

## **MODEC enters into offshore carbon capture FEED contract with SAMSUNG E&A, deploying Carbon Clean's CycloneCC technology**

- MODEC starts the offshore carbon capture project for Floating Production, Storage and Offloading (FPSO) deploying CycloneCC technology and contracted SAMSUNG E&A for the FEED execution of the pilot plant.
- SAMSUNG E&A will optimize CycloneCC for a MODEC FPSO vessel.
- First-of-a-kind deployment of CycloneCC in an offshore carbon capture setting.
- First-of-a-kind post-combustion Carbon Capture (PCC) implementation to operating FPSOs on a retrofit basis.

**Tokyo, February 27, 2025** – MODEC, Inc. (“MODEC”) has entered into a Front End Engineering and Design (FEED) contract with SAMSUNG E&A for an offshore carbon capture pilot project, selecting Carbon Clean’s modular CycloneCC technology. The study envisages the installation of a carbon capture module on a MODEC Floating, Production, Storage and Offloading (FPSO) vessel as a pilot, and it will be a first-of-a-kind deployment of CycloneCC in an onboard carbon capture setting.

Carbon Clean will provide FEED support to SAMSUNG E&A, including equipment supply of the rotating packed bed (RPB) technology at the heart of CycloneCC and process design package (PDP) licensing for the unit. SAMSUNG E&A will perform detailed engineering to optimize CycloneCC for the offshore environment and FPSO’s boundary conditions.

CycloneCC is well suited to an offshore maritime environment, as the unit footprint is up to 50% smaller than conventional solutions, with its largest equipment sizes reduced by a factor of 10. The recently launched CycloneCC C1 series delivers a height reduction of 70% compared to column-based technologies. The RPBs will achieve enhanced capture performance under vessel motions compared to columns, making CycloneCC ideal for offshore operations.



Image of FPSO



**Koichi Matsumiya, Chief Technical Officer, MODEC, said:**

“MODEC is proactively pursuing two targets through our R&D activities. One is to provide a stable energy supply to society with minimum GHG emission, and another is to prepare for new floater solutions to bridge the society with alternative energies from oil and gas. We believe that the carbon capture technology proposed by Carbon Clean will be the key to achieve both of our targets. We will make our best efforts to progress the readiness level of this technology by utilizing our experience at offshore and would like to materialize this technology at offshore in the shortest possible timeframe.”

**Cheon Hong Park, Executive Vice President and Head of Sustainable Solutions Division, SAMSUNG E&A, said:**

“SAMSUNG E&A is thrilled to combine forces with MODEC and Carbon Clean on this pivotal carbon capture pilot project. This initiative aligns with our company’s mission to address societal challenges through our technological solutions. It marks a significant milestone with the first application of Carbon Clean’s innovative carbon capture technology in the marine industry. We are confident that the successful execution of this project will play a key role in advancing MODEC’s mid-term decarbonization plan while accelerating the commercialization of Carbon Clean’s CycloneCC technology. We look forward to delivering a successful project and strengthening our partnership for a cleaner, more sustainable future.”

**Aniruddha Sharma, Chair and CEO, Carbon Clean, said:**

“We’re proud to deliver this groundbreaking, first-of-a-kind project with industry leaders SAMSUNG E&A and MODEC. Onboard carbon capture is essential for decarbonizing offshore oil and gas operations. Our highly modular CycloneCC technology is 10x smaller than conventional solutions, making it ideal for confined spaces, including floating vessels and maritime settings. Its replicable, scalable design makes it logistically and commercially viable to be deployed across a fleet at a fraction of the cost of traditional amine systems.”

The carbon capture project is in line with MODEC’s decarbonization strategy outlined in its Vision 2034 plan, specifically the goal of reducing CO<sub>2</sub> emissions in its FPSO operations. Once successful, the next stage may include the installation of a commercial, scaled-up CycloneCC unit on MODEC’s FPSO fleet.

## **Notes to editors**

### **About SAMSUNG E&A**

At SAMSUNG E&A, we aim to create value based on the world’s best technological competence and contribute to our clients, society, and people. SAMSUNG E&A, a total solutions provider, offers comprehensive solutions for the global energy industry, such as energy transition, oil-gas processing, refinery, petrochemical, environmental, industrial, and bio. Providing professional services across the whole project cycle ranging from professional feasibility studies to design, procurement, construction, commissioning, maintenance & operation. SAMSUNG E&A has completed more than 1,500 projects worldwide.

To prepare for ESG-based eco-friendly businesses in the future, we expanded our value chain to the business of operating green infrastructure, such as water treatment facilities and incinerators, and green solution businesses for energy optimization and carbon neutrality. To preemptively respond to changes in the global energy industry and take the lead in resolving global warming, we will provide optimal solutions based on our technologies and expertise.

For more information, please visit [www.samsungena.com](http://www.samsungena.com)

**About Carbon Clean**

Carbon Clean is a leader in revolutionizing carbon capture solutions for hard-to-abate industries including cement, steel, refineries, and energy from waste. The company's patented technology significantly reduces the costs of carbon capture when compared to conventional solutions.

Carbon Clean has over a decade of experience in designing, building, and operating industrial carbon capture systems and it has 49 technology references around the world. The company is an innovation leader in the CCUS market, with over 110 active patent assets across 18 patent families covering 30 countries, and has developed a modular technology, CycloneCC, that is vital for scaling industrial carbon capture deployment to achieve global net zero targets.

Headquartered in the UK and with offices in the US, Canada and India, the company has received funding and grant support from the British and US governments and has established partnerships with industry leaders including Chevron and Cemex. It is also an investor in the Swedish eFuel development company, Liquid Wind.

For further information: [www.carbonclean.com](http://www.carbonclean.com)

**About MODEC**

MODEC is a leading provider of floating production solutions such as Floating Production Storage and Offloading (FPSO) vessels to the offshore oil & gas industry. MODEC performs Engineering, Procurement, Construction and Installation (EPCI) activities for FPSOs, and further by owning and operating its own FPSOs, it provides oil companies around the world with comprehensive and competitive solutions for oil & gas production services.

For further information: <https://www.modec.com>

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