, and robust building material to meet the increasing demands of the exponentially expanding urban population. In 2021, it launched the industry roadmap to net zero, outlining the levers and pathways to providing the world with net zero concrete. The **GCCA Innovandi Open Challenge 2023** is a unique global accelerator that aims to bring together technology startups and the leading cement and concrete companies worldwide to accelerate the development of innovative solutions to achieve net zero, as set out in its roadmap.

Recognizing the critical role of innovation in creating a sustainable future, GCCA and its members, who are global leaders in the cement and concrete industry, are committed to expanding their innovation ecosystem and collaborating with external partners to achieve their net zero mission.

What's in Store for You if You Apply for the GCCA Innovandi Open Challenge 2023?

Through the **Innovandi Open Challenge**, GCCA seeks to fast-track the development and adoption of technologies that support the transition toward a net zero future. Apply today to collaborate with GCCA and make that happen! Selected startups will gain unique access to:

- Support to move from ideas to pilot tests, proof of concepts, prototypes, and business cases;
- Extensive plants, labs, and research facilities;
- Expertise and infrastructure of 40 members worldwide to showcase innovation;
- Guidance from the GCCA and its industrial members of nominated lead experts to help the startups progress in the industrialization of their technology;
- Develop new technologies and/or define new business cases with one or several industrial members;
- Members of the GCCA manage the project with each selected startup and offer resources, support, and coaching to co-develop the business.



£3.7m

Advertising value equivalency (AVE) of the media coverage for our Concrete in Life Competition was £3.7 million

+49%

In the first quarter of 2023, GCCA secured 1.53k mentions in the media – that was up 49%, compared to the previous 3 months



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INNOVATION & CCUS



INNOVATION

Driving Innovation:

Innovandi is the GCCA innovation arm, which runs two world class innovation platforms to accelerate and foster innovation to help the industry decarbonise and produce carbon neutral concrete by 2050.

75

PhDs working on essential
Innovation matters

65+15

Partner and Core innovation
projects under developments

140_m

In million the equivalent cost of
direct PhDs research members
have access to.

INNOVANDI

Global Research Network



70

Start-ups from around the world
have applied to our Innovandi
Open Challenge

£6.8m

Paid Media equivalent for our
Open Innovation Campaign

6

Selected Start-ups presenting at
Demo Day

CCUS

GCCA CCUS Collaboration Platform
CCUS Task Force and collaboration with



INTERNATIONAL
**CCS KNOWLEDGE
CENTRE**
GCCA Global Cement and Concrete Association



Through Working Group 5 GCCA is involved into very important Work Program to help mature and deploy the CCUS technologies

Advocacy

- GCCA CCUS policy paper
- CEM CCUS collaboration
- Other collaboration: GCCSI, OGCI, IEA GHG, UNIDO

Innovation

- Innovandi
- Further collaboration on high TRL under the same model as the open challenge

Knowledge building

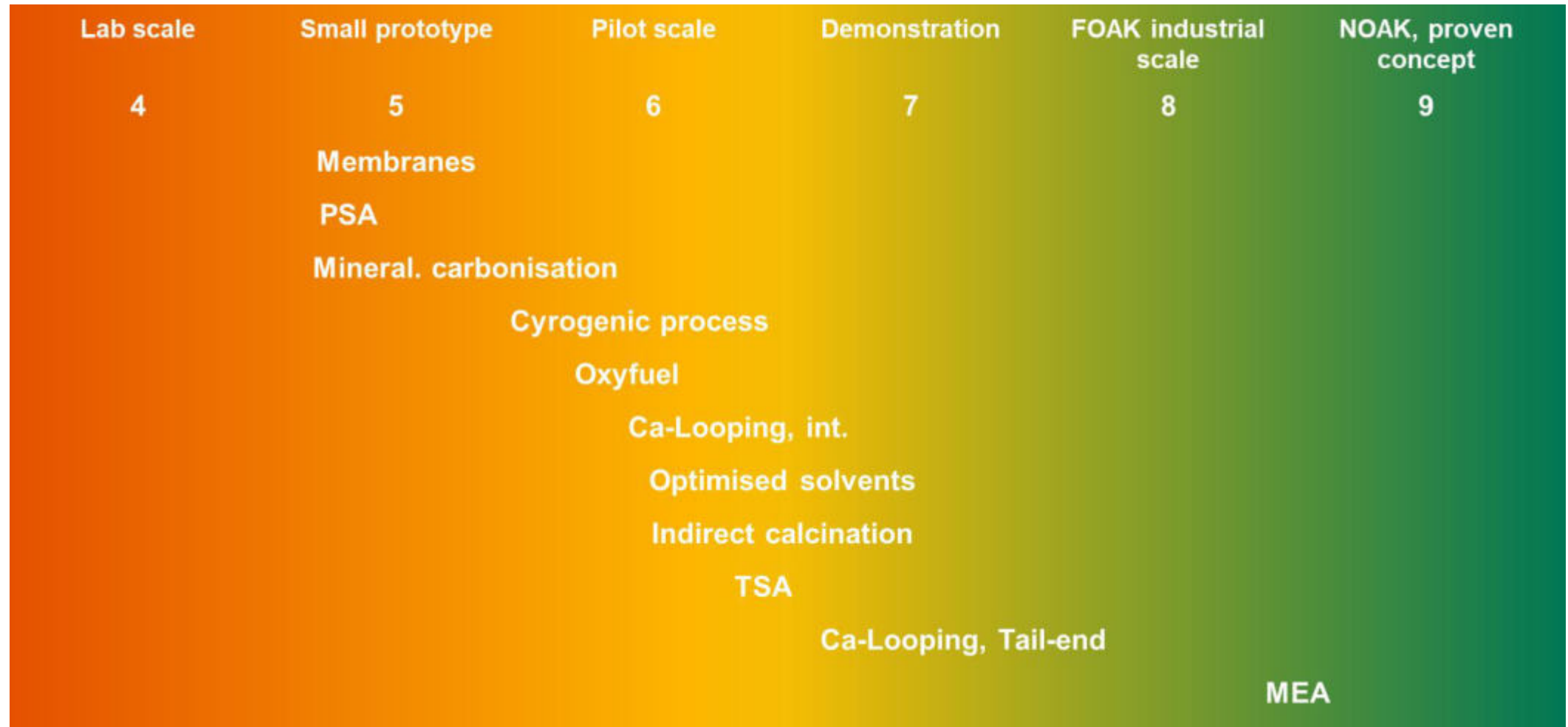
GCCA CCUS Guide/ Handbook :

- Good practices sharing
- Members capacity building
- Collaboration with CCS Knowledge Centre

Support for national initiatives

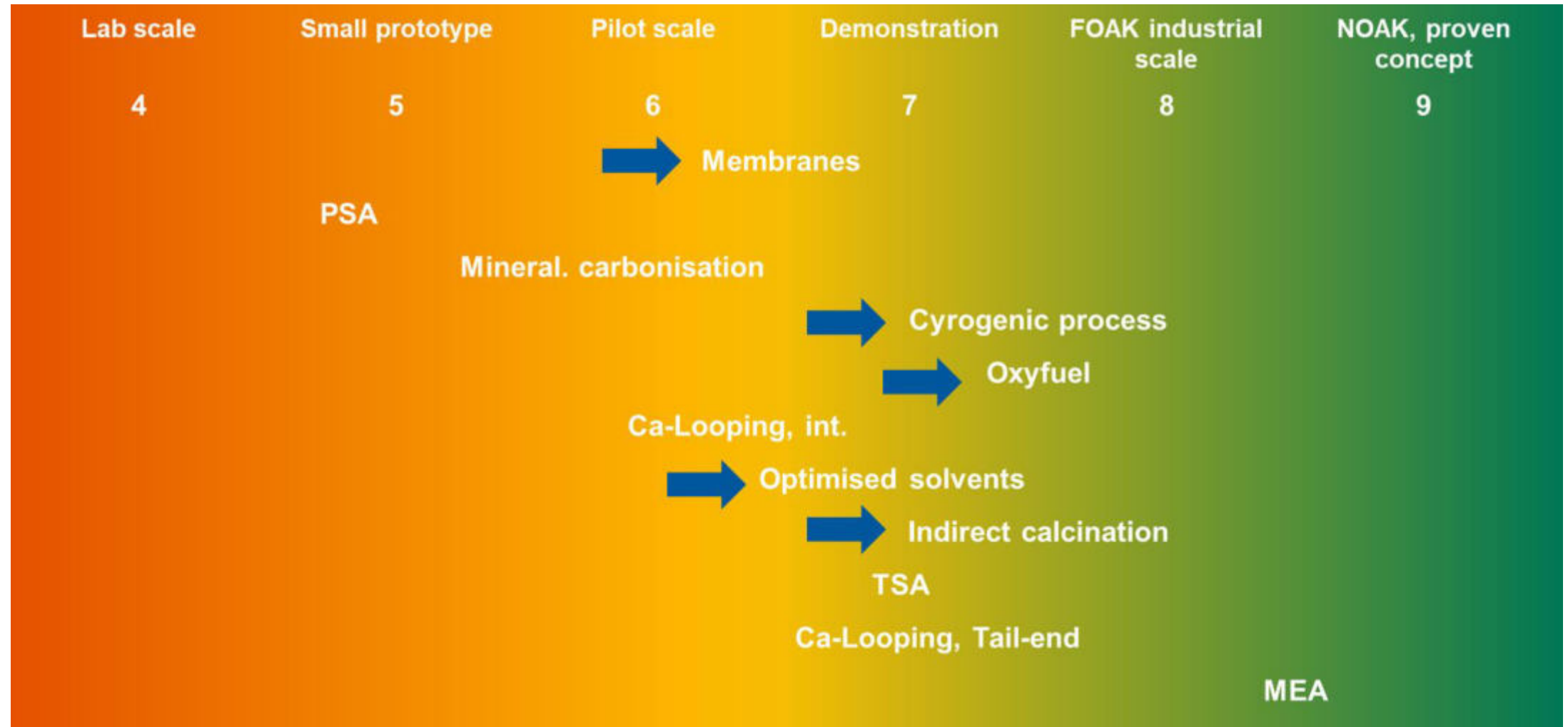
- e.g., World Bank Nigeria

In cement & Concrete sector investment in CCUS project will enable rapid advancement of technology maturity – 2022 TRL level



Source: ECRA technology papers - <https://ecra-online.org/research/technology-papers/>

In cement & Concrete sector investment in CCUS project will enable rapid advancement of technology maturity – Expected 2027 TRL level



Source: ECRA technology papers - <https://ecra-online.org/research/technology-papers/>

Launch of Cement CCUS industry tracker with Lead IT

New industry tracker will increase transparency and visibility of industry efforts in developing carbon capture projects



<https://www.industrytransition.org/green-cement-technology-tracker/>

Europe, USA & Canada are investing significantly in carbon capture technology

- EU innovation fund: 9 Cement CCUS projects (+2 on Lime CCUS)
- In USA IRA is enabling a strong acceleration of project development (project call still in process)
- In other geography project execution will face financing challenges due to lack of legislation

An aerial photograph of a winding asphalt road that curves through a dense, lush green forest. The road is light gray and contrasts with the vibrant green of the trees. The perspective is from directly above, showing the texture of the foliage and the smooth curve of the road. The word "SUSTAINABILITY" is overlaid in white, bold, sans-serif capital letters on the left side of the road.

SUSTAINABILITY

SUSTAINABILITY

2 main
functional
roles

3 major tasks



CONCRETE FUTURE

We are fully committed to working together, and with partners, to achieving our net zero destination.