أديبك ADIPEC
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Abu Dhabi, UAE

ENERGY IN CONTEXT SERIES

DECARBONISING TODAY'S ENERGY SYSTEMS

CASE STUDY

Accelerating net-zero transition and lowering emissions in hard-to-abate sectors

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WHAT IS THE ENERGY IN CONTEXT SERIES?

The transformation of the world's energy system offers a unique opportunity for economic growth, with the energy sector driving global advancement.

ADIPEC's **Energy in Context series** presents high-value briefs and case studies that showcase progress, foster dialogue and fast-track innovation to accelerate the energy transition.

The series explores key pillars driving the industry's transformative journey towards a secure, equitable, and sustainable energy future.

KEY PILLARS OF ADIPEC

- Decarbonising today's energy systems
- Energy, economic growth and emissions
- Financing a just, orderly and equitable transition
- Financing innovation in energy systems
- Synergies between energy and AI, technology
- Navigating the energy transition talent gap

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Accelerating net-zero transition and lowering emissions in hard-to-abate sectors

CONTEXT

The 2015 Paris Agreement has made decarbonisation a global imperative, prioritising it for both governments and companies. Entities globally are now making commitments and intensifying efforts to close the gap to net-zero emissions.

In the quest for a sustainable energy landscape, data and software plays a pivotal role, significantly reducing emissions in hard-to-abate sectors. For example, the cement and construction industries—key players in human development since the Industrial Revolution—remain major contributors to carbon emissions, alongside sectors like power generation and industrial combustion.

As global efforts to achieve net-zero emissions by 2050 intensify, integrating technology within these sectors could offer enduring solutions. A recent collaboration between Schneider Electric, AVEVA, and Shell represents a crucial step in supporting the energy transition and aiding companies in decarbonising hard-to-abate sectors, including the cement industry.

BUILDING PATHWAYS FOR GREEN TRANSITION

Schneider Electric, AVEVA, and Shell are collaborating to explore opportunities to co-develop integrated end-to-end energy solutions to power the decarbonisation of hard-to-abate industries, particularly the cement sector.

AVEVA and Schneider Electric bring leadership in integrated digital engineering, operational process, and energy optimisation

90%
Percentage of emissions associated with concrete coming from the production of cement[7]

4 Bt
Amount of carbon emitted by cement businesses each year[4]

8%
Percentage of overall global emissions contributed by the concrete industry[5]

13%
Percentage the construction industry contributes to the global GDP[6]

Organisations involved

- Schneider Electric
- AVEVA
- Shell

Industry

Technology, hard-to-abate sectors, energy

Location

Global with a focus on Europe

Visit these companies at ADIPEC 2024 in Abu Dhabi, November 4-7:
Shell: Atrium, Stand **#A230**
Aveva: Hall 4, Stand **#4410**
Schneider Electric: Hall 4, Stand **#4250**

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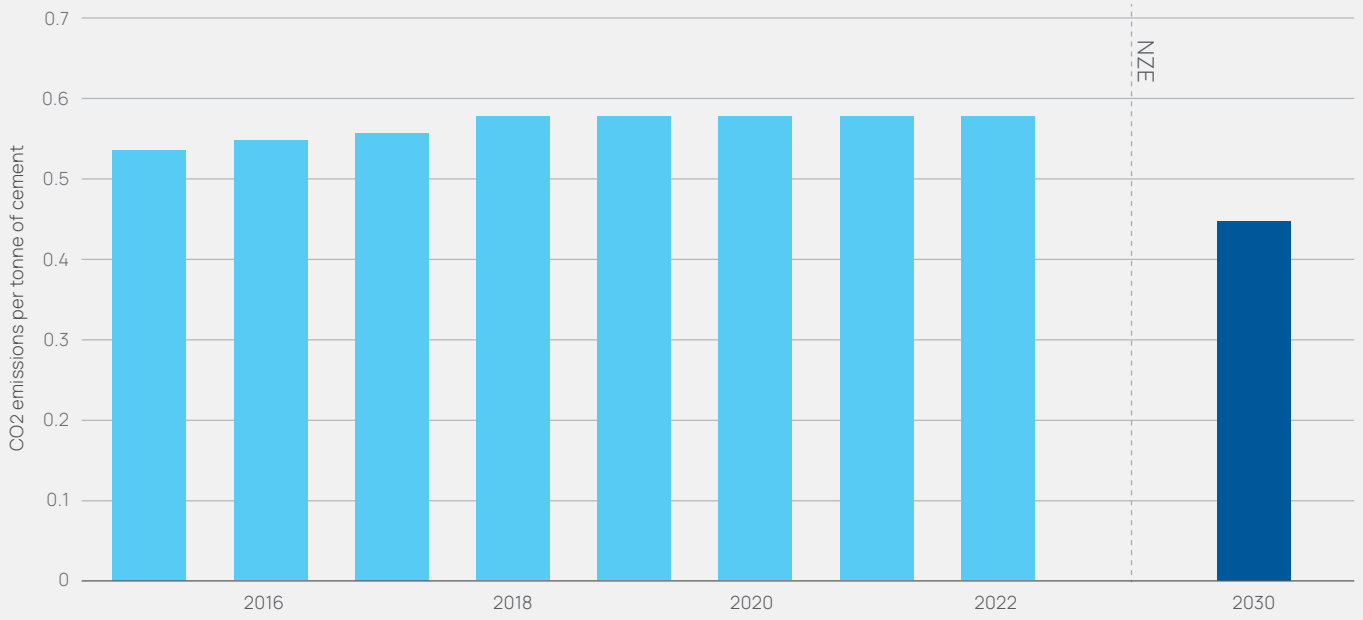
Decarbonising the cement industry is crucial for net zero targets

Emissions intensity of cement production



Note: Latest available data is until 2022

Source:IEA calculations, including with inputs from GCCA Statistics and other sources.

technologies, combined with sustainability expertise, to the alliance. These capabilities support the design, construction, and more efficient operation of increasingly carbon-neutral facilities. They will also help to create production plans that optimise the value chain and reduce GHG emissions.

Shell, meanwhile, adds end-to-end sustainable energy supply solutions, global project engineering capabilities, a large renewable energy generation and asset portfolio, as well as a broad range of sectoral sustainability solutions to the partnership.

This alliance aims to cut emissions by up to 15% in typical deployments, focusing on facilitating a smoother transition to renewable energy sources[2].

Such partnerships are poised to accelerate data-driven energy transitions across all stages of asset lifecycles within the cement and construction sectors, encompassing office buildings, industrial lines, and data centres.

From the initial asset design through construction to ongoing operations and maintenance, a unified data hub and software endow decision-makers with capabilities such as enhanced visibility, real-time transparency, and predictive capabilities.

The integration of augmented/virtual reality technologies and advanced simulations, which enable replication, testing, and optimisation of assets and processes via software, represents a potent tool for devising innovative strategies.

Moreover, Schneider and AVEVA's collaboration with Shell aims to streamline production planning, optimising the value chain and curbing greenhouse gas emissions. This symbiosis of the virtual and physical realms underscores the critical role of Internet of Things (IoT) connectivity, data platforms, and software in energy management and industrial automation. These elements promise to revolutionise operations and confront pressing challenges in energy and resource efficiency.

Jean-Pascal Tricoire, Chairman and CEO, Schneider Electric, said: "Partnerships are vital for decarbonisation. They provide benefits to all parties and accelerate the global energy transition. The combined capabilities and expertise of Shell, AVEVA, and Schneider Electric will result in innovative sustainability solutions critical to the journey to net-zero."

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With data as the cornerstone, companies are poised to embrace a future where digital and physical worlds converge, fostering an efficient, sustainable, and resilient global ecosystem.

Currently, regulations in the construction sector predominantly focus on material composition and technical specifications rather than performance metrics. Given the complexity of the construction value chain, involving numerous stakeholders from architects to end users, decarbonisation efforts must encompass the entire value chain for meaningful impact. This collaborative effort gains particular significance in this context.

This alliance exemplifies a pivotal stride towards integrating technology and collaboration across sectors to drive sustainable development and combat climate change challenges head-on.

With decarbonisation of the cement and concrete sector being a critical part of the global path to net-zero, this partnership between Schneider Electric, AVEVA, and Shell provides a positive example of how digital technologies can reduce GHG emissions.

> Partnerships are vital for decarbonisation. They provide benefits to all parties and accelerate the global energy transition.

Jean-Pascal Tricoire
Chairman and CEO, Schneider Electric

REFERENCES

1. https://www.mckinsey.com/industries/engineering-construction-and-building-materials/our-insights/decarbonizing-cement-and-concrete-value-chains-takeaways-from-davos
2. https://www.aveva.com/en/about/news/press-releases/2022/schneider-electric-and-aveva-partner-with-shell-to-accelerate-net-zero-transition-in-hard-to-abate-sectors/
3. https://www.renewablematter.eu/en/cement-the-most-destructive-material-in-the-world-or-a-driver-of-progress
4. https://psci.princeton.edu/tips/2020/11/3/cement-and-concrete-the-environmental-impact
5. https://energypost.eu/concrete-8-of-global-emissions-and-rising-which-innovations-can-achieve-net-zero-by-2050/#:~:text=Concrete%20manufacture%20is%20responsible%20for,accounting%20for%20most%20of%20it
6. https://www.weforum.org/communities/engineering-and-construction/
7. https://theconversation.com/green-cement-production-is-scaling-up-and-it-could-cut-the-carbon-footprint-of-construction-227688

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