TB12: Pilot Plant for CO2 liquefaction

With RISE’s new pilot plant for cleaning and liquefaction of CO2, owners of CO2-rich side streams can now take a further step towards CO2 utilization or sequestration (CCU/S).

Tests with our mobile and flexible pilot plant can be used as a proof of concept to demonstrate the compatibility of your carbon dioxide with different existing and upcoming markets’ requirements. Test results will show which unit operations are necessary to obtain a certain product quality and may be used as a base for investment decisions for future full-scale plants.

RISE is Sweden’s vehicle for interdisciplinary innovation and change. Around 30 research institutes and approximately 130 test environments work together as an independent actor with a wide range of competences.

FACTS ABOUT THE TEST BED

- Fully automated, mobile plant
  - We come to your site.
- Plant size:
  - One 20' high-cube container
- Capacity:
  - 10 Nm³/h, 20 kg/h
- Acceptable gases:
  - > 90% CO₂
- Modular concept for a flexible CO₂ product quality according to your needs.
- Plant consumables:
  - * Electricity 32 A
  - * Water
  - * Activated carbon

This test bed is part of RISE Bioeconomy Arena.
Negative Emissions

Create negative emissions by capturing biogenic carbon dioxide from your processes and supply it to CCS plants where it will be stored permanently in geologic formations. Or re-use the CO₂ in other markets and avoid new emissions (CCU). Even better, when treating a gas flow containing methane using a stripper column, as it is possible to do in our test bed, you can bring methane emissions down to zero and at the same time increase the amount of recovered methane from your plant!

Flexible Unit Operations

The test bed is built up of a number of unit operations as shown above. In contrast to full scale plants, any of the treatment steps can be switched on and off, thus enabling us to tailor the process to the composition of your specific CO₂ flow and the requirements of the market segment which is most important for you. Knowing which unit operations are required gives you valuable information for the procurement of your full-scale plant.

We Come to Your Site

Our test bed is a mobile plant, completely contained in a standard 20 foot sea container. Thus, we can come to you and make tests with your gas on-site. The plant is fully automated and can be supervised remotely.

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https://www.ri.se/sv/vad-vigor/test-demo/testbadd-for-co2-reening-och-furvatskning