

## Workshop program

10:30 – 11:15

### Welcome and setting the scene

Chair: *Asgeir Tomasgard, NTNU*

- Short introduction
- The delicate balance atmosphere, soil and ocean  
by **Dag Olav Hessen, Professor at Center for biochemistry in Anthropocene, Univ. of Oslo**

11:15 – 11:45

### Break for a light lunch

11:45 – 13:30

### Upcoming significant CDR solutions

Session chair: *Asbjørn Torvanger, CICERO*

- Seaweed farming – an ocean CDR that can make a difference  
by **Jorunn Skjermo, Senior Research Scientist, SINTEF Ocean AS**
- BECCS on the journey to climate positive – sustainable feedstock and how near are we success at scale?  
by **Fabian Levihn, Head of R&D, Stockholm Exergi**
- DAC – technologies out there ready for economic upscaling?  
by **Jay Fuhrman, Postdoctoral Researcher, Pacific Northwest National Laboratory (PNNL)**
- Interventions by:
  - **Christine Merk, Deputy Director of research center, Kiel Institute for the World Economy**
  - **Kathrin Weber, Research Manager, SINTEF Energy Research**
  - **Simon Roussanaly, Research Scientist, SINTEF Energy Research**
- Dialogue

13:30 – 13:45

### Short break

13:45 – 15:30

### How to get it into the real world?

Session chair: *Mette Bjørndal, NHH*

- Regulations of Ocean CDR technologies  
by **Catherine Banet, Associate Professor at Scandinavian Institute of Maritime Law, Univ. of Oslo**
- Policy development and regulatory moves  
by **Fabien Ramos, Policy officer, European Commission**
- As seen from a carbon investor (market perspective)  
by **Margaret Mistry, Vice President Carbon Market, Equinor**
- Interventions by:
  - **Brad Ack, Executive Director and Chief Innovation Officer, Ocean Visions**
  - **Asbjørn Torvanger, Senior research fellow, CICERO**
  - **Markus Sebastian Hole, Public Affairs Manager, Fortum Oslo Varme**
  - **Philip Moss, Director Carbon Removal Markets, South Pole**
  - **Mari Bjordal, Advisor Aquaculture, Bellona**
- Dialogue

15:30 – 15:40

### Concluding remarks

By: *Jo-Kristian Røttereng, Enova SF and NCP EU Innovation Fund*

## Workshop frames

<b>Theme:</b>	Negative emissions / carbon dioxide removal (CDR) including ocean scenarios
<b>Background:</b>	<p>It is getting well known that CDR at scale can offset hard to reduce emission streams and remove historic emissions from the atmosphere.</p> <p>However, knowledge and solutions are lagging (?) and what to zoom in on (?)</p>
<b>Purpose:</b>	In this workshop we will seek insight to better understand the drivers, uncertainties, and deployment potential of CDR solutions. To focus, we will initially concentrate on seaweed farming, bio-CCS (BECCS) and direct air capture (DAC).
<b>When</b>	1 April 2022 @10:30 – 15:40 as part of the NTNU Energy Transition Week 2022
<b>Where:</b>	Hybrid – Trondheim, Norway / virtual
<b>For whom:</b>	Academics, industry reps, policy makers and NGOs - by invitation but can also ask to be invited in
<b>Size:</b>	60 participants
<b>Perspective:</b>	European / global focus with interest from Norwegian side
<b>Set-up:</b>	<p>The workshop is designed to encourage discussion among the participants. We have incorporated different roles for participants, but first, and foremost we view all participants as equal contributors for each session. <b>Each session will include introductory comments along with shorter comments from specific participants.</b></p> <p>A chair will help focus on what we can do to inform the process. Finally, we are asking one participant for each session to help synthesize the discussion.</p>

### NB:

This workshop is one of the 2022 FME NTRANS – NCCS – HiEFF use case series on CCS / negative emissions.

## Workshop speakers

### Key notes by:



#### **Dag O. Hessen**

*Professor - Center for biogeochemistry in Anthropocene at University of Oslo*

“I am the leader of Centre for biogeochemistry in the Anthropocene (CBA). CBA is a joint operation between the Department of Biosciences, Geosciences and Chemistry. Our interdisciplinary team studies interactions and feedbacks between climate, carbon cycling and ecosystems in northern latitudes.”

[Link to CV](#)



#### **Jorunn Skjermo**

*Senior Research Scientist at SINTEF Ocean*

Department of Fisheries and New Biomarine Industry

[Link to CV](#)



#### **Fabian Levihn**

*Head of R&D at Stockholm Exergi, Docent (reader) at the Royal Institute of Technology (KTH)*

“I am Head of R&D and part of the management team of the business development department at Stockholm Exergi. Part time I am also a docent (reader) at the department of Industrial Economics and Management at the Royal Institute of Technology (KTH). Stockholm Exergi is the largest energy utility in Stockholm and operates one of the most advanced urban multi energy systems in the world.”



#### **Jay Fuhrman**

*Postdoctoral Researcher at Pacific Northwest National Laboratory*

Jay Fuhrman is a postdoctoral researcher at the Pacific Northwest National Laboratory's Joint Global Change Research Institute. He received his PhD in Civil and Environmental Engineering from the University of Virginia in 2021. Jay's research uses integrated assessment models to understand the transitions required for deep climate mitigation, including the large-scale deployment of carbon dioxide removal technologies, their potential side-effects, and co-benefits.

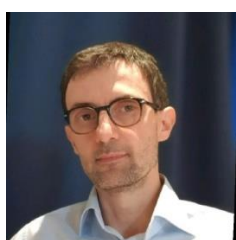


### **Catherine Banet**

*Associate Professor - Scandinavian Institute of Maritime Law, University of Oslo*

Head of Department for Energy and Resource Law

[Link to CV](#)



### **Fabien Ramos**

*Carbon Removals Policy Officer chez European Commission*

Fabien Ramos is working at the Directorate General for Climate Action of the European Commission. He received a PhD degree in Geoscience from the University of Marne-la-Vallée (France) and joined the European Commission in 2007 as scientific officer. Policy officer at DG CLIMA since 2015, he played an active role in the preparation of the long-term strategy for a climate-neutral EU “A Clean Planet for All” and more recently in the 2030 climate target plan for the European Green Deal. Fabien has recently worked on the development of the EU regulatory framework for the certification of carbon removals.



### **Margaret Mistry**

*Vice President Carbon Markets at Equinor*

Has been with Statoil / Equinor since 2000 and held several positions within communication, strategy, business development and since October 2021 undertaken the role as VP for carbon markets. The Carbon Market Team implements Equinor’s corporate carbon offsetting strategy, coordination carbon offsetting across Equinor, and develops Equinor’s position in the voluntary carbon market.

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## **Interventions**

**by:**



### **Christine Merk**

*Deputy Director of the Research Center Global Commons and Climate Policy, Kiel Institute for the World Economy*

Christine Merk researches laypersons' perceptions of carbon dioxide removal methods and investigates the effects on individuals' mitigation efforts. She is currently involved in various projects that look at the acceptability of methods ranging from CCS, BECCS, and seagrass restoration to ocean alkalinity enhancement. She conducts group discussions and comparative survey experiments in Norway, the UK, and Germany.

[Link to CV](#)



### **Kathrin Weber**

*Research Manager, SINTEF Energy Research*

Thermal Energy Department

[Link to CV](#)



### **Simon Roussanaly**

*Research Scientist, SINTEF Energy Research*

Simon Roussanaly has an M.Sc in Chemical Engineering from ENSIC (Nancy, France) and an M.Sc. in Energy Economics Engineering from IFP School (Rueil-Malmaison, France). He is currently a Research Scientist at SINTEF Energy Research and has more than 10 years of experience in CCS, hydrogen, and energy systems. His areas of expertise include techno-economic analysis, value chain analysis, and system optimization. In addition to his position at SINTEF, he has also worked in the Economic studies department at IFPEN (France) and has been a visiting researcher at Carnegie Mellon University in the Engineering and Public Policy department.

He is currently leading the NCS C+ project, funded by the Research Council of Norway, which develop and mature four CDR technologies to increase the pace of change towards green transformation and a net-zero economy.

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## **Brad Ack**

*Executive Director & Chief Innovation Officer, Ocean Visions*

30 years of sustained, creative contributions for a more sustainable and biologically diverse world.

In 2019. “Created the Ocean Climate Trust to focus on the oceans-climate nexus in addressing climate disruption. Launched the Ocean-Climate Alliance ([oceanclimatealliance.org](http://oceanclimatealliance.org)) to support new intellectual and financial investments in ocean/climate restoration, and to source and develop innovations to repair and restore critical components of the ocean system and take advantage of the oceans capacity to capture and store carbon in new ways. Working on technology mapping and development for ocean-based carbon dioxide removal and building an innovation pipeline. Created the Ocean Climate Trust in 2019 to focus on the oceans-climate nexus in addressing climate disruptions”

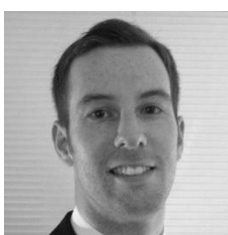


## **Asbjørn Torvanger**

*Senior Research Fellow, CICERO - Center for International Climate and Environmental Research Oslo*

“I am an economist studying climate economics and policy, focusing on energy and climate. Currently my projects include climate finance (choice of finance instruments for climate projects in developing countries), governance of biomass energy combined with carbon capture and storage, and design of climate policy after the Paris Agreement.”

[Link to projects and publications](#)



## **Markus Sebastian Hole**

*Public Affairs Manager, Fortum Oslo*

His current role is about:

- Promoting Fortum Oslo Varme's Carbon Capture and Storage (CCS) Project and liaising with EU and Norwegian stakeholders
- Member of the Zero Emission Platform's temporary working group on CCUS Policy & Funding
- Part of Fortum's policy team for Carbon Removals (CDR)
- Following energy, climate and recycling policy developments in Norway and the EU
- Supporting Fortum's different business areas



## **Philip Moss**

*Director Carbon Removal Markets, South Pole*

Philip Moss is the Director for Carbon Removal Markets at South Pole, a Swiss carbon finance and technical advisory where he leads efforts to launch the first aggregated purchasing pool for offtakes from carbon removals from technological projects with Mitsubishi Corporation - the NextGen CDR Facility.

Philip is a leading authority on SDG investing and blended finance, having established a track record of developing innovative financing approaches to deliver the Sustainable Development Goals (SDGs), as well as building initiatives that promote the mainstream adoption of sustainable finance. While at the World Economic Forum (WEF), Philip pioneered the concept of “blended finance”, establishing a +\$150 billion market and the Convergence platform, as well as leading the Sustainable Development Investment Partnership (SDIP), an alliance of 42 leading governments, development finance institutions and investors to mobilize sustainable private investment in developing and emerging markets.

Prior to joining WEF, Philip gained extensive industry experience in the carbon and cleantech markets as Managing Partner for Mana Ventures, an Abu Dhabi-based cleantech investment advisory firm and as the Carbon Portfolio Manager for Masdar, where he managed the largest CER portfolio in the MENA region. Philip has also held senior positions with 17 Asset Management, CantorCO2e, the UNEP Finance Initiative and HSBC Household.

Philip holds an MBA from the Tuck School of Business at Dartmouth, and BSc degrees in both Economics and Statistics from North Carolina State University.



## **Mari Bjordal**

*Advisor Aquaculture, Bellona*

Mari has a master's degree in marine biology from the University of Bergen. She has taught at the Department of Life Sciences at the University of Bergen, where she also has experience from various project work. Mari has solid field and lab experience from New Zealand, Shetland, the Faroe Islands, Svalbard and Norway and she has a strong commitment to finding new, sustainable ways to use the sea. In Bellona, she is part of the aquaculture team, where she works with Ocean Forest and with developing the opportunities for algae cultivation.