

## Future Business Models for CCS

21 March 2018 | Oslo, Norway

### AGENDA

<b>13:30-14:00</b>	Registration
<b>14:00 – 14:15</b>	Welcome address by <b>Jeff Erikson</b> , General Manager, Client Engagement, Global CCS Institute
<b>14:15 – 15:30</b>	<p><b>CCS around the world</b></p> <p>Speakers:</p> <ul style="list-style-type: none"> <li>• <b>Tomakomai CCS Demonstration Project of Japan, CO<sub>2</sub> Injection in Progress</b> - Yoshihiro Sawada, General Manager, International Relations Department, Japan CCS Co. Ltd.</li> <li>• <b>Business Models for CCS: exploring the key value drivers</b> - Karen Westley, Global CO<sub>2</sub> Implementation Manager for Shell and Business Opportunity Manager for CCS, Shell</li> <li>• <b>CO<sub>2</sub> for Enhanced oil recovery and Storage. A future for the North Sea Basin?</b> - Eva Halland, Project Director, Norwegian Petroleum Directorate</li> </ul>
<b>15:30 – 16:00</b>	Break
<b>16:00 – 17:15</b>	<p><b>The future of hydrogen and CCS</b></p> <p>Moderator: Mette Vågnes Eriksen, Group Sustainability Manager, DNV GL</p> <p>Speakers:</p> <ul style="list-style-type: none"> <li>• <b>Hydrogen from natural gas – much more than an enabler for CCS</b> – Mona J. Mølnevik, Research Director - Gas technology, SINTEF Energy Research &amp; Centre Director Norwegian CCS Research Centre, NCCS</li> <li>• <b>Large Scale Hydrogen Solutions</b> - Lamberto Eldering, Business Developer for Low Carbon Solutions, Statoil ASA</li> <li>• <b>Ervia Cork CCS Project, with H<sub>2</sub> Opportunity</b> - Brian Murphy, European Affairs Manager, Ervia</li> </ul>

17:15-17:35	<ul style="list-style-type: none"> <li>• <b>The value of Norway's CCS project</b> - Trude Sundset, CEO, Gassnova</li> </ul>
17:35-17:50	<p><b>CCS and the Paris Agreement</b> – Atle Hamar, Secretary of State, Climate and Environment Department, Norway</p> <p>Closing address by <b>Ingvild Ombudstvedt</b>, Senior Client Engagement Lead, Client Engagement team, Global CCS Institute</p>
17:50 – 19:30	<p>Cocktail Reception</p> <p>Address by <b>Minister Terje Søviknes</b>, Minister of Petroleum and Energy, Norway</p>

## SPEAKERS



### **Jeff Erikson, General Manager – Client Engagement, Global CCS Institute**

Jeff Erikson joined the Institute in January 2016 as General Manager, Americas and was appointed General Manager, Client Engagement in August 2017. In his current role he has global responsibility for growing the Institute's membership base, and ensuring existing Members are receiving high value. Prior to joining the Institute, Jeff was Director of Global Projects at the Carbon War Room, an international non-governmental organisation and think tank working on issues regarding market-based solutions to climate change. Jeff served as Senior Vice President at SustainAbility, a global think tank and strategic advisory firm. He spent 14 years at Mobil Oil and ExxonMobil Corporation, where he was responsible for projects and programs in multiple engineering specialties and across a broad range of environmental, health and safety issues. Jeff holds a Bachelor of Science in civil engineering from Bucknell University and is a professional engineer.



**Lamberto Eldering, Business Developer for Low Carbon Solutions, Statoil ASA.**

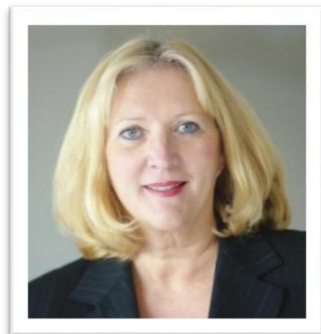
Lamberto Eldering is Business Developer for Low Carbon Solutions at Statoil ASA. He has worked with CCS since 2009 primarily on business development and regulatory affairs. He spent three years in Belgium as an account manager for natural gas value chains and has ten years' experience in industrial energy systems in the Netherlands. He holds a Msc. in chemical engineering from State University of Groningen.

Lamberto Eldering is a co-chair of the Network Policy and Economics of the European Zero Emissions Platform and co-chair of the Regulation and Policy Working Group of the Carbon Capture and Storage Association.



**Mette Vågnes Eriksen, Group Sustainability Manager of DNV GL and Director of the Programme Board of CLIMIT**

Mette Vågnes Eriksen is the Group Sustainability Manager of DNV GL and Director of the Programme Board of CLIMIT. She is an Economist on the edge of technology and sustainability, specializing in the energy and industrial sectors. Eriksen works across global markets with private and public partners within clean technology management, communications and corporate governance. She is optimistic about how the hydrogen economy can enable needed removal of carbon. Eriksen holds a M. Economics from the University of Oslo and the Global Leadership Program from INSEAD.



**Eva Halland, Project Director, Norwegian Petroleum Directorate**

Eva Halland has held various positions within the Norwegian Petroleum Directorate (NPD), and has been a member of the management team for 17 years. Her responsibilities has been from petroleum exploration, field development, field production, regulations and HSE. Her present position is as Project Director for the Norwegian CO<sub>2</sub> Storage Atlas and CO<sub>2</sub> storage projects in Norway and for FORCE, a co-operating forum for improved oil and gas recovery and improved exploration between 43 oil companies and authorities in Norway.

She is vice chair of the Climit board, member of the North Sea Basin Task Force and member of the bilateral CCS co-operation between Norway and USA. She is the leader of the Norwegian "CO<sub>2</sub> Storage Forum". She was the Norwegian project leader for the UK-Norway ministerial CCS project "One North Sea". She was appointed member of the selection panel and project advisor for the appraisal of UK CO<sub>2</sub> storage sites. Eva is a member of the South African Pilot CO<sub>2</sub> Storage Project International Advisory Committee and a board member of NORSAR. She is educated geologist from the University of Bergen, Norway.



**Atle Hamar, Secretary of State, Climate and Environment Department, Norway**

Mr. Atle Hamar is a Norwegian public official and politician from the Liberal party (V). Since January 2018, he serves as Secretary of State of the Climate and Environment Department for Minister Ola Elvestuen. Hamar is from Vassenden in Jølster. From 1987-1990, he was the political secretary in the Liberal party. He was the leader of the Liberal party's youth organisation from 1988-1990, political adviser in the Ministry of Transport and Communications from 1997-1999, political adviser in the Ministry of Justice and Public Security in 1999 and State Secretary in the same department in 1999-2000. Since 2000, Atle Hamar is also the Director of the Norwegian Gaming and Foundation Authority.



**Mona J. MølInvik, Research Director Gas technology, SINTEF Energy Research, Centre Director Norwegian CCS Research Centre, NCCS**

Dr. Mona J. MølInvik has a PhD within Mechanical Engineering from NTNU and became Research Director for Gas technology in SINTEF Energy Research in 2011 from a position as chief scientist. She has been with SINTEF since 1997. MølInvik has been active in CCS research since early 2000. She was central in developing, leading and expanding the centre of excellence, FME BIGCCS - *International CCS Research Centre* (2009-2016) to becoming one of the largest CCS R&D efforts worldwide. Further, she has been involved in developing several EU-projects. MølInvik has been central contributor to development of strategies for CCS, and she was the first leader of the *CO<sub>2</sub> transport* initiative of EERA JP *Carbon Capture and Storage*. MølInvik is the director of the newly started Centre of Excellence FME NCCS - *Norwegian CCS Research Centre*.



**Brian Murphy, European Affairs Manager, Ervia**

Brian Murphy is the European Affairs Manager within Ervia. His role focusses on water and gas activities from a European policy, compliance and funding perspective. Ervia is a state owned multi-utility company, the parent company of Gas Networks Ireland (Irish TSO) and of Irish Water (national water and waste water company). Promoting the long-term role that gas, and the gas network, can play in achieving the least cost pathway for Ireland to meet 2050 CO<sub>2</sub> reduction targets is a key activity. In this regard, CCS is a significant area of focus, both from a funding and policy perspective. Irish Water is a relatively new company established in 2014. The key areas of focus relate to monitoring environmental legislation and determining the compliance obligations on Ireland and Irish Water.

Brian has been with Ervia for 10 years, predominantly working within Gas Networks Ireland, prior to commencing his current role with Ervia just over a year ago. Prior to that Brian spent three years with Hewlett Packard Financial Services and six years with GE Capital.



**Ingvild Ombudstvedt, Senior Client Engagement Lead, Client Engagement team, Global CCS Institute**

Ingvild has a background in business administration and law from Norway and her expertise is CCS and petroleum law, both in Norway and internationally. Ingvild has extensive experience providing legal advice and assessments, developing regulatory framework and assisting in contract negotiations, public procurement and mergers and acquisitions.

Since 2013, she has been involved in the ISO project “ISO TC265 – Carbon Dioxide capture, transport and storage”, where the objective is to negotiate and produce international standards for CCS and CO<sub>2</sub>-EOR. She is further an active member of BASRECCS, Baltic Sea Regional Expert CCS network, an initiative which is currently led by her in collaboration with representatives from Sweden and Finland

She has previously worked for Arntzen de Besche law firm in Oslo (2011-2016) and in 2016 she held the position as Senior Advisor Policy and Regulatory for the Institute in Brussels. Now, Ingvild is back in Oslo, and is currently accountable for managing the Institute members and clients in the Nordic and Baltic regions. Ingvild is a certified Norwegian lawyer and masters both English and Norwegian.



**Yoshihiro Sawada, Corporate Adviser and General Manager of International Relations Dept., Japan CCS Ltd**

Joining Japan CCS in 2010, Mr. Yoshihiro Sawada has served as Executive Managing Director and President of the Plant Division between 2015 and 2017 and has served as Corporate Adviser and General Manager of International Relations Dept. since 2017. Between 2004 and 2009, he was with Japan Continental Shelf Survey Corp., with the mission to extend the outer limits of the continental shelf of Japan, serving as president between 2007 and 2009. Prior to this, he was involved in research, engineering and

construction of offshore structures and pipelines at Nippon Steel Corp., which he joined in 1977. Mr. Sawada holds a M.S. (Civil Engineering), from the University of New York and University of Tokyo, and is a certified Professional Engineer of Japan.



### **Minister Terje Søviknes, Minister of Petroleum and Energy for Norway**

Mr. Terje Søviknes is the Minister of Petroleum and Energy for Norway. The Minister of Petroleum and Energy's responsibility is to ensure high value creation through efficient and environment-friendly management of Norway's energy resources. Mr. Terje Søviknes was mayor of Os municipality in Hordaland County from 1999 to 2016. He has held several positions in Hordaland Progressive Party, has been second vice chair of the Progressive Party, member of the Progress Party Program Committee and is currently member of the Progress Party Steering Committee. Mr. Søviknes, born in 1969, is an aqua engineer of education. He has also studied economics at the Norwegian School of Economics (NHH).



### **Trude Sundset, CEO, Gassnova**

Trude Sundset is CEO of Gassnova – the Norwegian state enterprise for CCS. Sundset has broad experience from international organizational work as a board member of organizations such as IEA GHG, CSLF and ZEP as well as leading positions within the area of energy, environment and climate issues in the oil and gas industry. In Statoil ASA Sundset held positions as: Head of Environment and Climate International and Vice President Environment and Climate Corporate HSE. Trude Sundset has a Master of Science from the Norwegian Institute of Technology (now the Norwegian University of Science and Technology) in Trondheim.

Her broad-based industrial experience and extensive career as a researcher within climate and environmental issues related to the oil and gas sector, have given her an unique insight in green industry development and technological solutions to mitigate climate change.



### **Karen Westley, Global CO<sub>2</sub> Implementation Manager & Business Opportunity Manager for CCS, Shell**

Karen Westley is Global CO<sub>2</sub> Implementation Manager for Shell and Business Opportunity Manager for CCS. She has a BS in Human Biology from Stanford University and an MSc from Yale University in Tropical Ecology. She spent six years working for a large international humanitarian organization: CARE International. She carried out poverty assessments and designed humanitarian response and poverty alleviation programmes in over a dozen counties, including Kosovo, Zimbabwe, Togo, Ghana, Nepal and Bangladesh. She then joined the Shell Foundation in 2001, as part of the start up team, designing and implementing the Foundation's strategy and managing energy and poverty programmes. She joined the Social Performance Management Unit in Shell International in 2005.

In the Social Performance team, Karen was the focal point for the Exploration and Production Business and worked on social impact assessment, community engagement and social investment, developing policies, carrying out social performance reviews and working directly with operations to improve their social performance. She then held the Social Performance Manager and Head of Social Investment roles in Shell, covering all businesses and locations. In 2013 she took on a new challenge in the commercial part of Shell - setting up a team and capability to manage the non-technical risks and opportunities associated with Shell's global gas business including developing the CO<sub>2</sub> policy and performance standards for the Integrated Gas business. Then she went on to lead a team in the development of innovative value propositions across the gas value chain as Vice-President for Business Innovation for Shell's Integrated Gas business. She lives in Kuala Lumpur with her two daughters.