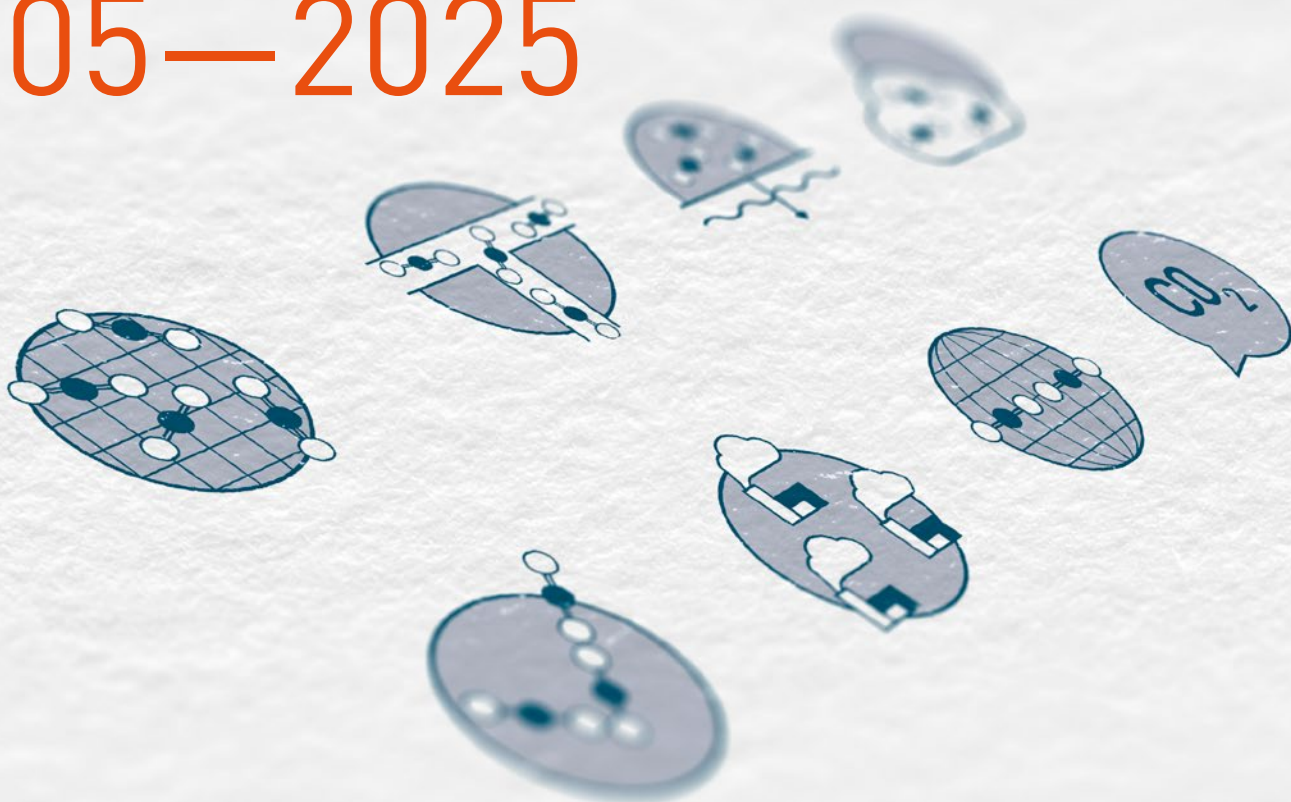


# Portfolio Analysis 2005—2025



**CLiMIT** 20  
YEARS

# Preface

In 2025, the CLIMIT programme celebrates its twentieth anniversary, marking two decades of significant contributions to CCS solutions.

This report highlights the achievements and impact of this important initiative.

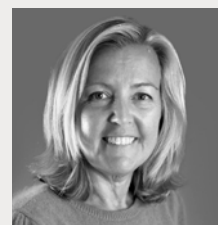
The programme targets industry, research institutes, universities, and colleges, often collaborating with international partners to advance efficient and cost-effective climate solutions.

The CLIMIT secretariat has contributed to compiling this overview of CLIMIT's portfolio.

**Enjoy your reading!**

The CLIMIT secretariat 

**Kari-Lise Rørvik (chair)**



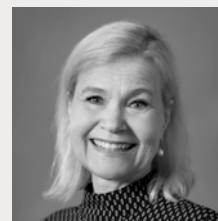
**Erik Gjernes**



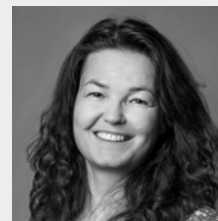
**Ernst Petter Axelsen**



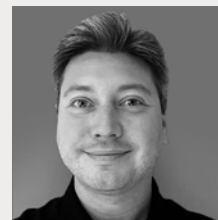
**Jørild Svalestuen**



**Kirsten Haaberg**



**Kristian Stangvik**



**Liv Lønne Dille (editor)**



**Thor Hans Østvedt**



**Aage Stangland**



## Key figures

800

projects

**NOK 5.2**

**BILLION**

total granted

# 20 years of strong CCS technology development

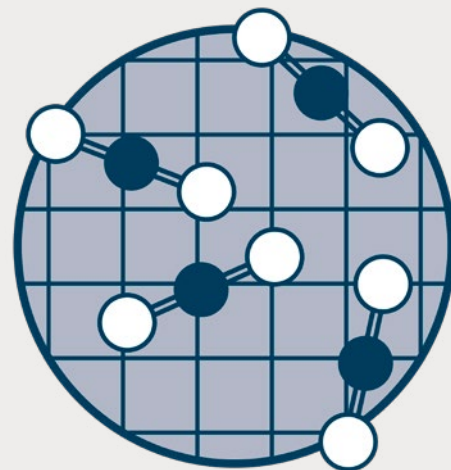
Technologies developed through the CLIMIT programme shall build up under the Norwegian government's strategies and work regarding carbon capture and storage (CCS) as a climate initiative, both for achieving national climate goals and so that the technology can be rolled out internationally. Since 2005, we have seen a major development in the programme's mandate.

## A few Key elements

- Research, development and demonstration
- Technology trends and future opportunities
- Collaboration and networking
- Communication and dissemination

Read  
more  
online

# CO<sub>2</sub> Capture



Capturing CO<sub>2</sub> from power and industrial sources requires efficient capture processes to separate the CO<sub>2</sub> from the flue gas. Today's capture technologies face many common challenges, such as the need for energy efficiency, robust materials, gas selectivity requirements, capacity/capture rate, space requirements and the cost of the entire capture process, including support and auxiliary systems.

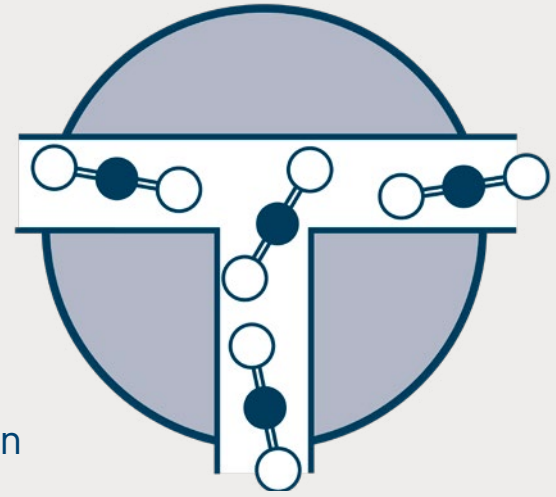
Over the past 20 years, CLIMIT has contributed to the development of Norwegian capture technology from laboratory scale to commercial technology solutions with an international market.

[Read more online](#)

## A few Key elements

- The first projects funded by CLIMIT almost 20 years ago were mostly solvent-based capture technologies. Solvent capture is the capture technology with the most projects in CLIMIT and is still the most mature capture technology.
- From Laboratory to Longship
- Trends in CO<sub>2</sub> capture
- Industrial pilot testing of CO<sub>2</sub> capture
- Hydrogen

# CO<sub>2</sub> Transport



The funding received from the CLIMIT programme for research into CO<sub>2</sub> transportation has generated significant new knowledge. Industry actors and academic communities have gained a deeper understanding in areas such as corrosion, safety, and measurement, simulation and fluid dynamics.

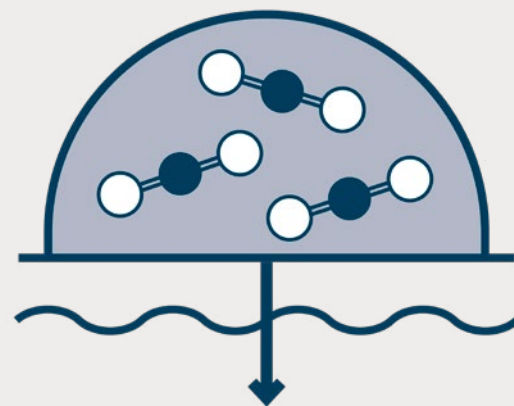
The transport projects have highlighted several issues that have created the need for further research and development.

[Read more online](#)

## A few Key elements

- Pipeline and ship transport of CO<sub>2</sub> provide new opportunities for cost-effective solutions.
- Knowledge about corrosion and chemical reactions is essential regarding specifications in CO<sub>2</sub> transport.
- Measurement, simulation and instrumentation technology are key to understanding conditions and challenges in the transport segment.

# CO<sub>2</sub> Storage



The ability to store CO<sub>2</sub> securely in geological formations is crucial for the success of CCS as a climate solution. Over the last 20 years, CLIMIT has supported significant advancements in CO<sub>2</sub> storage technology, addressing challenges such as site selection, injection strategies, and long-term containment.

By facilitating research, development, and demonstration projects, the programme has strengthened Norway's position in CO<sub>2</sub> storage.

[Read more online](#)

## A few Key elements

- Identification and characterization of suitable storage sites.
- Development of advanced monitoring techniques and simulation software to track CO<sub>2</sub> movement and ensure containment.
- Improved understanding of storage dynamics, including pressure management and caprock integrity.
- Mitigation of risks such as leakage and induced seismicity.
- Innovations in CO<sub>2</sub> well technology, ensuring secure injection and long-term well integrity.

# Environment

In 2008, CLIMIT funded a project on amines and health and the environment for the first time. The background is complex, but CO<sub>2</sub> capture with amines can result in small emissions of amines and degradation products to air via the purified flue gas leaving the stack. In the capture plant itself and in the atmosphere, amines can react to form groups of substances such as nitrosamines and nitramines, which are associated with a possible cancer risk. Over the years, CLIMIT has supported many projects, and the level of knowledge has increased significantly.



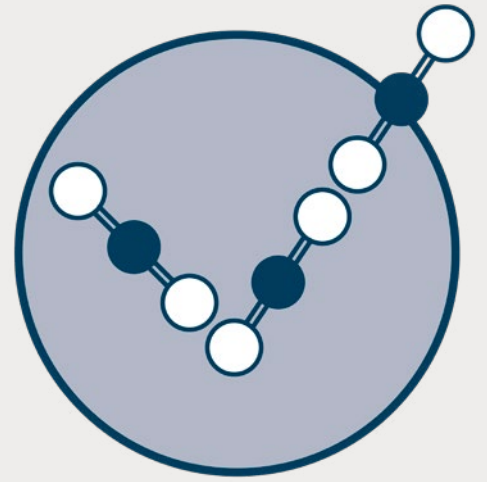
[Read more online](#)

## A few Key elements

- Increased knowledge of emissions to air
- Amine abatement a key issue
- How can amine emissions to air be reduced?
- Limit values for air and drinking water



# Standards



The CLIMIT programme aims to reduce greenhouse gas emissions from industry through the development of sustainable carbon management solutions. An important part of this work is the development and implementation of international standards that ensure the safe, efficient and reliable management of CO<sub>2</sub>, and ISO standardization plays a key role in this.

[Read more online](#)

## A few Key elements

Standardization has several important functions in a CLIMIT perspective:

- Safety and reliability
- Efficiency and cost savings
- International acceptance and market development
- Confidence and regulatory support

# Industrial clusters



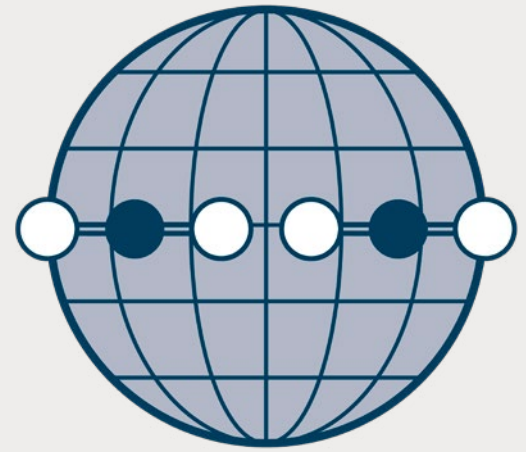
Most products shipped to the market are produced through industrial processes that often involve significant carbon emissions. To achieve our climate goals, it is therefore important that industry finds good solutions to remove or reduce environmentally harmful emissions as much as possible. CLIMIT support for the development of carbon capture technologies and pilot scale testing under real-world conditions has been and still is of great importance to industry.

[Read more online](#)

## A few Key elements

- Interaction with industry
- Risk reduction
- Cost-effective and sustainable technology
- Case: Successful pilot testing at Elkem, Rana

# International collaboration



The CLIMIT program has for many years allocated around a quarter of available funds to international joint calls. This is because international research collaboration can more easily create an international market for CO<sub>2</sub> management.

[Read more online](#)

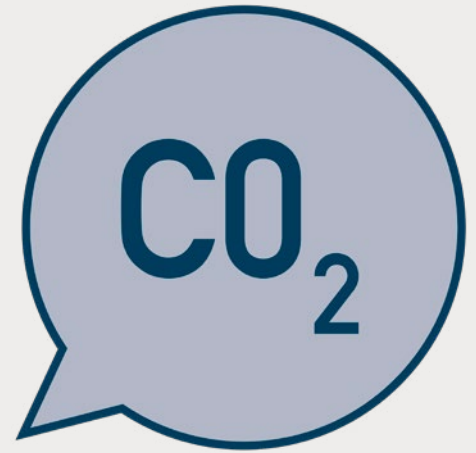
## A few Key elements

- International collaboration yields results
- Larger grants due to close collaboration
- High industrial participation has been a priority
- Results with high relevance for large-scale projects
- Strong focus on knowledge sharing

# Knowledge sharing

CLIMIT has been a driving force in sharing knowledge about CCS technologies. An important goal for the programme is to share knowledge and experiences from the projects that receive support. Knowledge dissemination is enshrined in all contracts with the involved stakeholders.

Over the years, CLIMIT has also organised several of its own events with presentations and exchanges of ideas related to results and experiences from the research projects.



## A few Key elements

[Read more online](#)

- CLIMIT Summit
- Webinars in collaboration with industry
- National and international collaboration
- Important digital channels for knowledge sharing

[climit.no/en](https://climit.no/en)

**INTERNATIONAL  
COLLABORATION**

**20**  
YEARS