

9th Carbon Dioxide Utilisation Summit

18th - 19th October 2017

Reykjavik, Iceland

Key Topics

- Getting the Industry together to Accelerate Market Deployment of CO₂ Utilisation
- CO₂ Utilisation's Role in a Sustainable Future
- Policy & Regulation
- Life Cycle Assessment of CO₂ Utilisation Projects
- CO₂ Bio Conversion to Renewables
- Electrochemical Reduction of CO₂
- CO₂ to Fuels
- CO₂ to Chemicals & Materials
- Applications for CO₂ Mineralisation

Exclusive Site Visit

Tuesday 17th October, 2017

Carbon Recycling International's
George Olah Renewable Methanol Plant



During the afternoon of Tuesday 17th October, prior to the conference, a limited number of attendees will receive the unique opportunity to visit CRI's George Olah Renewable Methanol Plant in Svartsengi.

Conference Partners



For Commercial & Sponsorship enquires please contact: Alex Chrikishvili
+48 61 646 7027 - alex@acieu.net

For More Info & Registration, please contact: Rohan Baryah
+48 61 646 7022 - rbaryah@acieu.net



Reykjavik, Iceland

Following the success of its previous editions, ACI's 9th Carbon Dioxide Utilisation Summit 2017 will explore the ongoing developments of **turning waste CO₂ into profitable, commercially viable opportunities**. With insights from key industry players from pilot stage to full scale entities, the conference will address **both the technical and commercial aspects of CO₂ Utilisation** in Europe and across the globe.

This edition of the summit will highlight the different projects in place or expected to happen in the CO₂ utilisation, across the various segment (fuels, chemicals, renewables, building...).

The two days event will propose an in-depth look into these various projects, as well as challenges & opportunities but also policy & regulation, framing the industry. The participants will also have the chance to discuss how to keep the industry thriving as a whole and the potential role of CO₂ utilisation in the future.

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- **Policy & Regulation**
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- **CO₂ to Fuels**
- **CO₂ to Chemicals & Materials**
- **Applications for CO₂ Mineralisation**

Opportunities to Meet your Target Audience

For information on available commercial opportunities, please contact:

Alex Chrikishvili +48 61 646 7027 /
alex@acieu.net

Speaking Opportunities

If you would like to be considered as a speaker at the event, for a 30-45mins presentation, please submit an abstract for consideration to:

Lauriane Pardoux +44 20 3141 0632 /
lpardoux@acieu.net

EXCLUSIVE SITE VISIT:

Carbon Recycling International's George Olah Plant

Svartsengi, Iceland - Tuesday 17th October 2017



The George Olah Plant has an annual production capacity of 4000 tons per year of methanol and is fully owned and operated by CRI. It is the first plant in the world to produce renewable liquid fuel from a source of renewable electricity and CO₂. It uses CRI's proprietary Emissions-to-Liquids (ETL) technology and was designed and constructed using a modular subsystem approach.

There is **no extra charge** to attend the site visit, but spaces are limited and allocated on a **first come first served basis**. Please register your attendance for the site visit when booking for the conference.

CRI's George Olah Renewable Methanol Plant Site Visit Itinerary

12:30 Site visit registration at conference hotel - Fosshotel Reykjavik
13:00 Bus departs conference hotel
14:00 Arrival at CRI's George Olah methanol plant / Northern Lights Inn
14:10 Welcoming Address by CRI representative(s)
14:30 First group departs for the tour
15:15 Return of the 1st group & depart of the 2nd group to the tour
16:00 Return of the 2nd group – End of tour & closing remarks
16:30 Bus departs CRI's George Olah methanol plant / Northern Lights Inn
17:30 Arrival at the conference hotel - Fosshotel Reykjavik

Registration is Simple

If you would like to register for this event or wish to find out more information, please contact:

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DAY 1

Wednesday 18th October 2017

08:00 REGISTRATION & COFFEE

09:00 CHAIR'S OPENING REMARKS

09:15 KEYNOTE PRESENTATION Getting the Industry together to Accelerate Market Deployment of CO₂ Utilisation

Updates on the creation of a European
Association dedicated to CO₂ utilisation:

- Scope
- Objectives
- Activities
- Invitation to join membership



Damien Dallemagne
Project Coordinator for the Creation
of a European Association dedicated
to CO₂ Utilisation
GreenWin

SESSION ONE CO₂ Utilisation's Role in a Sustainable Future

10:00 ▪ **The critical role for CO₂ utilisation in avoiding
dangerous climate change**



Dr. Phillip Williamson
Science Coordinator
**Natural Environment
Research Council &
University of East Anglia**

10:30 ▪ **Sustainability Certification of Products deriving
from Carbon Dioxide Capture and Utilization**
- CO₂-Feedstock eligible for sustainability
certification
- Sustainability requirements of products based
on carbon dioxide capture
- Biofuels based on carbon dioxide capture and
utilization for the European transport sector



Dr Norbert Schmitz
Managing Director
ISCC

11:00 Panel Q&A

11:15 MORNING REFRESHMENTS

11:45 PANEL DISCUSSION Policy & Regulation

- Policy scenarios related to CCUS (carbon capture, use and storage)
 - Developing a regulatory framework to support CCU
 - Insights and overview of projects to be funded by the EU
 - How policy in Europe can influence the business scenario for technologies?
 - Updates on CO₂ utilisation for fuel, reflected in the Renewable Energy Directive (n*2)
- Each panellist will briefly introduce themselves - approx. 5mins, before starting the panel Q&A*



Sophie Wilmet
Innovation Manager
**Cefic - European Chemical
Industry Council**



Michiel Stork
Managing Consultant
Ecofys



senior representative
SkyNRG

12:30 CONFERENCE PRESENTATION Life Cycle Assessment of CO₂ Utilisation Projects

- Determining the viability of a CO₂ utilisation project
- How to measure this when aiming for innovation?
- Predicting how the final product will behave



Dr.-Ing André Sternberg
Group Leader Of Energy Systems
Engineering Group
**RWTH Aachen University -
Chair of Technical
Thermodynamics**

13:15 LUNCH

SESSION TWO

CO2 Bio Conversion to Renewables

14:30

- **CO2 recycling by microalgae - A strategy for water and food security**
- Benefits of co-location with CO2 emitters for commercial production of microalgae
- Enhanced production on non-arable land using water- and energy-smart novel cultivation approaches
- Recycling potential for industrial waste waters
- Nitrogen-fixing cyanobacteria as biofertilisers
- Improving agricultural soils



Kirsten Heimann
Director
Essential Aquaculture

14:50

- **Improving performance of CO2 conversion by Microalgae**



Laurent Fourage
R&D Project Manager Phototroph
Total

15:10

- *Presentation title to be announced*



Johan Holstein
Head Of Section Gas Testing & Analysis
DNV GL

15:30

- **Valorisation Carbone Québec – a unique demonstration of CO2 capture and utilisation**



Louis Fradette
Director
CO2 Solutions

15:50

Panel Q&A

16:20

AFTERNOON REFRESHMENTS

For Commercial & Partnership Opportunities,
please contact:

Alex Chrikishvili
+48 61 646 7027
alex@acieu.net

SESSION THREE

Electrochemical Reduction of CO2

16:50

- **CO2 electrolysis as key technology for the production of high value chemicals**
- CO2 to high value chemicals
- Powerful electrolysis technology platform
- Using renewable energy



Dr. Klaas Jan Schouten
Program Manager Renewable
Chemistries
Avantium

17:10

- **Co-electrolysis-based production of high value products**
- Co-electrolysis is an important enabler for CO2 utilization technologies
- Fischer-Tropsch synthesis allows the production of highly valuable products
- Economic feasibility is only possible for highly integrated, efficient processes



Dr. Matthias Jahn
Head of Department - Chemical
Engineering & Electrochemistry
Fraunhofer IKTS

17:30

- **Synthetic fuels from carbon dioxide and renewable electrical energy enabled by compact microchannel reactors**
- Concepts for conversion of carbon dioxide and water into chemical fuels using renewable electrical energy
- Microchannel reactor technology for synthesis gas conversion into liquid fuels
- Process simplification and system integration enabled by compact modular plants



Roland Dittmeyer
Director - Institute of Micro Process
Engineering
**Karlsruhe Institute of
Technology**

17:50

- *Presentation title to be announced*



Jan Vaes
Engineering
Hydrogenics Europe

18:10

Panel Q&A

18:40

CLOSE OF DAY ONE

DAY 2

Thursday 19th October 2017

08:30 REGISTRATION & COFFEE

09:00 CHAIR'S OPENING REMARKS

SESSION FOUR

CO₂ to Fuels

09:05

- **Technical development and commercialization of CO₂ to Methanol**
- Technical and commercial milestones for CO₂ to Methanol
- Economic and policy insights for CCU



Omar Sigurbjornsson
Research Director
Carbon Recycling International

09:25

- **Carbon recycling for innovative fuels and chemicals production**
- Carbon recycling via gas fermentation
- Gas fermentation explained
- Feedstock variability
- Current status commercial projects
- Impact potential



Bjorn Heijstra
Director, Process Validation
LanzaTech

09:45

- **Prospects and sustainability of large-scale CO₂ provision for synthetic jet fuel production**



Dr. Valentin Batteiger
Researcher Future Technologies and Ecology of Aviation
Bauhaus Luftfahrt

10:05

- **Biological methanation in industrial scale – A solution for CO₂ and energy storage**



Doris Hafenbradl, PhD
CTO
Electrochaea

10:25

- **CO₂ to Methanol - commercial reality?**
- Air Liquide's vision and contributions
- Concepts and economics of small-scale methanol
- Feedstock optionality for green methanol
- Options for hydrogen supply



Ulf Herrlett
VP of Innovation & Development
Air Liquide

10:45 Panel Q&A

11:15 MORNING REFRESHMENTS

SESSION FIVE

CO₂ to Chemicals & Materials

11:45

- **CO₂: a novel raw material for plastics – saving fossil resources through innovative**
- CO₂: alternative resource for the important element carbon
- Novel technology makes efficient use of CO₂ possible
- CO₂-containing polyol for flexible polyurethane foam as used in mattresses are on the market – further applications are in development: TPU, rigid foam, molded foam, additives or hoses



Christoph Guertler
Head of the Catalysis Program
Covestro



Annika Stute
Project Lead - New C1 Building Blocks
Covestro

12:05

- **Development of a multidimensional valuation model for the integration of CCU-technologies in cross-industrial systems**
- Analyzing different CO₂-based synthesis routes and determine fitting potentials with local infrastructure to use synergies
- Application of Multi-Criteria-Decision-Analysis for complex cross-industrial composite problems
- Development of a universal valuation model for CCU-technologies and the validation by Carbon2Chem



Sebastian Stiessel
M.Sc.
Fraunhofer UMSICHT

12:25

- **Low cost, high current electrolyzers: the key to economic conversion of CO₂ to renewable fuels**
- Development of New Electrolyzer capabilities that reduce both Capex and Opex will be discussed
- Low Temp PEM Water Electrolyzers at very high current and low PGM loading
- Low Temp AEM Alkaline Water Electrolyzers at relatively high current and no PGMs
- Low Temp AEM CO₂ Electrolyzers with relatively high current



Laura Nereng
Sustainability and Business Development Leader
3M

12:45

▪ Catalyst for Change: Converge® Polyols Market Ready



Peter Shepard
President
Aramco Performance Materials

13:05

Panel Q&A

13:35

LUNCH

14:50

CONFERENCE PRESENTATION

Presentation title to be announced



Richard French
Business Development Director
Econic Technologies

15:20

CONFERENCE PRESENTATION

Presentation title to be announced



senior representative
Reliance

16:05

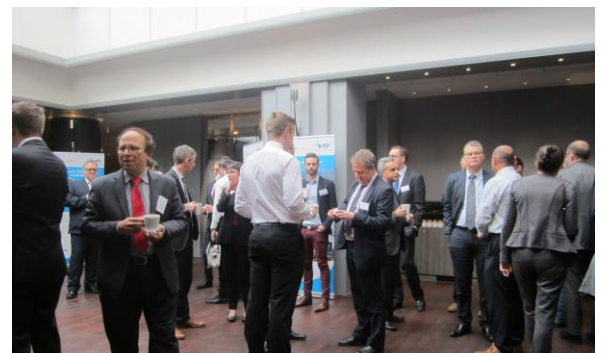
CHAIR'S CLOSING REMARKS

16:15

END OF CONFERENCE & NETWORKING REFRESHMENTS

Previous Attendees Include:

Nalco Energy Services | GreenFire Energy | **Ferus Inc.** | Total Research & Energy | **University of Illinois at Chicago** | Phytionix Corporation | **Algae Fuels** | Blue Planet | **US Department of Energy (DOE)** | SABIC | **Volkswagen Group America** | Skyonic Corporation | **Liquid Light** | 3M | BMBF | E.ON | Sunfire GmbH | **Arcelor Mittal Innovation** | ACP Polska Sp | **Aqualia** | Audi AG | **Avantium** | Total | **Gas Natural Fenosa Engineering** | TECNALIA | **SINTEF Energy Research** | Iberdrola | **Ecofys** | FOM-institute DIFFER | **ENEA Consulting** | VITO | **IPG Industrial Project Group Srl** | International Energy Agency (IEA) | **Climeworks AG** | Bayer Material Science | **NV GL** | Jagiellonian University | **ETOGAS GmbH** | Five Quarter Energy Limited / **Five Quarter Energy** | PTT Exploration & Production PCL / PTTEP | **DIFFER** | Solvay SA | **TNO** | Energibyen, Skive | **KSLA** | VTT | **GreenField Speciality Alcohols Inc** / GreenField | **RAFAKO S.A.** | Bilfinger Bohr- Und Rohrtechnik GmbH | **Linde AG** | Institute For Energy Technology (IFE) | **The Chemical Coal Processing Institute** | Mitsubishi Hitachi Power Systems Europe GmbH / MitsubishiHitachi PowerSystems | **Borealis Polyolefine GmbH** | ON | **University Of Antwerp** | Joule Unlimited | **Yara Int.** | PTT PLC | **Clariant Produkte (Deutschland) GmbH** | Gas Natural Fenosa | **INHA University** | FCC AQUALIA, S.A. | **Antwerp Port Authority** | Jupiter Oxygen Corporation | **OMV** | Bertrandt Ingenieurbuero GmbH | **Chemieanlagenbau Chemnitz GmbH** | GDF Suez | **CCM Research** | BASF New Business GmbH | **Unimore//Protesa** | MARU Teknik AB | **PTT Public Company Ltd** | KH Engineering B.v | **Naviglobe NV** | & Many More...




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18th & 19th
October
2017

Registration is Simple

If you would like to register for this event or wish to find out more information, you can contact **Rohan Baryah** using any of the following methods:

 +48 61 646 7022

 rbaryah@acieu.net

 <http://www.acieurope.net>

 Postal Address:
ACI Europe, 10 Gough Square, London, EC4A 3DE

Registration is Simple

Conference (Includes Access to All Documentation)
18th & 19th October 2017

£1,595
(Excl. VAT)

Documentation Packet Only

£420.00

Please Note.

Members and customers of all supporting organisations are entitled to a discount off their conference package.

For more information please call Rohan on +48 61 646 7022

Documentation Packet Available

We are selling 9th Carbon Dioxide Utilisation Summit papers at just £395 (+£25 P&P). Simply tick the box on the booking form, send it with payment and your copy will be on its way to you after the meeting. This important manual will be a source of invaluable reference for the future.

About ACI

ACI, a UK owned company, has been running successful conferences in the USA since 1999. Headquartered in Chicago with offices all around the States, ACI opened its European head office at the end of 2005 and has expanded rapidly, launching a series of events in key industries including maritime, energy, oil & gas, cosmetics, chemicals & media.

Terms & Conditions

Payment

Payment must be received within five business days of returning the signed contract. After receiving payment a VAT receipt will be issued. If you do not receive a letter outlining details two weeks prior to the event, please contact the Conference Coordinator at ACI Europe Ltd.

Discounts are available for multiple/group bookings. Please call **Rohan Baryah** on +48 61 646 7022 for more information.

Cancellations

Substitutions are welcome up to 24 hours prior to the event. Cancellations must be received in writing no less than 3 weeks prior to the start of the conference; a full credit voucher towards a future ACI conference will be issued. Any cancellation received less than 3 weeks prior to the start of the event shall be deemed to be a breach of this contract by client, and accordingly, no credits will be given. Cancellations must be received in writing by mail or fax three weeks before the conference. Thereafter the full conference fee is payable. If for any reason ACI Europe Ltd decides to amend, cancel or postpone this conference, the conference fee will not be refunded. Furthermore, ACI Europe Ltd will not be responsible for covering airfare, hotel or other costs incurred by registrants. In the event that ACI Europe Ltd cancel or postpone the event, ACI Europe Ltd reserves the right to transfer this booking to another conference to be held in the following twelve months, or to provide a credit of an equivalent amount to another conference within the following twelve months. The construction, validity and performance of this agreement shall be governed in all respects by the laws of England to the exclusive jurisdiction of whose courts the Parties hereby agree to submit.

Accommodation

The cost of accommodation is not included in the event fee. Preferential rates will be arranged with or near the event venue, and all confirmed delegates will be given details of how to book accommodation at this rate in due course.

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