CLIMIT SUMMIT 2023 – Speakers

February 8

11:50-13:05	Keynotes (Storsalen)
13:30-16:40	CCS Speed Dating Capture (Bølgen 1) Transport&Value Chain (Bølgen 2) Storage (Bølgen 3)
17:10-18:10	Keynotes (Storsal)

February 9

08:45-09:30	Keynotes (Storsalen)
10:00-11:00	Technical sessions Capture&Business models (Bølgen 1) Transport&Value Chain (Bølgen 2) Storage (Bølgen 3)
12:00-14:00	Longship Sails on (Storsalen)

Arvid Nøttveit

Welcome

Arvid Nøttveit is a strategic advisor for energy at the Norwegian Research Centre (NORCE) based in Bergen and was CEO of its predecessor Christian Michelsen Research for 14 years. He has extensive experience from research in the oil and gas industry, and from managing practical work in drilling, exploration, field development and operations on the Norwegian continental shelf and around the world. Nøttveit holds a PhD in geosciences from the University of Bergen.

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Kristin Halvorsen

Moderator

Kristin Halvorsen is director of Center for International Climate and Environmental Research - Oslo. Halvorsen is also Acting Chairman of the Board for the Norwegian Research Council. She is former head of Bioteknologirådet and former chairman of the board for the Natural History Museum. She is a former politician and was a member of the Stoltenberg II government from 2005 to 2013. From 2005 to 2009 she was Norway's first female Minister of Finance and from 2009 to 2013 she was Minister of Education and Research. From 2005 to 2012 she was number two in the government and deputy prime minister.

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February 8 – Key notes

Kl. 11:50-13:05

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Terje Aasland

The Government’s CCS policies

Terje Aasland was born on 15th February 1965 and grew up in Skien, Norway.

He was appointed Minister of Petroleum and Energy for the Labour Party in Prime Minister Jonas Gahr Støre’s government on 7th March 2022. He has been elected to the Parliament for the Labour Party from Telemark county since 2005 where he has been member and leader of the parliament's Standing Committee on Energy and the Environment and the parliament’s Standing Committee on Business and Industry.

Aasland is a certified powerline worker (1986) and worked in several power companies in the Telemark region before being elected to the Norwegian parliament in 2005.

His political background include positions as a city council member in Skien for the Labour Party, leader of the Labour Party in Telemark and central board member of the Labour Party since 2011.

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Per-Olof Granström

Strong positive momentum for CCUS in the EU

Per-Olof Granström is EU Director at CCSA/Zero Emissions Platform. He has previously held various positions in the European energy sector, such as Secretary General of EDSO, Vice Chairman of the Global Smart Grid Federation, Director of European Affairs at Vattenfall, Executive Vice President at Swedenergy and Vice President/Director of trade at Nord Pool – the Nordic Power Exchange. He holds a M.Sc. in Industrial Engineering and Management from Linköping University in Sweden.

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Mark Ackiewicz

Update on Recent Carbon Management Developments in the United States

Mr. Mark Ackiewicz is the Director for the U.S. Department of Energy Office of Carbon Management Technologies. In this role, Mark is responsible for planning, management, and administration of the Office's RDD&D portfolio. He leads a team of scientists and engineers that are collaborating and working domestically and internationally with industry, national laboratories, and universities on developing advanced and transformational technologies for carbon capture and storage (CCS); hydrogen integrated with carbon management; and carbon dioxide removal (CDR) and conversion.

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Roy Vardheim

Constructing Europe's first multi-source CCS chain - learnings and future thoughts

Roy Vardheim is the CEO of Gassnova SF. Vardheim has been in charge of Gassnova's TCM department from 2017 to 2021. Prior to that he was the CEO of Technology Centre Mongstad (TCM).

Vardheim has extensive experience in executive management in a series of companies, including periods as CEO of Norske Skog Saugbrug AS and Borealis. He also has international experience in the top management, including roles at Borouge in the Middle East and BIS in Scandinavia.

Vardheim serves as the Chairman on a number of Boards, including those of Grenland Havn IKS, Skagerrak Sparebank, Frier Vest Holding AS and Grenland Havn Eiendom AS. Roy Vardheim holds a Master degree in Industrial chemistry from the Norwegian Institute of Technology (now known as the Norwegian University of Science and Technology)

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Rune Volla

Large-scale deployment of CCS depends on comprehensive R&D

Rune Volla is the Director of the Department for Energy and Energy Transition at the Research Council of Norway (RCN). The department covers research and innovation in the whole energy field; renewable energy, energy efficiency and security, energy infrastructure, carbon capture usage and storage and oil and gas.

He is RCN's representative in the ACT steering group, the CETP governing group, the Norwegian representative in IEA End Use Working Party and serves at the board of Nordic Energy Research and Energy 21.

Rune Volla received his PhD degree in energy engineering from the Norwegian University of Science and Technology in 1995. After two years as a senior researcher at SINTEF Energy and two years as an energy consultant he joined the energy utility company of Oslo, Hafslund, in 1999 where he worked 12 years in different positions. In 2011 he joined the Research Council of Norway.

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February 8 – CCS Speed Dating Capture

Kl. 13:30-16:40

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Jan Gabor

CO_2 HUB Nord, pilot CO_2 capture in Mo Industrial park

Educated at BI Norwegian Business School, worked for more than 35 yrs in construction and industry. Leading positions focusing on business development. Currently leading Mo Industrial parks sustainability program, responsible for all area, buildings and infrastructure, existing customers as well as new, large establishments. First CCUS projects started in 2016, CO_2 HUB Nord is the third stage. Participated in Process 21 on CCS as well av attractiveness, currently also a member of the CLIMIT Programme Board.

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Bjørn Hølaas

Mid Norway CCS Cluster

Current position.

VP/director CCS

Previous role; 24 years within energy utilities.

Trondheim Energy; EVP retail and trading, EVP staff functions, CEO.

Statkraft; SVP district heating, VP leadership support and shared services

Education:

Batchelor communication and risk management.

MBA strategic management

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Tiril Fjeld

CCS Haugalandet

Tiril has been CEO of Haugaland Industrial Park since 2019 and previous she had 20 years' experience from the technology industry. She has experience as board member from i.e. energy industry.

Haugaland Industrial Park is Norway's largest zoned industrial area, located in a strong industrial region with large prosses industry, located on the west coast of Norway. A region with some of the country's largest (single point) CO_2-emissions.

In January this year, the news was released that Haugaland Næringspark has signed an option agreement with Horisont Energi for the establishment of their CO2-terminal in the project named Errai.

Tiril seeks collaboration to get things done and last year she took the initiative through the industrial park for a joint technical-economic analysis for a CCS infrastructure with the largest industrial players at Haugalandet. It is this study that she will tell more about today.

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Ketil Bergmann

Eyde-Klyngen – Ongoing CCS projects at Returkraft

Educated in the Norwegian Navy with 25 years of service in the Navy including positions as Commanding officer and project management in several large procurement projects. Have been working in the Waste to Energy sector for the last 10 years with focus on environment and quality. Started first CCU projects at Returkraft in 2018 and have been working with CCS 100 percent from 2021, with the aim of establishing a full-scale CCS chain at Returkraft in 2030.

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Kristian Leonard Aas

GICCS – A Joint Solution Approach to CCS in Grenland

Has worked at SINTEF since 2017 when Tel-Tek became part of SINTEF. Worked for Tel-Tek since 2013. Worked before this with silicon wafers at REC Wafer T&D, in the period 2006-2012 and with jet engine components at Norsk Jetmotor/Volvo Aero Norge, in the period 1992-2006. Works with energy and climate related projects in collaboration with the process industry in Grenland. Current topics are utilization of surplus heat and CO_2 capture. Other topics are powder technology and Additive Manufacturing

Dr.Ing. (PhD) NTNU, Production and quality engineering, production systems
Siv. Ing. (MSc) NTH, Physical Metallurgy

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Guro Nereng

Borg CO_2: Full-scale capture, storage and terminal

Guro Nereng recently joined Borg CO2 as public affairs manager.

She has experience from the environmental NGOs Bellona and ZERO. There, she worked to promote better public instruments and framework for energy efficiency in buildings and for green public procurement.

In the past 7 years she has worked as climate mitigation advisor towards and in municipalities. First at the Østfold county administration and now at Fredrikstad municipality. Nereng splits her time 50-50 between Borg CO_2 and Fredrikstad municipality.

Her academic background is from industrial design engineering at NTNU.

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De Chen

Carbon capture by solid sorbents: materials and process

Dr. De Chen is a professor in catalysis at the Department of Chemical Engineering, Norwegian University of Science and Technology (NTNU) since 2001 (associate professor 1998-2001). He earned his PhD in industrial catalysis at NTNU, Norway, in 1998. He was a visiting professor at the University of California at Berkeley (2009-2010) and East China University of Science and Technology (2017-2018). His research is mainly on a multiscale approach at the interface between catalysis science and industrial chemical processes. His work on combined theoretic and experimental heterogeneous catalysis has in several instances led to the development of new catalysts for gas to liquids, monomer production for polyvinyl chloride (PVC), biomass to liquids, natural gas to olefins, hydrogen production and fuels, as well as materials for CO_2 capture technologies, plastic waste recycling and energy storages. He is a member of the Norwegian Academy of Technological Science and Royal Norwegian Academy of Sciences and Letters. He is the director of innovation hub of upcycling of wastes, a member of the leader group at the national innovation center (iCSI), and FME center of biomass for fuels (Bio4Fuels). He well-published more than 450 scientific papers in pre-reviewed journals (H-index:78) and more than 10 patents.

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Thijs Peters

A novel hybrid process for membrane-assisted hydrogen production with CO_2 capture through liquefaction

Thijs Peters is a senior research scientist and project manager at the Department of Sustainable Energy Technology at SINTEF Industry in Oslo since 2005. His research interests spans from process chemistry, membrane technology, hydrogen production, CO_2 capture, energy efficiency, to gas separation technologies. He has >80 publications in international peer-review journals and contributed to 12 book chapters and close to 200 conferences.

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Mona Mølnvik

CCS for the process industry
– an example from FME NCCS

Mølnvik is Research Director for gas technology in SINTEF Energy Research, heading a department of 60 researchers, and Director of the *Norwegian CCS Research Centre*, NCCS, a 600 MNOK centre of excellence funded by the Research Council of Norway and a strong industry cluster under the FME scheme.

Mølnvik has worked with SINTEF since 1997 and holds a doctoral degree in Mechanical Engineering from NTNU. She has for more than two decades contributed to the development of the CCS area, though building CCS strategies and a strategic portfolio of projects, including EU-, research infrastructure- and large, multi-client projects in Norway. Mølnvik is a Board member in *UKCCSRC,* Petroleum centre *LowEmission,* FME *HighEFF,* and FME *HYDROGENi*.

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Hanne Kvamsdal

SCOPE - Sustainable OPEration of post-combustion Capture plants

Senior Research Scientist in SINTEF Industry with more than 20 years of experience with research related to CO_2 capture technologies. Background in chemical engineering at PhD level within process modelling, simulation and control and experience from offshore process engineering and refinery operation. Has managed various large research projects and has a large international network.

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Zuoan Li

Novel molten/solid composite oxygen transport membranes for CO_2 capture

Ph.D in materials chemistry from University of Vienna (2004-2007).

Post-doc researcher at UiO (2007-2014)

Researcher at SINTEF from 2014

Research area focuses on 1) ceramic and solid/liquid composite materials development for oxygen/hydrogen separation membranes; 2) oxygen carriers' development; 3) chemical looping for hydrogen/chemical production and CO_2 utilization.

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Mario Ditaranto

Accelerating Carbon Capture using Oxyfuel technology in Cement production (AC2OCem)

Mario Ditaranto is Chief Scientist at SINTEF Energi and has more than 20 years of professional experience in the field of combustion science and technologies covering combustion systems for power and industrial processes. He currently leads research projects in oxy-fuel combustion for the Waste-to-Energy and Cement sectors, and in the use of hydrogen and ammonia for gas turbines and furnaces.

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Ragnhild Skagestad

EverLoNG

Ragnhild Skagestad is in charge of the Norwegian part of the ACT project EverLoNG which focuses on ship based carbon capture. Ragnhild holds a Master's degree in mechanical engineering from 2004, and since 2017 she has worked in SINTEF with sustainable development, CO_2 capture and transport and early phase cost estimation.

The objective of the EverLoNG project is to accelerate the implementation of ship based carbon capture, by demonstration the technology on board LNG fueled ships. The project is led by TNO and started up in 2021 and is planned finalized in 2024.

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February 8 – CCS Speed Dating Transport&Value chain

13:30-16:40

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Trine Mykkeltvedt

Impact of CO_2 impurities and additives in CCS (ImpreCCS)

Trine Mykkeltvedt has a phD in applied mathematics from the University of Bergen and has worked as a researcher in NORCE for eight years focusing on various research questions connected to modeling and simulation of CO_2 storage.

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Gaute Svenningsen

Kjeller Dense Phase CO_2 Corrosion Project (KDC-III)

Gaute Svenningsen holds master and a PhD (dr.ing.) degree from the Norwegian University of Science and Technology (NTNU) in Trondheim. He studied intergranular corrosion of aluminium alloys in his PhD-work. He worked two years as a scientist at the Norwegian institute for Air Research (NILU), where he studied the effect of climate change on degradation of historical and cultural artefacts. From 2007 he has been working as a corrosion scientist at the Institute for Energy Technology (IFE). His work has mainly been focused on H_2S and CO_2 corrosion of carbon steel, with particular focus on corrosion related to CCS the last 5 years. Gaute is the project manager for the Kjeller Dense phase CO_2 project (KDC).

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Klas Solberg

CO_2 Safe&Sour JIP: H_2S challenges in CCS pipelines

Klas Solberg is a mechanical engineer working in the DNV technology Centre Høvik. He is the project manager for the CO_2 Safe&Sour JIP by DNV. The project aims to investigate the integrity of CO_2 pipelines when expanding their gas specifications, mainly focusing on the risk for sulfide stress cracking and corrosion associated with increased H_2S levels. In 2021 he received his PhD in fatigue and fracture from NTNU.

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Yessica Arellano

Monitoring and Control of Networks for CCS

Yessica Arellano has two M.S.c 's degrees in Gas and in Oil and Gas Engineering. Her doctoral research focused on multiphase flow monitoring through electromagnetic measurements. She has over 15 years of working experience, encompassing project management for the Oil and Gas Industry, technology consultancy, and R&D services. Currently, Yessica works as a Research Scientist in SINTEF Energy research.

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Luciano E. Patruno

Phenomenological study of unstable two-phase CO_2 flow in a pipeline system

Dr. Patruno is a nuclear engineer educated at the Balseiro Institute in Argentina. He took his PhD at NTNU focused on multiphase flow systems containing a dispersed phase.

He has held several positions within R&D and product development in major oil and gas vendor companies during the last 12 years.

Currently is the head of the flow technology department at IFE, where he works with multiphase CO_2 flows, leading research facilities for Norway and the EU.

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Norbert Hoyer

Enable successful CCS projects through accurate and robust simulation of multiphase transport and injection of pure CO_2 and CO_2 dominated fluids

Norbert Hoyer is responsible for the Flow Assurance technology offered by SLB. This includes the OLGA and PIPESIM simulators and related cloud-based solutions.

He holds a master's in mechanical engineering from The Technical University of Munich and a PhD in informatics from The University of Oslo.

Norbert has been engaged in multiphase transport simulation for the oil and gas and nuclear industries since the late 80's. After starting his career at Institute for Energy Technology (IFE) he has since worked for Scandpower, SPT Group and now SLB.

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Lars-Erik Svabø

Simulating dynamically the full CCS value chain; from carbon capture to CO2 injection into depleted reservoirs and saline aquifers

Worked in Kongsberg since 2007 with our dynamic simulators, K-Spice and LedaFlow.

Have had different positions related to the simulator business, Project manager, Sales Director, Head of Operations, and today responsible for the development of the dynamic simulators.

Work very closely with our LedaFlow partners; SINTEF Industry, TotalEnergies and ConocoPhillips.

Heading the R&D initiatives for CCS with LedaFlow within Kongsberg.

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Ragnhild Skagestad

CO_2los III

Ragnhild Skagestad is the project manager of the CO_2 ship transport project CO_2los III which is a cooperation among SINTEF, Brevik Engineering and several industry partners from both ship, supplier and energy companies. Ragnhild holds a Master's degree in mechanical engineering from 2004, and since then she has worked with sustainable development, CO_2 capture and transport and early phase cost estimation. The CO_2los projects I-III focuses in how to reduce the cost for CO_2 transport by ship and investigate both the design of CO_2 ships and also the opportunities and challenges ship transport introduces in the CCS value chain.

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Per Lothe

PCO2 Technology review and design verification

Mechanical Engineer from NTNU. Experience from Norsk Hydro Oil and Gas followed by Statoil before joining Knutsen OAS Shipping in 1999. Responsible for development of new technology in Knutsen with focus on new technology toward the shipping segment. Have been working for KNCC since January 2022 with LCO2 transport using technology for ambient temperature transport at elevated pressure.

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Gabriele Notaro

Technology Qualification of a low-pressure CO_2 shipping solution

Gabriele has background in Naval Architecture and Marine Engineering from University of Genoa, Italy.

Joined DNV in 2007 and worked as structural engineer in Maritime Advisory with attention to ultimate strength of vessels and offshore structures, rule development, R&D, design verification, trouble shooting. Member of ISSC since 2015, he is currently joinig the «Renewable Energy» committee.

Gabriele contributed to projects within production, transportation, and storage of liquefied gas and concept development with increasing focus on shipping of CO_2 in the context of CCS and CCU. At present, on the behalf of DNV, he is managing the JIP on technology qualification of low-pressure shipping solution.

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Ingvild Ombudstvedt

Development of technical standards to support commercialization and further R&D for CCUS

Ingvild Ombudstvedt is the owner and founder of IOM Law. She has been working on legal issues relating to CCS, CCU, CCUS and petroleum since 2012 and has through her work from Arntzen de Besche Law Firm (Oslo office), the Global CCS Institute (Brussels office) and IOM Law gained extensive experience developing and advising on regulatory framework for CCS, CCUS and negative emissions. This includes drafting a legislation proposal for negative emissions.

She is appointed national expert for Norway to the ISO project TC265, which is established to provide ISO standards for CCS and CO2-EOR. In 2022, she was appointed Chair of the Norwegian delegation. She is former Chairperson of the Norwegian Association for CCUS and Baltic Sea Region Energy Cooperation CCS Expert Network.

Ombudstvedt is currently undertaking an LLM in Environmental, Natural Resources and Energy Law at Lewis and Clark Law School, Portland, USA. She is also a dissertation supervisor and sensor for the master of laws programme at the University of Bergen.

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Dr. Rolf Golombek

Developing value chains for CO_2 storage and blue hydrogen in Europe

Rolf Golombek holds a PhD in economics on natural gas markets in Europe from the University of Oslo. He has been with the Frisch Centre, a research centre named after the Norwegian Nobel prize winner in economics, for a number of years. The Frisch centre conducts applied economic research. Rolf Golombek has been doing research and published extensively internationally on energy markets and climate policy and instruments. Rolf Golombek is the leader of the CLIMIT funded project: Developing value chains for CO_2 storage and blue hydrogen in Europe (short name: Device).

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Markus Steen

Socio-technical drivers, opportunities and challenges for large-scale CCUS (CaptureX)

Markus Steen works as Senior Research Scientist in the Department of Technology Management, SINTEF Digital. He holds a PhD in economic geography from the Norwegian University of Science and Technology. His research focuses on industrial development and transformation, innovation processes and sustainability transitions, often with attention to both industry dynamics, policy, and market developments. As a geographer he is also interested in how both the conditions and outcomes of transformation processes are interconnected and contingent on place- and region-specific factors. Empirically his research has focused on offshore energy, maritime transport, energy-intensive process industry, manufacturing and aquaculture in Norway and Northern Europe.

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Åsta Dyrnes Nordø

Does the nationality of CO_2 matter? Public perceptions of a Northern European market for CO_2 storage (CCSMARKET)

Åsta Dyrnes Nordø (PhD in Political Science, UiB) is a scholar in political behavior who has a broad expertise on issues related to public opinion and new technologies. She has been a central contributor in several large research projects studying public perceptions of CCS both in Norway and abroad: the recently finalized ACT Digimon project (Digital Monitoring of CO2 storage projects), the RCN-funded project perCCSeptions (Public perceptions of carbon capture and storage) as well as the ACTOM project (Act on Offshore Monitoring). She currently is the project leader of the RCN-funded project CCSMARKET, running from 2021 to 2025, which she will introduce to you in the next couple of minutes.

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February 8– CCS Speed Dating Storage

13:30-16:40

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Nils Opedal

REX-CO_2: Re-using EXisting wells for CO_2 storage operations

Nils Opedal has been working at SINTEF for ten years on various drilling and wells projects. The main interest has been on cement, cementing and cement bonding to wellbore materials. He holds a MSc in Chemical Engineering and a PhD in Surface & Colloid Chemistry from NTNU.

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Elin Skurtveit

Learnings from a naturally occurring CO_2 laboratory in Utah, US

Elin Skurtveit holds a PhD in structural geology, employed at NGI (Norwegian Geotechnical Institute) and an Associate Professor II at University of Oslo, Dept. of Geosciences. Elin follows up several projects related to CO_2 storage and has a passion for integrated research combining geology, geomechanics and rock physics. She is involved in experimental work and has a broad experience in rock characterization, including fault zones and fractures.

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Anouar Romdhane

Accelerating CSEM technology for efficient and quantitative CO_2 monitoring (EM4CO2)

Anouar Romdhane (EM4CO2 project manager): Research Scientist (Dr. Ing. in geophysics) has 10+ years of experience as a researcher and project manager in geophysics at SINTEF. His research covers CO_2 storage, geophysical modelling and inversion, time lapse monitoring, rock physics inversion, and machine learning.

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Maximilian Leinenbach

SafeGuard: New technology for long-term monitoring and risk mitigation of CO_2 storage sites

Maximilian Leinenbach is the Director of Technology at Fishbones AS, where he leads the Engineering department. He has over 10 years of experience in product development for the O&G and automotive industries. His current work focuses on research and innovation to drive existing and new Fishbones technologies into a commercial phase. He holds a degree in mechanical engineering from the Technische Hochschule Rosenheim and a degree in computational engineering from the Berliner Hochschule für Technik.

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Guttorm Alendal

ACTOM, Act on offshore monitoring

Guttorm Alendal is a professor in applied and computational mathematics at the University of Bergen. His main research focus is on ocean processes, with special focus on transport of tracers and their potential impact on the marine environment, and dynamical systems and epidemiological modelling. Most relevant here is his research activities related to potential environmental impact and monitoring aspects for offshore CO_2 storage projects. He has been involved in several national and international projects on the theme, both as coordinator and participant. From 2008 to 2013 he was member of the CLIMIT program committee. He is coordinator of the ACT funded ACTOM project that is in its final month of operation.

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Julian Leander Löw

Real-Time Monitoring for Safe Geological CO_2 Storage

MSc in Applied Geoscience from RWTH Aachen University, Germany, BSc in Geoscience from University of Potsdam, Germany

Works with Geomec since 2019, first as technical advisor, since Jan 2022 as COO. Responsible for technical work duties, running operations, as well as sales and marketing.

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Tore Lie Sirevaag

Automating the evaluation of the well barrier

My name is Tore Sirevaag, and I took my Ph.D. in applied ultrasound at NTNU Norway. The doctoral thesis was part of a larger project where we performed and analyzed ultrasonic measurements to evaluate the sealing behind the casings (steel pipes) in oil and gas wells, however, the research is just as necessary in storage of CO_2. The last 4 years I have been working in the technology company Equanostic, where I have, among other tasks, been managing the CLIMIT project 'Ultrasound to verify that the cementation of the annulus is impermeable.

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Arvid Nøttveit

ACT2 DIGIMON

Arvid Nøttveit is a strategic advisor for energy at the Norwegian Research Centre (NORCE) based in Bergen and was CEO of its predecessor Christian Michelsen Research for 14 years. He has extensive experience from research in the oil and gas industry, and from managing practical work in drilling, exploration, field development and operations on the Norwegian continental shelf and around the world. Nøttveit holds a PhD in geosciences from the University of Bergen.

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Tor Harald Sandve

HPC-simulation software for the gigatonne storage challenge. OPM-Flow

Tor Harald Sandve is a senior researcher in NORCE (Norwegian Research Centre). He holds a PhD in applied mathematics and is one of the key developers of the OPM Flow reservoir simulator where he recently contributed a dedicated CO_2 storage module.

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Lars Grande

AddStorage-Analogue-site data-driven study for characterization and monitoring of deep CO_2 storage sites

25 Year experience from geomechanical assessments for oil and gas production and for CO_2 storage in Norway and Internationally. Main work area is geomechanichal characterization of petroleum and CO_2 sites by integration of geology data, petrophysical logs and geomechanical laboratory data and ground stresses. Has worked with design and analysis of geomechanical and rockphysics laboratory experiments in 25 years. Performing analysis and providing input for advanced numerical analysis for a range of applications, i.e. reservoir compaction, fracturing, fault reactivation and well integrity. Involved in CO_2 research from NGI's early start in 2008.

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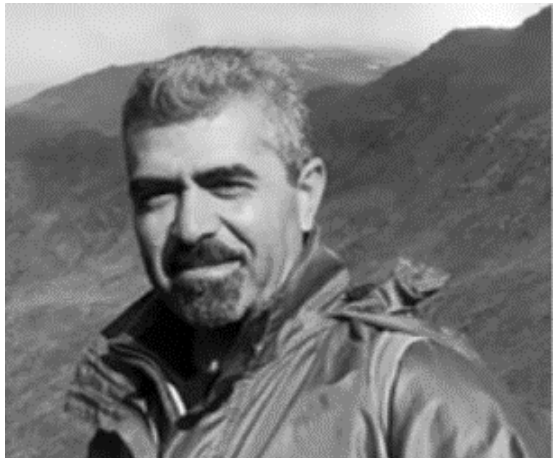
Bahman Bohloli



Value of ground deformation for monitoring CO_2 storage sites

Bahman Bohloli is a Geomechanics Specialist with 20 years of experience on energy and CCS projects from both academia and industry. He is currently working for Norwegian Geotechnical Institute in Oslo with focus on underground storage of CO_2 and hydrogen. Bahman is coordinator of SENSE (Assuring integrity of CO_2 storage sites with focus on surface deformation), an ACT project with 14 partners from 9 countries. He will present some highlights from SENSE project.

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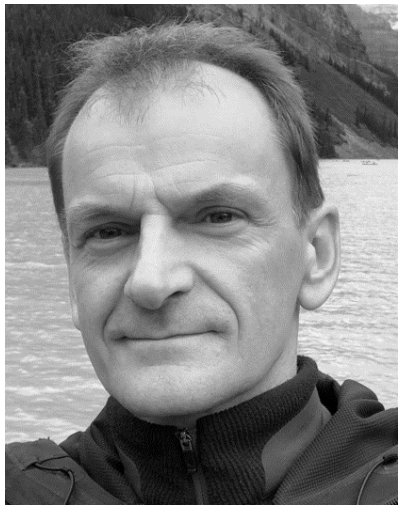
Michael Jordan



Accurate CO_2 monitoring using quantitative joint inversion for large-scale on-land and off-shore storage applications

Michael is a senior research scientist at SINTEF, Norway, mostly working with monitoring of CO_2 storage. He has over 20 years of experience in development and application of methods for imaging and monitoring of the subsurface and combining different data types, e.g., through joint inversion. He has a doctoral degree in Geophysics from the University of Göttingen, Germany.

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Pierre Cerasi

SNOWPACCS – Challenges with post-mortem investigation of well integrity at Mont Terri

Pierre Cerasi is a Senior Scientist at the Formation Physics group at SINTEF. He holds a PhD in Physics from the University of Paris and has 20 years of experience in petroleum-related rock mechanics. Over the last decade, he has focused his interests on geomechanics of carbon storage. He has led many research projects on borehole stability, formation damage, well integrity and geomechanics modelling, specializing on designing laboratory experiments to explore CO_2 effect on mechanical properties of reservoir and caprock.

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Elin Skurtveit

In-situ stress and failure prediction for CO_2 storage sites

Elin Skurtveit holds a PhD in structural geology, employed at NGI (Norwegian Geotechnical Institute) and an Associate Professor II at University of Oslo, Dept. of Geosciences. Elin follows up several projects related to CO_2 storage and has a passion for integrated research combining geology, geomechanics and rock physics. She is involved in experimental work and has a broad experience in rock characterization, including fault zones and fractures.

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February 8 – Key notes

16:40-18:10

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Aage Stangeland

ACT & CETP: How International Collaboration Fosters CCUS Research and Innovation

Aage is coordinating activities within CCS at the Research Council of Norway. The main responsibility is the national program for RD&D within CCS, CLIMIT. He is also following up on international cooperation within CCS.

Aage holds a Dr. Scient within Material Science. He joined the Research Council in 2010. Previous positions include General Electric and the environmental NGO Bellona.

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Mark Ackiewicz

Mission Innovation

Mr. Mark Ackiewicz is the Director for the U.S. Department of Energy Office of Carbon Management Technologies. In this role, Mark is responsible for planning, management, and administration of the Office's RDD&D portfolio. He leads a team of scientists and engineers that are collaborating and working domestically and internationally with industry, national laboratories, and universities on developing advanced and transformational technologies for carbon capture and storage (CCS); hydrogen integrated with carbon management; and carbon dioxide removal (CDR) and conversion.

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Dialogue – What actions are needed to deploy CCS worldwide?

Mark Ackiewicz, DOE

Jan Gabor, Mo Industripark

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Jan Gabor

Educated at BI Norwegian Business School, worked for more than 35 yrs in construction and industry. Leading positions focusing on business development. Currently leading Mo Industrial parks sustainability program, responsible for all area, buildings and infrastructure, existing customers as well as new, large establishments. First CCUS projects started in 2016, CO_2 HUB Nord is the third stage. Participated in Process 21 on CCS as well av attractiveness, currently also a member of the CLIMIT Programme Board.

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Mark Ackiewicz

Mr. Mark Ackiewicz is the Director for the U.S. Department of Energy Office of Carbon Management Technologies. In this role, Mark is responsible for planning, management, and administration of the Office's RDD&D portfolio. He leads a team of scientists and engineers that are collaborating and working domestically and internationally with industry, national laboratories, and universities on developing advanced and transformational technologies for carbon capture and storage (CCS); hydrogen integrated with carbon management; and carbon dioxide removal (CDR) and conversion.

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February 9 – Key notes

08:45-09:30

Torbjørg Klara Fossum

Carbon Capture and Storage (CCS) scale-up - building on Northern Lights and 26 years of CO_2 storage in the North Sea

Torbjørg Klara Fossum (female), graduated with an M.Sc. in Mechanical Engineering from the University of Trondheim and joined Equinor (former Statoil) in 1997. She currently holds the position as Vice President for Global CCS. Through various leadership positions she has gained insight in Equinor's unique capability and experience within Carbon Capture and Storage (CCS). These capabilities are based on decades of technology development, Technology Centre Mongstad (the world's largest test centre for developing CO_2 capture technologies), >25 years of operational experience (CCS projects Sleipner, Snøhvit, InSalah) and the current development of the CO_2 transport and storage projects in the North Sea that are crucial to enable European industries to de-carbonise (Norway's Northern Lights, Smeaheia and Polaris and UK's Northern Endurance Partnership)

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Rikard Kinn

LINCCS; Compact, low OPEX CO_2 capture offshore

26 years' experience from carbon capture & storage, offshore wind and oil & gas industry. Has executed a wide range of tasks and gained a broad commercial and managerial experience and technical knowledge.

Positions include project manager, tender manager, business manager, project control manager, contract advisor, subcontract manager and planning lead, in project phases ranging from studies, FEED, Detail engineering to EPCI.

Facilities include carbon capture and storage, offshore wind, FPSO topside, fixed facility topsides, subsea compression, and concrete substructure.

Other roles include member of the corporate risk committee that evaluates all major tenders, and responsible for Aker Solutions' project execution model for new-build topsides & substructures.

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Thomas Reinertsen

Disrupting blue hydrogen production

CEO of HYDROGEN Mem-Tech since June 2017

22 years experience from different management positions, incl. building and managing fabrication yards and on-/offshore installation

Several board positions

BSc in Process Engineering from University of Aberdeen

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Jon Christopher Knudsen

Building commerciality for CCUS - the road from Longship to full European deployment

Jon Christopher Knudsen is Chief Commercial Officer (CCO) in Aker Carbon Capture. With nearly 20 years in the oil and energy sector, Knudsen has held several leadership positions in digitalization, customer experience, strategy and HR in the Aker Solutions group. Knudsen joined Aker Solutions after many years in the international consulting company Accenture, where he focused on technology solutions for business insights in oil and energy companies. He is a business economist graduating from the Norwegian School of Economics (NHH) in Norway and the College of William & Mary, Virginia (US).

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February 9 – Technical session Capture&Business models

10:00-11:00

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Bjørn Hølaas

CCS solutions for WtE plants (KAN – Klimakur for avfallsforbrenning i Norge)

Current position.

VP/director CCS

Previous role; 24 years within energy utilities.

Trondheim Energy; EVP retail and trading, EVP staff functions, CEO.

Statkraft; SVP district heating, VP leadership support and shared services

Education:

Batchelor communication and risk management.

MBA strategic management

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Harald Malerød-Fjeld

Protonic membrane reformer technology for conversion of natural gas to hydrogen and CO_2

Harald Malerød-Fjeld works as a senior scientist in CoorsTek Membrane Sciences. He has a PhD in materials science and has specialized in high temperature electrochemistry and thermodynamics. In CoorsTek, he works with testing and analysis of multi-cell electrochemical reactors at high temperature and high pressure. He has been involved in the development of the protonic membrane reformer technology starting out as a single cell laboratory concept and now demonstrating hydrogen production from multi-stacks pilots. The outcome of this development has been published in Nature and Science branded journals, resulted in patents, and helped the technology to climb several steps on the technology readiness ladder.

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Mario Ditaranto

Enabling carbon capture with oxy-fuel combustion technology for the Waste-to-Energy sector (CAPEWASTE)

Mario Ditaranto is Chief Scientist at SINTEF Energi and has more than 20 years of professional experience in the field of combustion science and technologies covering combustion systems for power and industrial processes. He currently leads research projects in oxy-fuel combustion for the Waste-to-Energy and Cement sectors, and in the use of hydrogen and ammonia for gas turbines and furnaces.

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Luca Ansaloni

Membranes with Aligned nanostructures for CO_2 separation

Luca Ansaloni is a research scientist in the Sustainable Energy department of SINTEF Industry (part of SINTEF AS). He obtained his PhD in 2014 from the University of Bologna with a thesis on transport properties of gases in membranes for CO_2 capture. After the PhD, he served as postdoc in the Chemical Engineering department at NTNU (2015 – 2018) and joined SINTEF Industry in 2018. His main research interests are related to technologies to enable CCUS and H_2 deployment, with focus on membrane materials development and characterization. He has participated in several national and international project, including the development of membranes and membrane contactors for CO_2 capture as well as membrane reactors for H_2 productions. He has authored more than 45 publications between peer-reviewed articles and book chapters. He is also co-inventor of 4 different patents.

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February 9 – Technical session Transport&Value chain

10:00-11:00

Ben Alcock

CO_2 EPOC: The effect of CO_2 on polymer materials used in the CO_2 transport network

Ben Alcock is a Senior Researcher at SINTEF Industry, based in the group Polymer and Composite Materials. Ben received his PhD in 2004 from Queen Mary, University of London, UK, in the area of thermoplastic composite materials. He has worked in R&D in both academia in UK and Netherlands, and in industry in UK and Switzerland. Since 2013, Ben has worked at SINTEF on projects focusing on the relationship between polymer properties, processing and material selection for applications in CO_2 transport, oil and gas, consumer products and medical devices.

Ben also teaches materials science at OsloMet University and works as an expert reviewer for the European commission.

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Julian Straus

Energy export and CO_2 infrastructure development – CleanExport

M.Sc. in Chemical and Bioengineering in 2013 from ETH Zurich (awarded with *Willy-Studer Award* for highest GPA, financed through a scholarship of the *Excellence Scholarship and Opportunity Program* of ETH)

Ph.D. in Chemical process control in 2018 from NTNU

Working in SINTEF Energy Research as research scientist since 2018

Key research areas:

- Design of control structures of chemical process with recycles
- Chemical process design for hydrogen production from natural gas reforming with CCS
- Energy system modelling (regional and continental scale) with focus on accurate description of chemical process technologies

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Frank Wettland

Stella Maris CCS – A large scale maritime solution

M.Sc from the Norwegian Technical University (NTNU) 1983. Experience from E&P Company, Engineering, Consulting, Brownfield operations and modifications, New-build FPSO projects. Engaged within CCS from 2019 with the Stella Maris CCS project.

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Bente Helen Leinum

Design and Operation of Carbon Dioxide Pipelines – Key topics to be addressed

Bente has extensive experience within the field of failure analyses, materials technology and troubleshooting, project management and project sponsor role. Experience from general industry, process industry and oil and gas industry, research and development. The activities have been including project management & participation, RBI-analyses, pipeline integrity management (PIM) projects, verification projects, fabrication control, contact with authorities, hands on experience through field inspection, laboratory work and experiments.

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February 9 – Technical session Storage

10:00-11:00

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Jonas Solbakken

How fast can we get CO_2 into geological formations – without getting operational problems?

Jonas Solbakken is a senior researcher in NORCE (Norwegian Research Centre).

He holds a PhD in petroleum technology and has mostly been working on challenges involving fluid flow in porous media, including CO_2 Injectivity and CO_2 for Enhanced Oil Recovery (EOR).

Today, Solbakken is the Center Coordinator for FME HyValue, which is a Norwegian Centre for Environment-friendly Energy Research, that focuses on hydrogen research as part of the future energy sector.

Solbakken is also leading the CLIMIT InjectWell project, with Wintershall Dea (Germany) as financial partner and University of Freiberg as academic partner. The topic of his presentation is about CO_2 Flow Assurance and Injectivity during Geological Carbon Storage Operations.

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Tone Holm-Trudeng

Extended High Resolution (XHR) Seismic for Mapping and Monitoring of CO_2 reservoirs

Tone Holm-Trudeng joined Magseis Fairfield in 2018 where she is currently serving as Director of Renewables. Prior to joining Magseis Fairfield, Tone worked for 10 years in Schlumberger and WesternGeco. Tone started her career at Schlumberger in Stavanger working with seismic reservoir characterization projects. She moved to Abu Dhabi serving as the senior geophysicist and then moved on to a role as the Seismic Reservoir Characterization Business Manager for Middle East, and later Business Lead for Europe & Africa. She holds a MSc in Petroleum Geophysics from Norwegian University of Technology and Science.

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Philip Ringrose

Seismicity monitoring in preparation for large-scale CO_2 storage offshore Norway (HNET)

Philip Ringrose is a specialist in CO_2 storage and reservoir geoscience at the Equinor Research Centre, Trondheim, Norway. He is also Adjunct Professor in CO_2 Storage at the Norwegian University of Science and Technology (NTNU) and a leader in the Centre for Geophysical Forecasting based at NTNU. He has published widely on reservoir geoscience and flow in rock media and has published textbooks on 'Reservoir Model Design' and 'How to Store CO_2 underground.'

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Elin Skurtveit

Improved workflow for fault risk assessment in faulted CO_2 storage sites

Elin Skurtveit holds a PhD in structural geology, employed at NGI (Norwegian Geotechnical Institute) and an Associate Professor II at University of Oslo, Dept. of Geosciences. Elin follows up several projects related to CO_2 storage and has a passion for integrated research combining geology, geomechanics and rock physics. She is involved in experimental work and has a broad experience in rock characterization, including fault zones and fractures.

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February 9 – Technical session Longship Sails on

12:00-14:00

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Kim Hjardar

The Longships

Kim Hjardar (b. 1966) has an MPhil in Nordic Viking and Medieval Culture studies from the University of Oslo and works as a Lector of History at St. Hallvard College. Hjardar has published many books about the Vikings, among them *Vikings at War*, 2011/2017, with Vegard Vike. The book was awarded the Saga Prize in 2012. This major and well-received work has been sold to Denmark, France, the UK, Spain and Sweden. Hjardar has writen nine books about the Viking Age. He has appeared as an expert on several TV productions, among them is Travel Channels Legends of the Lost with Megan Fox, National Geographics Vikings - The Rise and Fall and NRK TV: Boken som reddet Norge.

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Jannicke Gerner Bjerkås

World’s first full-scale CCS on waste incineration under construction!

Jannicke Gerner Bjerkås is the CCS Director in Hafslund Oslo Celsio, leading the carbon capture project at their Waste-to-Energy plant. She has various experience from managing positions. Bjerkås is a former officer with education from the Norwegian Air Force Academy (RNoAF), she also holds a Master of Management from BI Norwegian Business School.

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Vetle Houg

We are doing it – the cut that matters

Has been working within the cement and concrete industry since 2001. Communication Manager in HeidelbergCement Norway 2008-2018, manager of Brilliant Buildings, later Betongfokus 2018-2022

Sustainability manager in Heidelberg Materials Norway since 2022.

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Christian Buck Hansen

Northern Lights: Delivering on our Commitments

Christian Buch Hansen recently joined Northern Lights JV as Communication & Government relations Director. Buch Hansen has solid experience from Communication within both public and private sectors. Before starting in Northern Lights JV, Buch Hansen has spent more than 12 years in the oil and energy sector, lastly as Head of Communication in the Norwegian State owned company Petoro.

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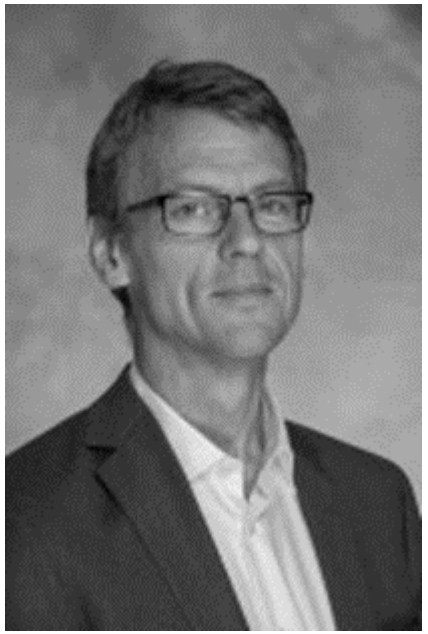
Filip Neele



CCS developments in The Netherlands

Filip Neele is the lead scientist on CO_2 transport and storage on TNO's subsurface team in Utrecht. With a background in geophysics, he has been active in the field of CCS since 2006 and has set up and led projects that cover a wide range of topics in CO_2 transport and storage, such as regional screening studies for CO_2 storage capacity and detailed storage feasibility assessments. He has a keen interest in CCS network development, in the role that ship transport can play and in the evolution of multi-asset storage networks. He is currently working on effective and efficient approaches to monitoring operational CO_2 projects.

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Kari-Lise Rørvik

Rørvik is currently head of secretariat CLIMIT. She holds a PhD in marine geology from the University of Tromsø. Rørvik has worked as a consultant exploration geologist as well as lead geologist mapping potential CO2 storage sites until she joined Gassnova 6 years ago mainly working within CLIMIT. The CLIMIT program provides financial support for development of carbon capture and storage (CCS) technology and consists of two support schemes; CLIMIT R&D and CLIMIT Demo. It is run by the Research Council of Norway and Gassnova respectively where Gassnova has the overall coordination responsibility and heads the program secretariat.

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