



Coastal Bend LNG and Solvanic announce carbon capture FEED study

HOUSTON – August 18, 2025 – Coastal Bend LNG, developer of a multi-train natural gas liquefaction and export facility along the Texas Gulf Coast, today announced it has commenced a front-end engineering and design (FEED) study with Solvanic for electrochemically mediated amine regeneration (EMAR) carbon capture at its Coastal Bend LNG facility.

Solvanic has signed an option agreement for use of the EMAR technology, originally developed by Professor T. Alan Hatton's research group at the Massachusetts Institute of Technology (MIT) Department of Chemical Engineering. The technology uses an electrochemical process to release carbon dioxide (CO₂) captured by amines with electricity, rather than high temperature steam traditionally used in thermal amine systems. This innovative approach reduces the energy requirements and capital costs for carbon capture and enables much greater flexibility across operating conditions and process scales. The EMAR technology has been in development at MIT for over a decade, with recent breakthroughs by Dr. Michael Massen-Hane and Dr. Michael Nitzsche, paving the way for emissions reductions that were previously infeasible. Drs. Massen-Hane and Nitzsche have since become co-founders of Solvanic to scale the technology into industry and maximize their climate impacts.

“To deliver on our ambitious low carbon intensity LNG goals, we need to capture carbon dioxide emissions from both our natural gas pretreatment and cogeneration facilities,” said Nick Flores, Chief Executive Officer, Coastal Bend LNG. “For post-combustion capture on our onsite cogeneration facilities, we need a step change in carbon capture efficiency. We’re highly encouraged by Solvanic’s preliminary techno-economics and are keen to accelerate their technology readiness with this FEED study.”

“We have demonstrated our EMAR solution to Technology Readiness Level 4 with low energetics, high stability, and modular scalability across emission sources,” said Dr. Michael Nitzsche, Co-Founder and Chief Technology Officer, Solvanic. He added, “This FEED study accelerates our techno-economic analyses for gas processing and post-combustion carbon capture with the full engineering support of Coastal Bend LNG and their contractors.”

“We are leveraging over a decade of electrochemical carbon capture research and development at MIT via this option agreement. We appreciate Coastal Bend LNG’s confidence in the technology to meet their industrial decarbonization objectives,” said Dr. Michael Massen-Hane, Co-Founder and Chief Executive Officer, Solvanic.

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About Coastal Bend LNG

Coastal Bend LNG is a privately held energy infrastructure development company dedicated to delivering low-carbon energy to the world. With a focus on sustainability, innovation, and operational excellence, the company is at the forefront of unleashing American energy dominance. For more information, visit www.coastalbendlng.com.

About Solvanic

Solvanic develops flexible industrial decarbonization solutions. Their modular electrochemical systems deliver step changes in levelized cost of carbon capture to enable economical decarbonization for even the hardest-to-abate industrial processes. To learn more, visit www.solvanic.com.

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