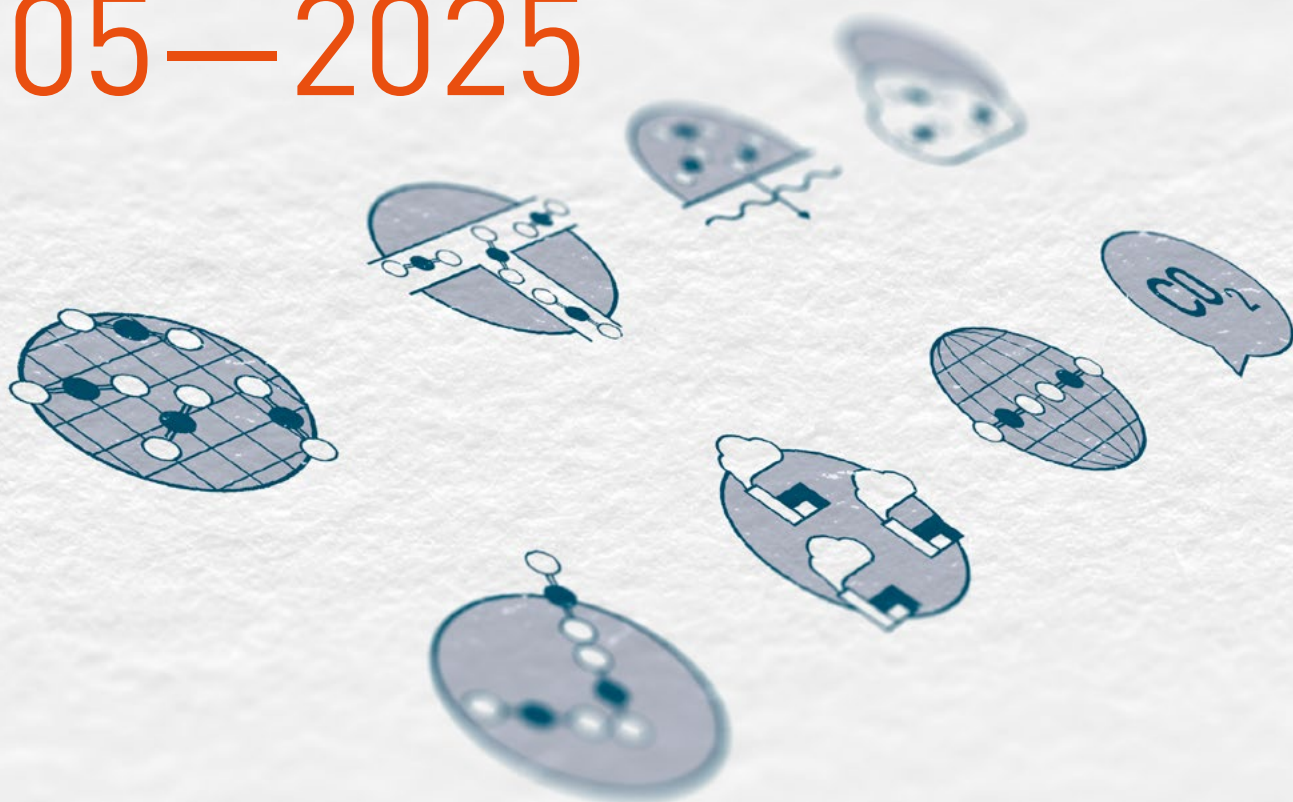


Portfolio Analysis 2005—2025



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.

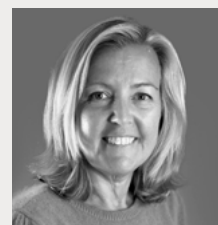
The programme targets industry, research institutes, universities, and colleges, often collaborating with international partners to advance efficient and cost-effective climate solutions.

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

Enjoy your reading!

The CLIMIT secretariat 

Kari-Lise Rørvik (chair)



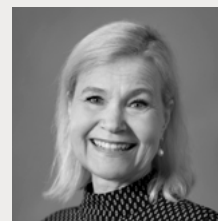
Erik Gjernes



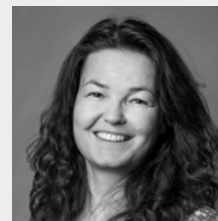
Ernst Petter Axelsen



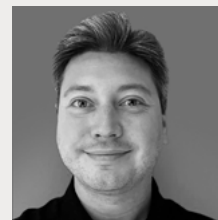
Jørild Svalestuen



Kirsten Haaberg



Kristian Stangvik



Liv Lønne Dille (editor)



Thor Hans Østvedt



Aage Stangeland



Key figures

800

projects

NOK **5.2**
BILLION
total granted

20 years of strong CCS technology development

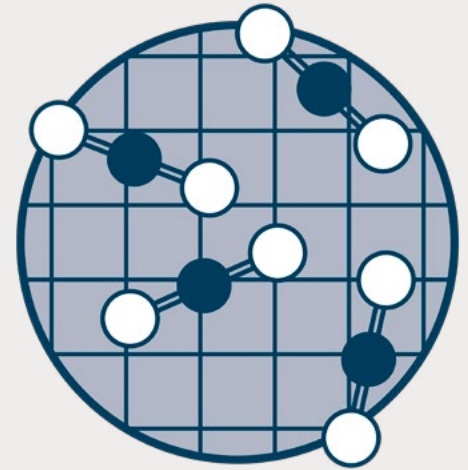
Technologies developed through the CLIMIT programme shall build up under the Norwegian government's strategies and work regarding carbon capture and storage (CCS) as a climate initiative, both for achieving national climate goals and so that the technology can be rolled out internationally. Since 2005,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

CO₂ Capture



Capturing CO₂ from power and industrial sources requires efficient capture processes to separate the CO₂ 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.

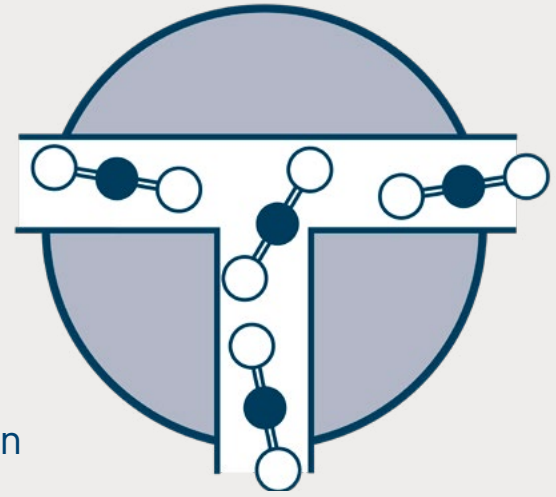
Over the past 20 years, CLIMIT has contributed to the development of Norwegian capture technology from laboratory scale to commercial technology solutions with an international market.

[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 CO₂ capture
- Industrial pilot testing of CO₂ capture
- Hydrogen

CO₂ Transport



The funding received from the CLIMIT programme for research into CO₂ 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.

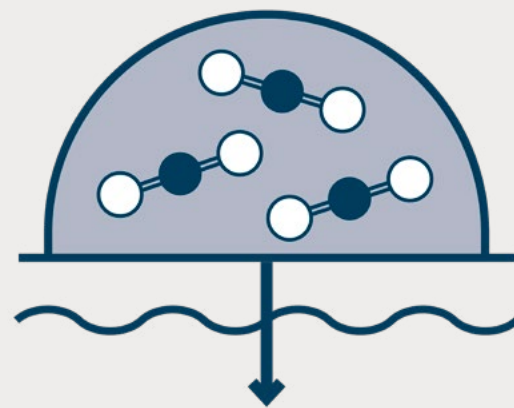
The transport projects have highlighted several issues that have created the need for further research and development.

[Read more online](#)

A few Key elements

- Pipeline and ship transport of CO₂ provide new opportunities for cost-effective solutions.
- Knowledge about corrosion and chemical reactions is essential regarding specifications in CO₂ transport.
- Measurement, simulation and instrumentation technology are key to understanding conditions and challenges in the transport segment.

CO₂ Storage



The ability to store CO₂ 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 CO₂ 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 CO₂ 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 CO₂ 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 CO₂ 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 CO₂ 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.

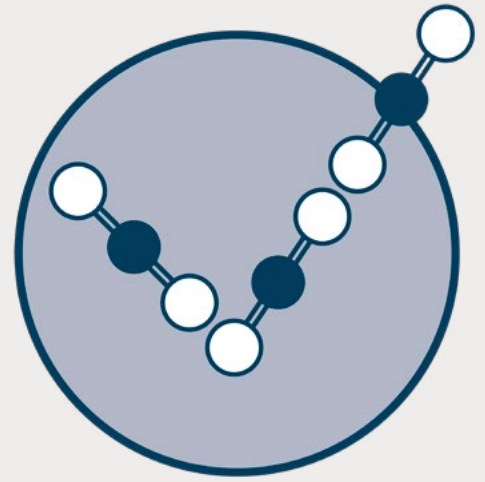


[Read more online](#)

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 CO₂, and ISO standardization plays a key role in this.

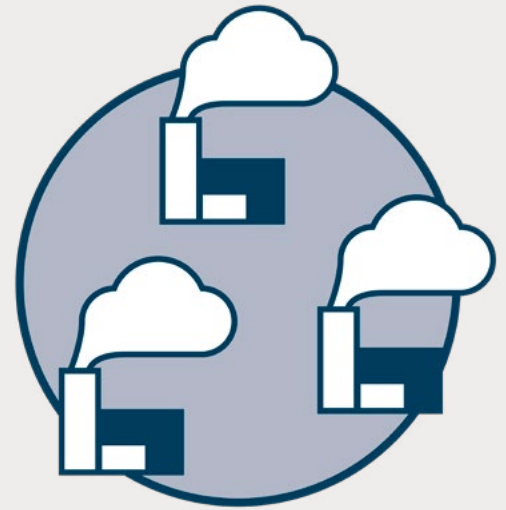
[Read more online](#)

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



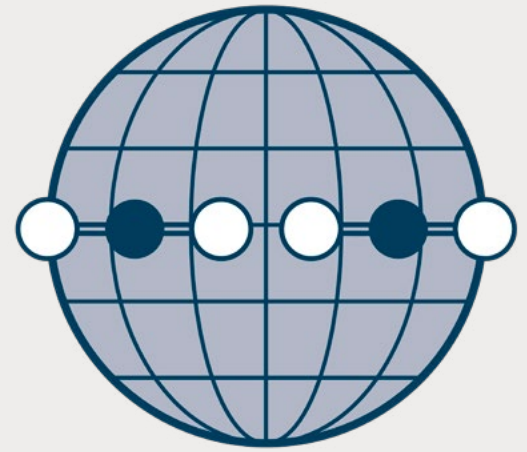
Most products shipped to the market are produced through industrial processes that often involve significant carbon emissions. To achieve our climate goals, it is therefore important that industry finds good solutions to remove or reduce environmentally harmful emissions as much as possible. CLIMIT support 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 CO₂ management.

[Read more online](#)

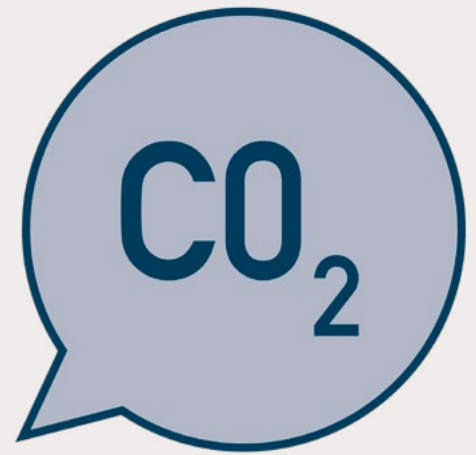
A few Key elements

- 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

www.climit.no/en

**INTERNATIONAL
COLLABORATION** | **20**
YEARS