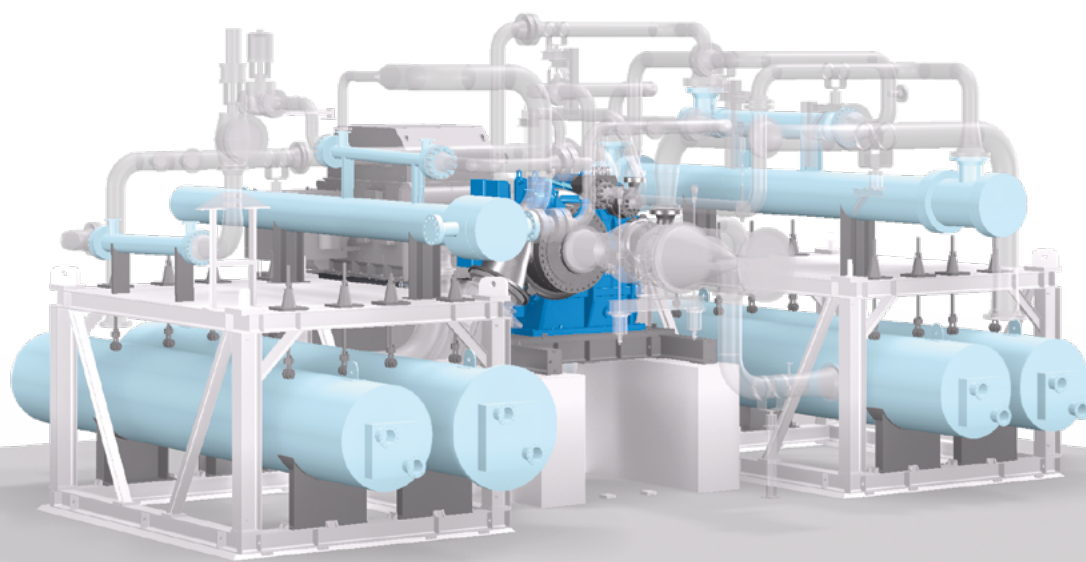


# Carbon Capture, Utilization, and Storage



## End-to-end experience for CCUS

### Benefits at a glance

- Reduction of carbon emissions, especially in hard-to-abate sectors
- CO<sub>2</sub> becomes a commodity
- Industrial plant is integrated into a new energy infrastructure centered on CO<sub>2</sub> utilization and renewable hydrogen
- Industrial plant is connected with other industries and sectors including transport, utilities, municipalities, and renewable energy

**Everllence**

# Design your business case with carbon capture

## Dealing with unavoidable emissions

The energy transition is underway and industry is doing its part to reach net zero by increasing efficiency and replacing fossil fuels. However, there is still the problem of unavoidable emissions caused by industrial processes – these account for around 30 % of all industrial greenhouse gas (GHG) emissions.

As unavoidable emissions move to the forefront of discussions, scientists, politicians, and industry leaders agree – there is no way to achieve climate targets without carbon capture. Avoidance, balancing, and capture are the three main carbon-reduction tactics. But not all three approaches are viable for all industrial producers. Industrial plants emit large amounts of CO<sub>2</sub> in flue gases. This CO<sub>2</sub> can be captured after combustion using methods such as amine treatment and cryogenic capture.

## The technology for carbon capture

Everllence provides the leading compression technology and expertise necessary for CCUS.

This includes displacement compressors and turbo compressors. Everllence oil-free screw-type compressors combine the advantages of turbo and reciprocating compressors, with volume flows of 200 – 20,000 m<sup>3</sup>/h and discharge pressure up to 52 bar. The RG integrally geared compressor has suction flow rates of up to 600,000 m<sup>3</sup>/h and maximum discharge pressure up to 250 bar. With its improved impeller design, optimized pinion speeds and tailored aerodynamics, it guarantees the highest level of efficiency. The multistage design also fully complies with API standards.

Modularity is the key to scaling CCUS as needed. CCUS offers modular compression solutions for all available capture

technologies. CCUS solutions are optimized for delivery and erection time thanks to years of experience in compression of dry and wet CO<sub>2</sub> and more than 1,000,000 operating hours in CO<sub>2</sub> compression applications.

## System solution

CCUS is a proven and practical solution for reducing industrial emissions. Everllence provides the compression technology necessary for the various CO<sub>2</sub> gas streams within the capture process (amine, cryogenic, PSA, membrane), including the integration of compression duties for CO<sub>2</sub> liquefaction or delivery to pipelines for transportation.

The CCUS compression systems adapt flexibly to required discharge pressures or side streams and can integrate heat and power recovery systems to make plants more efficient and regenerate some of the required heat and power.

## Selected applications

Installations that traditionally emit large amounts of CO<sub>2</sub> are prime candidates for CCUS technology, either retrofitted or as part of new plant construction.

### Hard-to-abate sectors include:

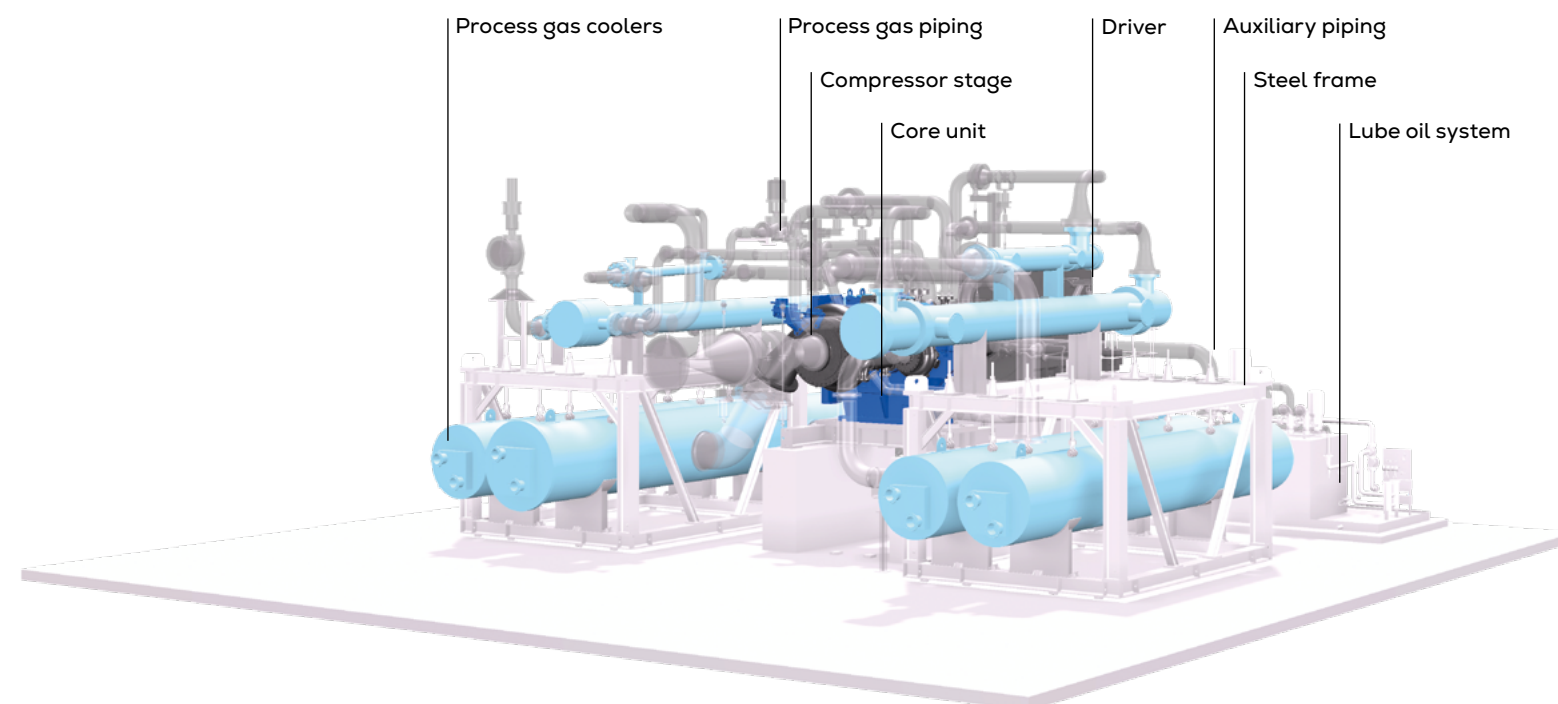
- Cement
- Petrochemicals
- Metals
- Refineries
- Midstream and upstream oil & gas
- Blue hydrogen
- Fossil fuel power generation

For these sectors a carbon capture heat recovery (CCHR®) installation is beneficial as it helps reduce the cost of CCUS.

## Key components

- **Carbon capture**  
All capture technologies are supported by CCUS.
- **Storage**  
All CO<sub>2</sub> storage options and transportation methods are supported by CCUS.
- **RG compressors**  
Best-in-class compressor for CO<sub>2</sub> compression.
- **Renewables**  
CCUS is compatible with hydrogen electrolysis (H-TEC SYSTEMS), hydrogen compression, CO<sub>2</sub> batteries, direct air capture (DAC), and e-fuel technologies.
- **Heat and power recovery**  
Everllence can provide efficient solutions to reduce power needs within a plant by recovering expansion energy and using waste heat to produce steam, electricity and hot water.

- **Power-to-X (PtX)**  
CCUS offers straightforward integration solutions for PtX or other utilization cases. After capture, purification and compression, carbon dioxide is distributed to industrial producers who use it as raw material. Carbon dioxide can be used as a feedstock for marketable fuels chemicals and then can be processed within DWE reactors together with hydrogen to produce synthetic methane (Power-to-Gas = PtG), methanol or kerosene (Power-to-Liquids = PtL) as well as Power-to-Chemicals (e.g. methanol to olefins). Everllence is a market-leading provider of PtX technologies.



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