

SOLVENT BASED CARBON CAPTURE TECHNOLOGY

Carbon capture technology plays a crucial role in reducing CO₂ emissions from industrial processes and power generation. Capturing CO₂ is increasingly important for industries like cement, steel, chemicals and waste-to-energy, to meet emission regulations and support their decarbonization efforts. Lowering emissions also provides opportunities to trade or save surplus allowances.

At Brusche Process Technology, we specialize in designing and building custom carbon capture solutions, from pilot and demonstration plants to full scale installations. Our innovative technology produces nearly 100% pure CO₂ from CO₂-rich gas streams. Our designs can be easily adapted to any flue gas flow and CO₂ concentration and ensure compliance with environmental standards, while minimizing operational costs.

In addition, we analyze, troubleshoot, and optimize existing capture plants and carry out feasibility studies to how carbon capture can be implemented in your facilities.

Advanced absorption technology

Our solvent-based CO₂ absorption technology is a proven solution for capturing CO₂. Our system features:

- A low-temperature differential reboiler to minimize solvent degradation;
- Optimized design to minimize energy consumption based on your specifications;
- Option to valorize waste heat in a district heating network;
- Plant design based on industry-standard MEA solvent, but advanced solvents (like CESAR-1) can be used when energy consumption is crucial.

Solvent reclaiming & emission control

Acidic impurities like sulfur dioxide, hydrogen chloride and nitrous oxides can form heat stable salts (HSS). Accumulation of these salts lowers the CO₂ capture capacity over time. Our integrated solvent recovery system effectively removes these salts, minimizing solvent loss and maintaining efficiency.

Additionally, our plants are designed with proper solvent emission and degradation management strategies. With this, solvent losses are minimized and emissions of degradation products such as ammonia, aldehydes and amines are kept within emission regulations.

Pilot and demopplants

What is the best technology to capture CO₂ from your process? With in-depth knowledge of pilot and demo planting, we can design, engineer and build your custom testing facility.

Combined with our experience with different solvents and advanced modeling tools, we provide a tailor made solution for your needs. By validating the process on small scale, you are in the position to make well informed decisions.



From design to realisation

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Collaboration with LAB

We partner with LAB (France) in the field of carbon capture for waste-to-energy plants. LAB is a leading European company, bringing extensive expertise in flue gas treatment and condensation technologies. Together, LAB and Brusche possess and master the technologies, skills and experience to design and build customized and competitive carbon capture solutions.

Industries we serve

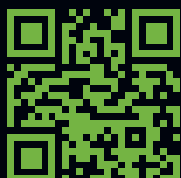
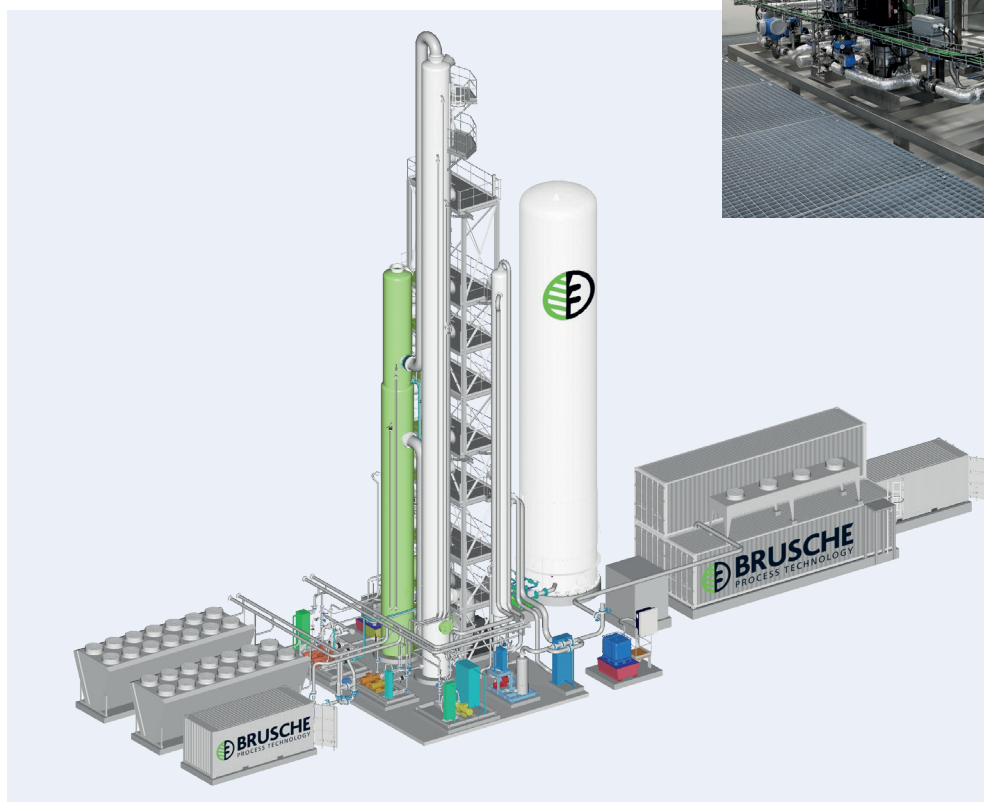
- Chemical production & processing;
- Steel & cement industry;
- (Waste-to-) Energy & power generation;
- Oil and gas refining.

Your technology partner for CCUS

Brusche Process Technology is your technology partner for the entire CCU(S) process – from CO₂ capture from flue gases, through liquefaction and methanol synthesis, to cutting edge pilot and demonstration plants for the production of green platform chemicals and e-fuels. Our innovative systems help industries maximize resource efficiency, reduce emissions and support a circular carbon economy. Looking to optimize your CO₂ capture and utilization strategy? Contact us to explore tailored solutions for your industry or process!

Why choose Brusche?

- Tailor made designs optimized to your boundary conditions;
- Over 10 years of experience with design and operation of carbon capture plants within our company;
- End-to-end solutions, from in-house design and process engineering to implementation and maintenance;
- Integrated approach saving time and resources;
- Pilot, demo and full-scale plant expertise;
- High yield systems capturing near-100 percent pure CO₂;
- Robust, energy optimized, and reliable technology;
- Seamless retrofit into existing process infrastructure;
- Robust, low-maintenance solutions, minimizing total cost of ownership;
- Analysis, problem-solving and optimization of existing plants.



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