

# Open Forum 2017: Driving CCS towards implementation

----- S.Servolo Island, Venice -----



## Monday, 8 May - The role of CCS in national mitigation strategies



<b>Keynote Talk – Setting the scene</b> Chair: Ton Wildenborg, CO <sub>2</sub> GeoNet-TNO & Aage Stangeland, Research Council of Norway	
09:15	<b>After 20 years: can CCS reach its potential ?</b> Niels Berghout, IEA Energy Analyst - CCS Unit, France
<b>Session 1: Meeting the COP targets - worldwide engagement</b> International perspectives on the impact of the Conference of the Parties Chair: Isabelle Czernichowski, CO <sub>2</sub> GeoNet-BRGM & Manfred Treber, Germanwatch	
10:45	<b>The role of CCS in delivering the Paris Agreement</b> John Scowcroft, Global CCS Institute, Executive Adviser Europe
11:05	<b>Summary and status of major CCS research, development and demonstration projects in the United States</b> Thomas Sarkus, NETL US-DOE, USA
11:25	<b>Engagement in Africa</b> Joseph Essandoh-Yeddu, Energy Commission, Ghana
11:45	<b>European industries, reconciling employment and Climate Action</b> Keith Whiriskey, Climate Technologies, Bellona Foundation

## Session 2: Decarbonising industry: the vital role of CCS

Integrating CCS into the industrial sector

Chair: Ceri Vincent, CO<sub>2</sub>GeoNet-BGS & John Scowcroft, GCCSI

### 13:45 **Tomakomai CCS Demonstration Project**

Yoshihiro Sawada, Japan CCS

### 14:05 **European Commission initiatives on CCUS**

Vassilios Kougionas, DG Research & Innovation, European Commission

### 14:25 **Needs in research and development for CO<sub>2</sub> usage and valorization**

Gabriel Marquette, CNRS, France

## Session 3: New opportunities and synergies for CCS

CO<sub>2</sub> Utilization and Integrating CCS with Energy Technologies

Chair: Conny Schmidt-Hattenberger, CO<sub>2</sub>GeoNet-GFZ & Thomas Sarkus, NETL US-DOE

### 15:45 **A new paradigm for CCS – carbon utilization for subsurface energy resource management**

Srikanta Mishra, Battelle, USA

### 16:05 **Making CO<sub>2</sub> sequestration affordable by coupling it with geothermal energy extraction**

Martin Saar, CO<sub>2</sub>GeoNet-ETH Zurich, Switzerland

### 16:25 **Near term deployment opportunities for Bio-Energy with CCS (BECCS) to meet Paris Agreement mitigation targets**

Henrik Karlsson, Biorecro, Sweden

### 16:45 **CO<sub>2</sub> utilization in the industry : overview, prospects and Recommendations**

Valérie Czop, Club CO<sub>2</sub>, France

## Tuesday, 9 May - Accelerating implementation of CCS

Session 4: Lessons learned for future applications	
Building on practical experience (Test Bed - Pilot - Demo scales)	
Chair: Roman Berenblyum, CO <sub>2</sub> GeoNet-IRIS & Kari-Lise Rørvik, Gassnova	
08:35	<b>Quest: industrial CCS in action</b> Owain Tucker, Global CCS Deployment Shell, UK
08:55	<b>The Otway stage 3 project – low Impact, fit for purpose monitoring &amp; verification</b> Max Watson, CO <sub>2</sub> CRC, Australia
09:15	<b>Current CCS research and development activities and major demonstration projects in Japan</b> Ziqiu Xue, RITE Kyoto, Japan
09:35	<b>Small scale field test demonstrating CO<sub>2</sub> geologic storage in Arbuckle saline aquifer and CO<sub>2</sub>-EOR at Wellington field in Southern Kansas</b> Evgeny Holubnyak, Kansas Geological Survey, USA
Session 4: Continued	
Chair: Niels Poulsen, CO <sub>2</sub> GeoNet-GEUS & Vit Hladik, CO <sub>2</sub> GeoNet-Czech Geological Survey	
10:45	<b>The Ketzin pilot site – post-injection and abandonment phase</b> Conny Schmidt-Hattenberger, CO <sub>2</sub> GeoNet-GFZ, Germany
11:05	<b>Hontomín technology development plant - from characterization to injection</b> José Carlos de Dios, CO <sub>2</sub> GeoNet-CIUDEN, Spain
11:25	<b>Sulcis Fault Lab: preparation for drilling phase</b> Sabina Bigi, CO <sub>2</sub> GeoNet-La Sapienza, Italy
11:45	<b>Assessing monitoring technologies at the UK GeoEnergy Test Bed</b> Ceri Vincent, CO <sub>2</sub> GeoNet-BGS, UK



Wednesday, 10 May

<p><b>Parallel Workshop I – Fit-for-purpose solutions for CCS</b>                  Side event of the CO<sub>2</sub>GeoNet Open Forum, co-organized by IRIS and Gassnova                  Chairs: Aage Stangeland, Research Council of Norway &amp; Kari-Lise Rørvik, Gassnova</p>			
09:00	<p><b>Welcome and introduction</b>                  Roman Berenblyum, IRIS, Norway</p>		
09:10	<p><b>Screening of potential sites on the Norwegian continental shelf</b>                  Kari-Lise Rørvik, Gassnova, Norway</p>		
09:30	<p><b>Study of the BECCS potential in the Nordic countries</b>                  Timur Delahaye, BioRecro, Sweden</p>		
09:50	<p><b>Drivers for CCS and industry – demand for low carbon products</b>                  Sarah Tennison, Tees Valley Combined Authority, UK</p>		
10:40	<p><b>CO<sub>2</sub>-DISSOLVED: an innovative CCS approach fitted to small industrial emitters</b>                  Christophe Kervevan, BRGM, France</p>		
11:00	<table border="1"> <tr> <td>Break-out group I: <b>does BECCS need large-scale CO<sub>2</sub> storage ?</b></td> <td>Break-out group II: <b>Can Low Carbon Products and Involvement of Small Emitters Influence CCS Acceleration ?</b></td> </tr> </table>	Break-out group I: <b>does BECCS need large-scale CO<sub>2</sub> storage ?</b>	Break-out group II: <b>Can Low Carbon Products and Involvement of Small Emitters Influence CCS Acceleration ?</b>
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<p><b>Parallel Workshop II – Bringing CCS into new regions - developing countries</b>                  Side event of the CO<sub>2</sub>GeoNet Open Forum, co-organized by BGS and GEUS                  Chairs: Ceri Vincent, BGS &amp; Niels Poulsen, GEUS</p>			
09:00	<p><b>Welcome and introduction</b>                  Ceri Vincent, BGS, UK</p>		
09:10	<p><b>Climate Technology Centre &amp; Network (CTCN) - implementing CCS in Africa</b>                  Joseph Essandoh-Yeddu, Energy Commission, Ghana</p>		
09:30	<p><b>CCS in Nigeria: the journey so far</b>                  Felicia Mogo, Nigerian Maritime Administration and Safety Agency, Nigeria</p>		
09:50	<p><b>Growing opportunities for CCS in India ?</b>                  Jonathan Pearce, BGS, UK</p>		
10:40	<p><b>CCS opportunities and challenges in the community of Portuguese language countries - overview from Angola, Mozambique, Cap Verde and others</b>                  Júlio Carneiro, University of Evora, Portugal</p>		
11:00	<p><b>New projects in South Africa</b>                  Nigel Hicks, Council of Geosciences, South Africa</p>		



Wednesday, 10 May

**ENOS Open Workshop I - Experience sharing focus groups: framing the topics**

Organised by BRGM for ENOS

All discussions led by Thomas Le Guéan, BRGM

13:30	<b>ENabling Onshore CO<sub>2</sub> Storage in Europe (ENOS)</b> Roman Berenblyum, IRIS, Norway
14:00	<b>Experience sharing focus groups and purpose of the workshop</b> Thomas Le Guéan, BRGM, France
14:15	<b>Break-out group : In what areas could developing European onshore pilots learn from international experience ? Ideas for future topics</b>
15:45	<b>Break-out group : Planning the experience sharing focus groups: what topics should be tackled in priority and how ?</b>

**ENOS Open Workshop II - Research priorities and future pilots**

Organised by BGS and RGNF for ENOS

All discussions led by Jonathan Pearce, BGS & Bruno Saftic, RGNF

09:00	<b>Introduction and aims of the workshop</b> Jonathan Pearce, BGS, UK
09:20	<b>Discussion session: future storage site design and operational feasibility</b> <ul style="list-style-type: none"><li>- Improving storage capacity estimation and management</li><li>- Flexible storage design</li></ul>
09:45	<b>Discussion session: optimising use of strategic reserves</b> <ul style="list-style-type: none"><li>- Pore-space optimisation</li><li>- Maximising storage following EHR</li><li>- Improving controls on injectivity</li></ul>
10:40	<b>Discussion session: assuring site conformance</b> <ul style="list-style-type: none"><li>- Maintaining seal rock integrity</li><li>- Improvements in monitoring technologies to lower cost and increase efficiencies</li><li>- Risk profiles for CO<sub>2</sub> storage and methodologies for site conformance</li><li>- Improved leakage mitigation technologies</li></ul>
13:00	<b>Prioritisation of studies for three future pilot/small-scale projects based on morning discussion sessions to feed into EERA and ENOS deliverables</b> Jonathan Pearce, BGS, UK
13:15	<b>Discussion and finalisation of workshop outcomes – prioritised research topics for three pilot/small-scale projects</b> Bruno Saftic, RGNF, Croatia
13:45	<b>Closing remarks</b> Jonathan Pearce, BGS, UK





8 - 9 May, 2017 / S. Servolo Island, Venice

# DRIVING CCS TOWARDS IMPLEMENTATION

8 May, 8:30-17:30

- Meeting the COP targets: worldwide engagement
- Decarbonising industry: the vital role of CCS
- New opportunities and synergies for CCS

9 May, 8:30-17:30

- Lesson learned for future applications
- Accelerating implementation of CCS



10 - 11 May, 2017 / S. Servolo Island, Venice

# PARALLEL WORKSHOPS

10 May, 09:00-12:00 - Fit-for-purpose solutions for CCS

10 May, 09:00-12:00 - Bringing CCS into new regions - developing countries

10 May, 13:00-14:30 - Young researchers' networking event

10 May, 13:30-17:30 - **ENOS Open Workshop**: Experience Sharing Focus Groups: framing the topics

11 May, 09:00-14:00 - **ENOS Open Workshop**: Research priorities and future pilots

**REGISTER**





# Carbon Capture & Storage Summer School

## *Fifth Annual International Sulcis CCS Summer School*

*June 19-23, 2017 - Carbonia (SW Sardinia – ITALY)*

*ENEA, Sotacarbo Research Centre, UniCa, IEA CCC, CO2GeoNet*

### **Programme**

<i>Monday, June 19<sup>th</sup>, 2017 :</i>	<i>Intro and CCS and global issues</i>
<i>Tuesday, June 20<sup>th</sup>, 2017 :</i>	<i>CO<sub>2</sub> capture approaches and technologies</i>
<i>Wednesday, June 21<sup>st</sup>, 2017:</i>	<i>CO<sub>2</sub> utilization technologies + Workshop CCUS research activities</i>
<i>Thursday, June 22<sup>nd</sup>, 2017:</i>	<i>CO<sub>2</sub> storage</i>
<i>Friday, June 23<sup>rd</sup>, 2017:</i>	<i>CCS: economics and legislation</i>

**More info at: [www.sulciscssummerschool.it](http://www.sulciscssummerschool.it)**