Összefoglalás a Cogiton Group által szervezett CO2 hasznosítási csúcstalálkozóról
Zürich 2018 május 15-17

Az elhangzott előadások bemutatták az Európai CO 2 emisszió csökkentési törekvéseket és a CO2 anyagában való hasznosításának több módszerét. Bemutatásra került egy konkrét példa keretében ,hogy USA-ban milyen magánfinanszírozás működik a CO2 leválasztására és hasznosítására.
Svájci, USA, német, francia, dán és holland kutatások összefoglalói és konkrét megoldásairól is hangzottak el előadások.
A széndioxid hasznosítása mikroorganizmusokkal, enzimekkel, algákkal és növényekkel ,mesterséges fotószintézissel, de kőzetben való lekötéssel is hasznosulhat az ismert szénhidrogén telepek nyomásfokozására való hasznosítás mellett a hidrogénezéssel speciális üzemanyagok és vegyipari alapanyagok is előállíthatók.
A hidrogénezés a külön hidrogén előállítástól a CO2 és a víz együttes elektrolíziséig terjedhet. Az víz elektrolízise során jelenleg a bevitt energia kb. 20 % -a hőenergia is lehet a villamos energia helyett.
A Climateworks által a felállított 6 egységből álló berendezés a levegőből aminos elnyeletéssel és rekuperációval nyeri k (3 egység töltési időre 1 egység rekuperáció jut)i a levegő széndioxidját a 400-500 ppm tartalomból kb . 300 ppm-et. A jelenleg működő berendezés évi 900 tonna széndioxid von ki , és ennek hasznosítása a közelben fekvő üvegházakban hasznosul.
A CO2 bevitele a csepegtető öntözéshez hasonló, de annál vékonyabb vezetékeken történik.
Az üvegházban 700 ppm körüli értékre emelik a levegő széndioxid tartalmát, amivel a hozamokat 20%-kal növelik meg. kb. 9 hektár területre elég a széndioxid.
A jelenlegi termelési költség 500-700 CHF/1 tonna CO2 körül van. A célérték 100 Euró /tonna.
1 tonna CO2 előállításához 1500 kWó áramra és 2500 kWó hőre van szükség.
A gazda 200 CHF-et fizet -
A résztvevőktől kapott további információk.
Hollandiában az üvegházban a CO2 koncentráció 2800 ppm is lehet, az ember által elviselhető határértékhez igazodva. Ott 30 Eurót fizetnek 1 tonna CO2-ért.
A különböző ipari folyamatokból származó CO2 gázokat megtisztítják az alkalmazástól függően.
USA tanulmány szerint a levegőből való CO2 kivonás 1000 USD/tonna.
Nagy Brittaniában 100 GBP a CO2 ára.
Egy előadás alapján:
Egy holland cég olyan 0,25 hektár méretű algatenyésztő egységeket állít elő ahol szennyvíz és széndioxid alapon 20-100 tonna/hektár szárazanyag hozamot érnek elő aminek átvételi ára 10-12 Euró/tonna. Napraforgó esetén a termelés 6 tonna/ha.

Lejegyezte: Kalmár István

CO_2 REUSE SUMMIT

16-17 May 2018, Zurich

Developing carbon dioxide utilization technologies

- Moving towards sustainability with CCU
- LCA & TEA of utilization projects
- Regulatory and policy framework
- CO2 based fuels
- CO2 based chemicals
- CO2 based building materials
- Artificial photosynthesis
- Power to X projects
- Utilization with algae
- Technological advancements
- Process integration
- Commercialization

Site Visit

On 15th May our participants will have a chance to visit the Climeworks world's first commercial plant that captures atmospheric CO2 .
The site visit is free of charge but spaces are limited and booked on first-come, first-served basis. Please contact us on registration@cogitongroup.com to book your space for the tour.

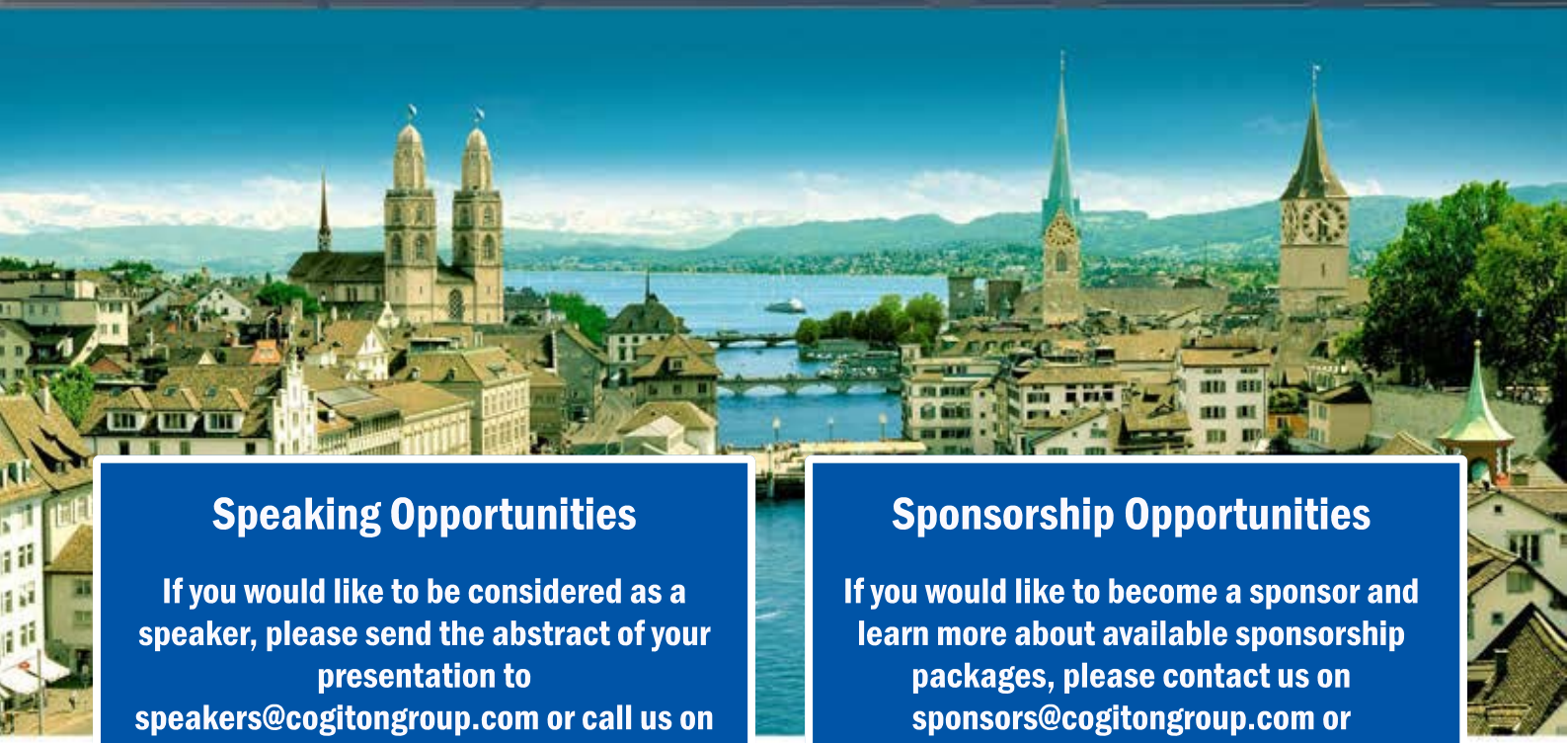
Brought to you by

CLIMEWORKS
Capturing CO_2 from air

Registration and more information : www.reuseco2.com

The world is constantly looking for pathways to sustainable future. One of the biggest issues are increasing CO2 emissions, which are causing the globalwarming. Scientists from around the globe developed several technologies enabling us to turn carbon dioxide into usefull products like fuels, building materials, chemicals or polymers. However CO2 utilization projects still require further research, industry collaboration, funding or policy changes in order to become feasible and well established on the market.

CO2 Reuse Summit, taking place on 16th-17th May 2018 in Zurich, will bring together major stakeholders from the industry to highlight latest delvelopments related to carbon utilization. We will discuss key challenges and opportunities when it comes to technology, economics or regulations. We invite you to join your peers for 2 days of interactive presentations, case studies and networking sessions in order to build a decarbonized society.



Speaking Opportunities

If you would like to be considered as a speaker, please send the abstract of your presentation to speakers@cogitongroup.com or call us on +48 61 250 43 50

Sponsorship Opportunities

If you would like to become a sponsor and learn more about available sponsorship packages, please contact us on sponsors@cogitongroup.com or +48 61 250 43 50

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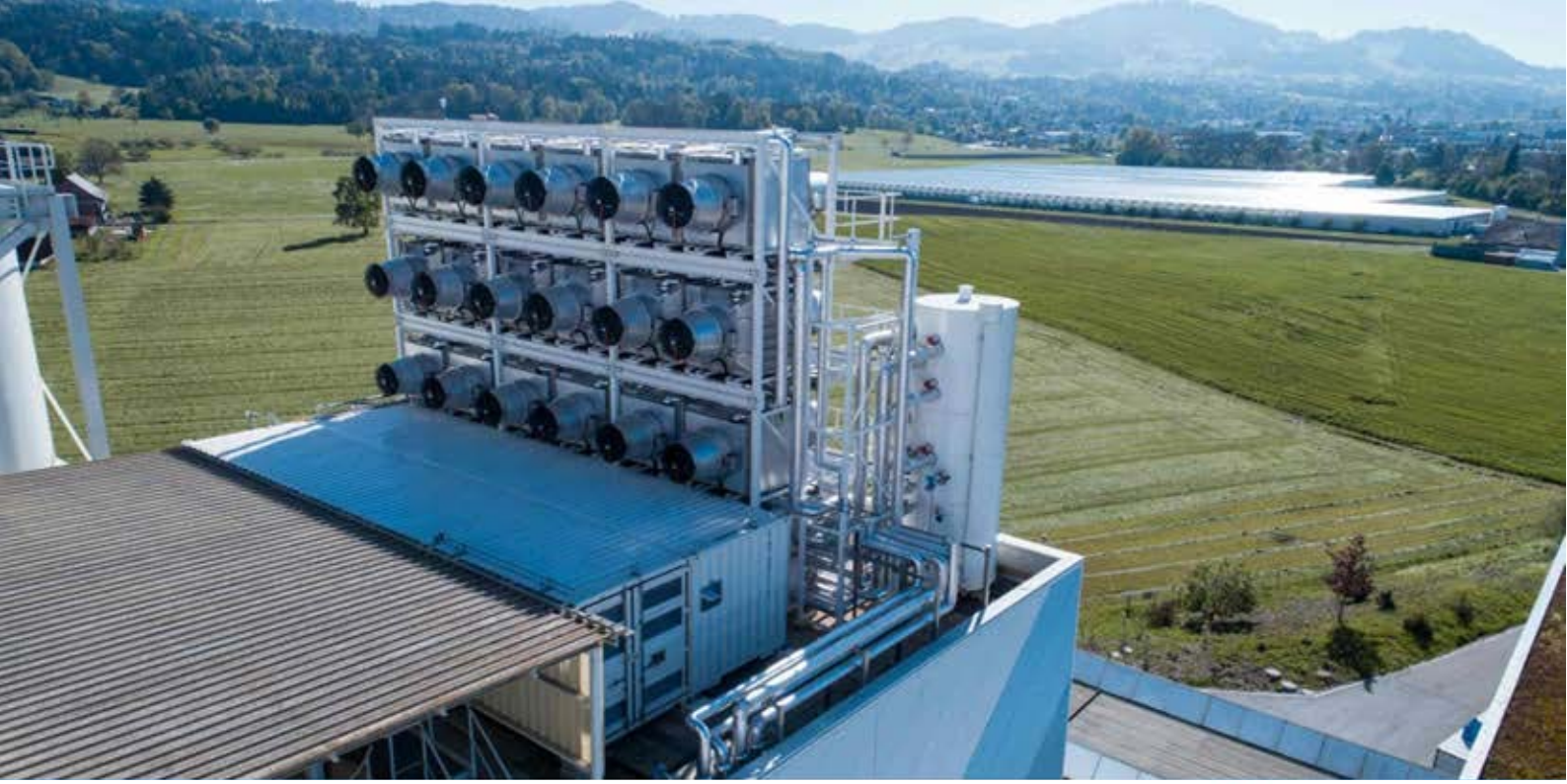


Site visit schedule - 15th May:

12:00 - meeting at Renaissance lobby

12:15 - departure from the hotel

13:00 - arrival to Climeworks plant

14:30 - end of the tour

15:15 - drop off at Renaissance

CLIMEWORKS

Capturing CO_2 from air

Event Venue:

Renaissance Zurich Tower Hotel

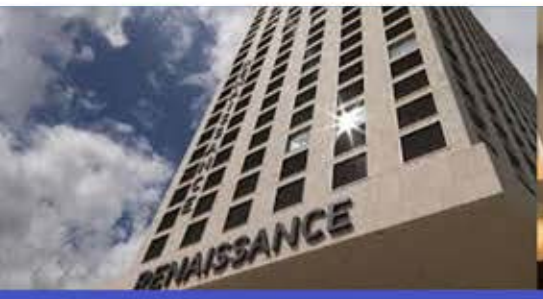
Turbinenstrasse 20,

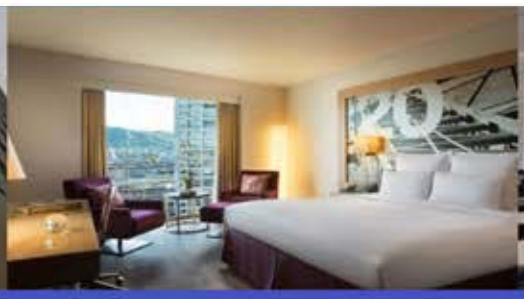
8005 Zürich, Switzerland

Tel: +41 44 630 30 30

RENAISSANCE®

ZURICH TOWER HOTEL





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office@cogitongroup.com

+48 61 250 43 50

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MEET OUR SPEAKERS

Bruce Dannenberg
President
Phytonix Corporation

Ramesh Bhujade
Vice President
Reliance Industries

Christian Wix
Technology
Development Director
Haldor Topsoe

Doris Hafenbrandl
CTO
Electrochaea

Thomas Shaub
Lab Head CaRLa
BASF

Martin Rothaemel
R&D Group Manager
Air Liquide

John Benemann
CEO
MicroBio Engineering

Apu Gosalia
Vice President
FUCHS Petrolub

Stefanie Kesting
President
CO2 Value Europe

Anne S. Meyer
Head, Center for
BioProcess Engineering
Technical University of
Denmark

Denis Thomas
EU Regulatory Affairs
and Business
Development Manager
Hydrogenics

Daniel Egger
Head of Marketing &
Sales
Climeworks

Philipp Furler
Project Manager
ETH Zurich
CEO
Sunredox

Christoph Falter
Lead Researcher
Bauhaus Luftfahrt

Richard Schauperl
Lead Engineer
AVL

Luiz Carlos de Sousa
Manager International
Projects
HSR/IET

Marta Figueiredo
Scientist
Avantium

Monique Schoondorp
Managing Partner
Omega Green

Karl Hauptmeier
Product Manager
Sunfire

Tom Thompson
Chaiman and CEO
Enviro Ambient

Vesa Ruuskanen
Assistant Professor
Lappeenranta
University of Technology

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WELCOME

Dear Colleagues,

On behalf of Cogiton Group, I warmly welcome you at the CO2 Reuse Summit in the beautiful city of Zurich. First of all, I would like to thank you all for comming. People are the biggest value of every event. We belive that bringing you all together under one roof is beneficial for each single participant and the industry as a whole. The conference brought nearly 100 attendees representing over 60 organisations from more than 20 different countries.

Special thanks to Climeworks for providing a group of our participants with an opportunity to visit their impressive plant in Hinwil. I would like to express my sincere gratitude for our speakers responsible for creating an appealing agenda and for our media partners helping us to promote the conference.

CO2 Reuse Summit aims to explore solutions for carbon dioxide utilization. Science made us realise, we can treat CO2 as a feedstock, not waste. It became useful and valuable for various industries.
The topics we cover create a pathway to a sustainable future with lower carbon emissions.
The future when we can finally stop the global warming.

I hope this conference will be a great experience for all of you and you will enjoy your time here.

Yours sincerely

Conference Director
Cogiton Group

DAY ONE - 16TH MAY

08:00 Registration & coffee

08:50 **Welcoming message and opening comments from the Chairman**

09:00 **CO2 valorisation and European policy framework.**
Sophie Wilmet, Innovation Manager, Cefic

09:30 **Carbon Product Innovations - The Anatomy of an Ideal CO2 Conversion Solution**
Tom Thompson, Chairman & CEO, Enviro Ambient

10:00 **CO2 reuse as a way to reduce the CO2 footprint of cement manufacture**
Philippe Fonta, Managing Director, Cement Sustainability Initiative (CSI)

10:30 Networking snacks and coffee

11:00 **Renewable H2: the necessary and versatile molecule to make use of CO2**
Denis Thomas, EU Regulatory Affairs & Business Development Manager, Hydrogenics

11:30 **BioCat – energy and carbon storage going industrial**
Doris Hafenbradl, CTO, Electrochaea

12:00 **High temperature electrolysis – SOEC**
Richard Schauperl, Lead Engineer, AVL

12:30 Networking lunch

13:45 **Power to Methane Pilot with Solid Oxide Electrolysis**
Luiz Carlos de Sousa, Manager International Projects, HSR/IET

14:15 **Conversion of CO2 into CO using electricity**
Christian Wix, Technology Development Director, Haldor Topsoe

14:45 **Renewable fuels and chemicals from power, CO2 and steam**
Karl Hauptmeier, Product Manager,- e-Syngas & e-Fuels, Sunfire

15:15 Networking snacks and coffee

15:45 **CO2 based high value chemicals electrosynthesis**
Marta Figueiredo, Scientist, Avantium

16:15 **Solar reactor technology for CO2 splitting with high selectivity, stability, conversion and efficiency**
Philipp Furler, Project Manager, ETH Zurich / CEO, Sunredox

16:45 **Re-energizing CO2 into liquid fuels via thermochemical conversion: system analysis**
Christoph Falter, Lead Researcher, Bauhaus Luftfahrt

17:15 Closing remarks & end of day one

17:30 Drinks reception

DAY TWO - 17TH MAY

08:20	Registration & coffee
08:50	**Welcoming message and opening comments from the Chairman**
09:00	**Moving towards sustainability with CCU** Stefanie Kesting, President, CO2 Value Europe
09:30	**Capturing CO2 from the air** Daniel Egger, Head of Marketing & Sales, Climeworks
10:00	**CO2 to Methanol: From Concept To Commercial Reality** Martin Rothaemel, R&D Group Manager , Air Liquide
10:30	Networking snacks and coffee
11:00	**Carbon Dioxide Functionalization at CaRLa - utilization of CO2 as building block** Thomas Schaub, Lab Head CaRLa, BASF
11:30	**Foot-Print vs. FUCHS-Print - Decarbonization in the Lubricants Industry** Apu Gosalia, Vice President - Sustainability, Fuchs Petrolub
12:00	**Enzymatic CO2 conversion to high in demand chemicals** Anne S. Meyer, Professor, Head, Center for BioProcess Engineering, Technical University of Denmark
12:30	Networking lunch
13:45	**CO2 Utilization for Algal Biomass– Is Fuel Gas or Purified CO2 Optimum?** Ramesh Bhujade, Vice President, Reliance Industries
14:15	**Biological Carbon Dioxide Utilization Technology for the Production of Low Cost Industrial Chemicals Utilizing Photosynthesis** Bruce Dannenberg, President & CEO, Phytonix Corporation
14:45	**Utilization of CO2 Sources for Microalgae Biomass Production** John Benemann, CEO, MicroBio Engineering
15:15	Networking snacks and coffee
15:45	**Capturing CO2 and earning money in a circular business** Monique Schoondorp, Managing partner , Omega Green
16:15	**Food from electricity and CO2** Vesa Ruuskanen, Post-doctoral researcher, LUT School of Energy Systems
16:45	Closing remarks & end of day two

PARTICIPANTS

Ravi	Agrawal	**Shell**
Claudio	Allevi	**Saras**
JinJoo	An	**KRICT**
Dan	Beattie	**Dow**
John	Benemann	**MicroBio Engineering**
Nino	Berta	**Climeworks**
Christoph	Beuttler	**Climeworks**
Ramesh	Bhujade	**Reliance Technology Group**
Aldo	Bosetti	**ENI**
Gary	Casty	**ExxonMobil Research and Engineering**
Jina	Choi	**KRICT**
Olga	Chowaniec	**CEMEX Research Group**
Bruce	Dannenberg	**Phytonix**
Christophe	Dardel	**EnobraQ**
Ryan	Davis	**Sandia National Laboratories**
Walter	Eevers	**VITO**
Daniel	Egger	**Climeworks**
Christoph	Falter	**Bauhaus Luftfahrt**
Franco	Ferrario	**SIAD**
Marta	Figueiredo	**Avantium**
Nicolo' Arich de	Finetti	**LyondellBasell**
Philippe	Fonta	**Cement Sustainability Initiative (CSI)**
Guido	Franzoni	**Tecnimont**
Philipp	Furler	**ETH Zurich/Sunredox**
Eduardo	Garcia	**Tecnalia**
Monica	Garcia-Ruiz	**Repsol**
Christian	Gebauer	**Heraeus Deutschland**
Apu	Gosalia	**FUCHS PETROLUB**
Ziad	Habib	**Lhoist**
Doris	Hafenbradl	**Electrochaea**
Kent Kammer	Hansen	**Technical University of Denmark**
Karl	Hauptmeier	**Sunfire**
Niels Den	Heijer	**Pentair Haffmans**
Claas	Helmke	**Wermuth Asset Management GmbH**
Ronald	Hopman	**Twence**
Willem	Huisman	**Dow Deutschland**
Mika	Huuhtanen	**University of Oulu**
Wim de	Jong	**Twence**
Ki-Won	Jun	**KRICT**
Michal	Kacperski	**PCC ROKITA**
Istvan	Kalmar	**Mecsek Coal Cluster / Calamites Kft**
Katarzyna	Kapłon	**PCC ROKITA**
Stefanie	Kesting	**CO2 Value Europe**

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Anawat	Ketcong	**SCG Chemicals**
Wolff-Ragnar	Kiebach	**Technical University of Denmark**
Wolfgang	Körner	**Forschungszentrum Jülich**
Tim	Lauret	**Frames**
JoonJae	Lee	**KEITI**
Kwangwon	Lee	**ENSTAR RNC**
Rongshan	Lin	**Dillinger**
Argeime	Lopez	**Azomures**
Michelle	Lynch	**Tube Tech International**
Sampo	Mäkikouri	**VTT**
Guhan	Mathivanan	**Borealis**
Jacques	Melman	**Frames**
Carsten	Mende	**Voith**
Anne S.	Meyer	**Technical University of Denmark**
Nakarin	Mongkolsiri	**SCG Chemicals**
Donato	Montrone	**Saipem**
Giovanni	Moratti	**SARAS**
Anders Winther	Mortensen	**University of Southern Denmark**
Christian	Muser	**Busch**
Nathaniel	Ng	**KBR**
Christian	Nielsen	**Technical University of Denmark**
Tony	Picaro	**Aramco Overseas**
Barbara	Picutti	**Tecnimont**
Oksana	Pilatova	**Dow**
Lydia	Rachbauer	**Bioenergy2020+**
Pier Luigi	Radavelli	**SIAD**
Kasper Dalgas	Rasmussen	**University of Southern Denmark**
Martin	Rothaemel	**Air Liquide**
Vesa	Ruuskanen	**Lappeenranta University of Technology**
Itamar	Sarue	**Yodfat Engineers**
Claudia von	Scala	**Sulzer Chemtech**
Thomas	Schaub	**BASF**
Richard	Schauperl	**AVL**
Monique	Schoondorp	**Omega Green**
Amit	Shah	**Dow Benelux**
Danny	Sherban	**Yodfat Engineers**
Alicia	Soto	**Politecnico di Torino**
Luiz Carlos R. de	Sousa	**IET Institut für Energietechnik**
Gerald	Sprachmann	**Shell Global Solutions**
Hermann	Stelzer	**Forschungszentrum Jülich**
Joseph	Stewart	**Total Research & Technology**
Leonid	Stoppel	**Karlsruhe Institute of Technology**
Denis	Thomas	**Hydrogenics**

PARTICIPANTS

Tom	Thompson	**Enviro Ambient**
Esa	Turpeinen	**University of Oulu**
Louis	Uzor	**Climeworks**
Sophie	Wilmet	**European Chemical Industry Council - Cefic**
Christian	Wix	**Haldor Topsoe**
Samy	Yassin	**Shell Global Solutions**

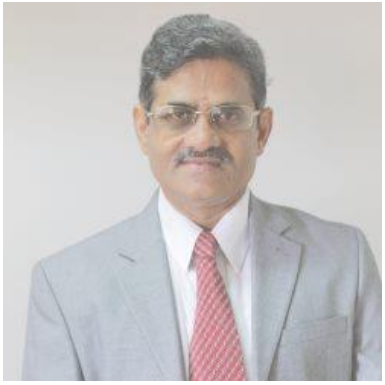
CO_2 REUSE SUMMIT

16-17 May 2018, Zurich

SPEAKERS

John Benemann, CEO, MicroBio Engineering

Dr. John Benemann is co-founder and CEO of MicroBio Engineering Inc., a consulting engineering and R&D company specializing in microalgae production for wastewater treatment, biofuels, feeds and fertilizers, and greenhouse gas mitigation. He has worked with government agencies, large multinational and small start-up companies all over the world. MicroBio Engineering Inc. provides consulting research and engineering services, techno-economic analyses and life cycle assessments, and algae cultivation equipment. The company carries out R&D project supported by the US Department of Energy and private companies in the algae space, including a project on CO2 utilization at a large coal-fired power plant. Dr. Benemann has a Ph.D. in biochemistry from the University of California Berkeley.



Rhamesh Bhujade, Vice President- Process Engineering, Reliance Industries

B Tech, CEng, MChemE: Ramesh is the Vice President, Research and Technology, Reliance Industries, and Head of Algae to Oil – Downstream Technology, CO2 Management and Process Engineering. He is a Chartered Chemical Engineer, with over 37 years of experience in a wide spectrum of industries – Biofuels, Oil & Gas, Refining, Petrochemicals, and Polymers. He has published many technical papers and has over 35 patents, issued or pending, in the areas of CO2 management, Catalytic Hydro-Thermal Liquefaction and Biofuel up-gradation.

Bruce Dannenberg, President and CEO, Phytonix Corporation

Mr. Dannenberg Founded Phytonix Corporation in 2009, an industrial biotechnology company that is a global leader in the development and commercialization of low cost solar chemicals and solar fuels production technology and carbon dioxide utilization (CDU). He is currently President and CEO of Phytonix. Bruce's industrial career has focused on the management of the innovation and technology commercialization process. He has been involved in the semiconductor industry, the biotechnology industry, and the capital markets arena. He holds a Masters of Science degree in Industrial Management from Clemson University, a Masters of Business Administration degree, and a Bachelors degree in Zoology.

Daniel Egger, Head Marketing & Sales, Climeworks

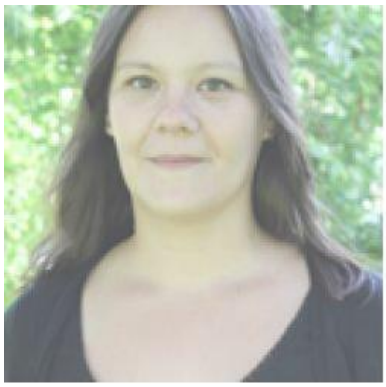
Daniel Egger holds a Master of Science in industrial engineering from the ETH in Zurich. During his career he had different positions in Quality Management, Product and Process Development and Marketing & Sales in different industrial companies. Now he is the head of marketing and sales at Climeworks in Switzerland.

CO_2 REUSE SUMMIT
16-17 May 2018, Zurich

SPEAKERS

Christoph Falter, Research Assistant, Bauhaus Luftfahrt

Dr. Falter studied mechanical engineering at the universities of Stuttgart, Germany, and Zurich, Switzerland, and have specialized in renewable energy technologies with a focus on solar energy conversion. After his graduation,he went to Bauhaus Luftfahrt in Munich, Germany, where he is currently working as a research associate in the group of future technologies and ecology of aviation. Bauhaus Luftfahrt is a non-profit research organization with a long-term perspective on aviation. Dr. Falter predominantly engaged in the European Union-funded project "Sun-to-Liquid" that deals with the production of renewable jet fuel from sunlight, carbon dioxide and water. In 2017, he finished his PhD at the RWTH University of Aachen, Germany, with the topic "Efficiency Potential of Solar Thermochemical Reactor Concepts with Ecological and Economic Performance Analysis of Solar Fuel Production".



Marta Figueiredo, Scientist, Avantium

Marta Figueiredo obtained a PhD in Electrochemistry Science and Technology at the University of Alicante, Spain in 2012 as a Marie Curie Fellow. After the PhD she worked as a postdoctoral researcher at Aalto University (Finland), Leiden University (Netherlands) and University of Copenhagen (Denmark). Her research was always oriented on using electrochemistry and electrocatalysis as tools in environmental and energetic problems. In October 2017, she joined the electrochemistry team of Avantium Chemicals in the Netherlands as a Jr Scientist, being currently involved in the development of technologies for the production of high value chemicals from Carbon dioxide using electrochemistry and renewable energies.

Philippe Fonta, Managing Director, Cement Sustainability Initiative (CSI)

Philippe Fonta has about 25 years of experience with private companies, working in cooperation with international institutions, policy-making bodies and non-governmental organizations. He was Director of Environment and Head of Sustainable Development for Airbus, one of the two major aircraft manufacturers. In this role, he endorsed the responsibility of chairman of the environmental committee of the aerospace manufacturers' trade association, which is the official observer to the UN aviation-specialized standard- and policy-making agency.
Philippe is now bringing his technical engineer's background and his experience in economic scenarios and international cooperation to the cement sector, leading the WBCSD's CSI since March 2011. The CSI is a global effort currently led by 24 major cement producers worldwide with operations in more than 100 countries, who believe there is a strong business case for the pursuit of sustainable development. Created in 1999, the CSI is one of the flagship projects of the WBCSD, offering a platform for its members to collectively address some sustainable development issues like climate change mitigation and adaptation, health and safety, life cycle assessment of cement and concrete, responsible sourcing certification for concrete, biodiversity, water, to name a few.
Philippe is 51 years old, married to Maryline, having together 4 children.

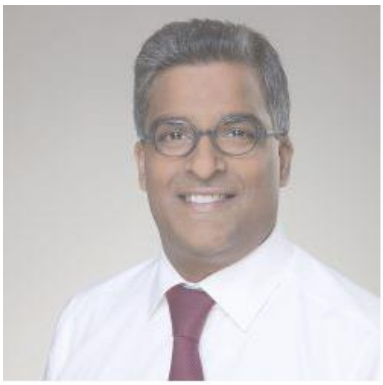
CO_2 REUSE SUMMIT

16-17 May 2018, Zurich

SPEAKERS

Philipp Furler, Project Manager, ETH Zurich / CEO, Sunredox

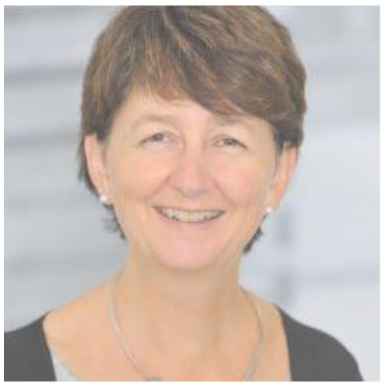
Philipp Furler received his Ph.D. from ETH Zurich in 2014. Currently, he is a Pioneer Fellow and Research Associate at ETH Zurich. His research is focused on solar chemistry and covers the fields of reactor engineering and modeling, advanced materials and morphologies for thermochemical H_2O and CO_2 splitting, and high-temperature energy storage. Philipp serves as the operating agent – Solar Chemistry Research for the International Energy Agency's technology program SolarPACES and is the co-founder and CEO of the ETH spin-off Sunredox.



Apu Gosalia, Vice President - Sustainability, Fuchs Petrolub

Born in Mannheim (Germany) in 1971
MBA, Western Illinois University (USA) in 1996/1997
Diplom-Kaufmann, University of Mannheim in 1999
Successful completion of certified study program "Competitive Intelligence Engineer", Graduate School Rhein-Neckar, 2009
Successful completion of certified qualification course "Sustainability Manager (SME)", European Institute for Labour Relations, 2012
Since more than 18 years different positions in the FUCHS PETROLUB Group, the world's leading independent manufacturer of lubricants and related specialties

Current Responsibilities/Duties:
Strategic Sustainability Management along the process and value chain (supplier sustainability performance evaluation, KPI analyses, corporate carbon footprint management, product life cycle analyses, corporate citizenship)
Global Competitive Intelligence (product portfolio analyses, production plants analyses, scanning/screening competitive landscape for potential acquisition targets, market intelligence)
Key note speaker at international conferences on sustainability and intelligence
Chairman Industry Statistics Committee UEIL (Union of the European Lubricants Industry)
Spokesman Sustainability Initiative NaSch (Nachhaltigkeit Schmierstoffindustrie)



Doris Hafenbradl, CTO, Electrochaea

Doris has enjoyed a successful career as scientist and corporate executive in the biotech and pharma industry in the US and Europe. She joined Electrochaea from Axxam, a leading provider of integrated discovery services for the life sciences industry, where she was responsible for the company's discovery services activities. Prior to Axxam, she held several senior management roles in international, industry-leading pharmaceutical firms including BioFocus, Proteros, GPC Biotech, Axxima Pharmaceuticals, Genomics Institute of the Novartis Research Foundation, and Diversa. Doris dedicated her doctoral research in icrobiology to the study of hyperthermophilic archaea in the laboratory of Prof. Dr. Karl Stetter at the Archaea Centre at the University of Regensburg.

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SPEAKERS

Karl Hauptmeier, Product Manager, Sunfire

Karl Hauptmeier holds a MSc. in Energy- and Process- Engineering from the TU Berlin and is Product Manager for e-Syngas & e-Fuels at the Sunfire GmbH since 2017. His focus lies in the critical analysis of innovative energy transformation technologies and developing smart business cases for further system integration. Previous to his position at Sunfire, Karl has gathered interdisciplinary experiences while working with the International Energy Agency in Paris and McKinsey & Company in Hamburg.

Stefanie Kesting, President, CO2 Value Europe

Dr. Stefanie Kesting is President of CO2 Value Europe since the end of 2017. CO2 Value Europe is a new organization dedicated to the utilization of CO2.
As Director Innovation at Uniper, she is since early 2016 responsible for the identification and development of new business areas outside Uniper's core business. Uniper was founded in January 2016 as spinoff of E.ON, taking over conventional power generation, global commodity trading, energy storage, energy sales and energy services. Stefanie studied Business Administration (Dipl.Kffr.) and Economics (PhD) and has a long track record in leadership toward innovative businesses and bringing them to market successfully.

Anne S. Meyer, Head, Center for BioProcess Engineering, Technical University of Denmark

Professor Anne S. Meyer is Professor and Head of Center for BioProcess Engineering at the Department of Chemical and Biochemical Engineering, Technical University of Denmark (DTU). Technology focus is on Enzyme Technology.
She holds an MSc from the University of Copenhagen, and an MSc from the University of Read-ing, UK, plus a PhD from the Technical University of Denmark. She has had two postdoc stays in the USA at Univ. California Davis. In 2006 she assumed her current role as Full Professor of Bio-Process Engineering and Head of Center for BioProcess Engineering, Dept. of Chemical and Bio-chemical Engineering, DTU. She also holds a visiting professorship at Department of Chemical and Biomolecular Engineering, University of Melbourne, Australia.
Her research area is on design and development of bioprocesses using enzymes: Biocatalysis Kinetics, Enzyme Technology, Biorefining, and Integrated Separation Technology as core re-search discipline areas at DTU. Recently expanded to enzymatic CO2 conversion and enzymatic biorefining of marine macroalgae. The Center of BioProcess Engineering, DTU, has established use of bioinformatics for enzyme discovery and an enzyme production platform for recombi-nant production of eukaryotic (fungal) and prokaryotic (bacterial) enzymes with Pichia pastoris and E. coli as key work-horse hosts in 5 Liter fermentation systems. The research is usually con-ducted in collaboration programmes with industrial and academic collaboration both interna-tionally and nationally.

CO_2 REUSE SUMMIT
16-17 May 2018, Zurich

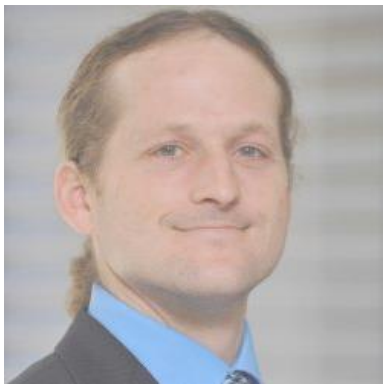
SPEAKERS

Martin Rothaemel, R&D Group Manager, Air Liquide

Martin Rothaemel (martin.rothaemel@airliquide.com) received his PhD in Technical Chemistry from Ruhr-University in Bochum (Germany), working with Professor Manfred Baerns on transient catalytic conversions. He joined Lurgi in 1997 as a Development Engineer where he was involved in the development of the GEMINOX process for production of 1,4-butanediol from maleic acid and the MTP process for conversion of methanol to propylene. After Lurgi was acquired by Air Liquide in 2007, he managed the "Fuels & Chemicals" group at the Frankfurt Research & Technology Center (FRTC) dealing with methanol and DME synthesis, methanol downstream and Fischer-Tropsch technologies as well as polymer and oleochemical processes. Currently he is responsible for the "m-Lab @ FRTC" which focuses on identifying and evaluating new emerging technologies for the usage and production of essential small molecules for Air Liquide.

Vesa Ruuskanen, Post-doctoral Researcher, LUT School of Energy Systems

Vesa Ruuskanen received the M.Sc. degree in electrical engineering and the D.Sc. (Technology) degree from the Lappeenranta University of Technology (LUT), Lappeenranta, Finland, in 2007 and 2011, respectively. He is currently an Assistant Professor in the LUT REFLEX research platform (https://www.lut.fi/web/en/research/platforms/reflex).
He has more than ten years of experience in the design and modeling of electrical drives including power electronic converters and electrical machines.
In recent years, Dr. Ruuskanen has extended his expertise to hydrogen energy systems and especially to the water electrolyzer technology.
Dr. Ruuskanen has been investigating water electrolysis powered by renewable energy sources and the power-hardware-in-loop simulation of the water electrolyzer in the Neo-Carbon Energy project (www.neocarbonenergy.fi) aiming at a carbon neutral Power-to-X chain, further demonstrated in the Soletair project (www.soletair.fi).
His ongoing research is aimed at analyzing the effect of power quality on the water electrolyzer specific energy consumption.
In the Neo-Carbon Food project (www.neocarbonfood.fi), Dr. Ruuskanen is developing the in situ electrolysis for the electrobioreactors, used for protein production from renewable electricity and atmospheric CO2.



Thomas Schaub, Lab Head CaRLa, BASF

Dr. Schaub is the Lab Head of the Catalysis Research Laboratory (CaRLa) in Heidelberg.
Research Interests:
- Process Development using homogeneous catalysis on: Hydrogenations, Aminations, Acceptorless Dehydrogenations, Oligomerisations, Carbonylations
- Use of CO2 as building block
- Organometallic Synthesis
- Mechanistic investigations on homogeneous catalyzed reactions
- High pressure chemistry

Co-author of 36 scientific publications (thereof on 16 as reference author), author of 3 book chapters, Co-inventor on 64 patents, Invited Speaker on different Conferences and holding lectures at several universities (e.g. Imperial College)

CO_2 REUSE SUMMIT

16-17 May 2018, Zurich

SPEAKERS

Richard Schauperl, Lead Engineer, AVL

1999 – 2004 Engineer in Electronics & computer engineering, Polytechnic HTL-Bulme, Graz (Austria)
2007 – 2011 Master in Industrial Engineering, University of applied sciences, Mittweida
since Sept. 1995 AVL List GmbH
1995-1999 Apprenticeship for Physical Laboratory Assistant
1999-2003 Physic Laboratory Assistant, Test systems
2004-2016 Lead Engineer and Project Manager Fuel Cells
Since 2016 R&D Coordinator and Lead Engineer Fuel Cells
Since 2016 Member of the H2020 Stationary Advisory Group & Science with and for Society Advisory Group
Since 2016 Member of the VDMA Advisory Group for High Temperature Fuel Cells
Since 2018 Member of the A3PS Advisory Group for Fuel Cells
Since 2018 Board Member of the Austrian Energy Model Region WIVA P&G

Monique Schoondorp, Managing Partner, Omega Green

Dr Monique Schoondorp has worked for 10 years in the development of large scale algae production and is co-owner and managing partner of Omega Green B.V. In 2008 she founded Algaecom together with Bert Knol and this company developed the technology exploited since 2015 by Omega Green B.V., also founded by Bert Knol and Monique Schoondorp. Monique started her career at the Max Planck institute in Mainz, followed by a management position at TNO, an applied research institute of the Netherlands. She returned to the university of Groningen to transfer knowledge from the university to the market in the area of biotechnology, was managing director of BIOMADE, one of the first institutes devoted to bio-nanotechnology financed by the investor company 3i. Monique decided to continue her career as an entrepreneur and started her own technology transfer consultancy specialized in innovative public-private cooperations. She has run this consultancy for 10 years and one of the subjects was the algae biotechnology, which was the first introduction to large scale algae culturing. Monique Schoondorp has a broad scientific interest ranging from material sciences, nanotechnology and biotechnology. She also was appointed as a professor New Business and Energy at the Hanze University of Applied Sciences in Groningen. The professorship was focussed on aquatic biomass and the circular economy. Her main interest at this moment is bringing algae culturing as a sustainable CCU technology to the market.
Dr. Monique Schoondorp received her Ph.D from the University of Groningen in the Netherlands. She worked on a polymer physics subject in close collaboration with Prof. Feringa, the Nobel price winner of 2016.

Luiz Carlos R. de Sousa, Manager International Projects, IET Institut für Energietechnik/HSR

Luiz Carlos R. de Sousa works since 2016 at the Institute for Energy Technology IET as Manager International Projects. There leads the team in charge of building the High Efficiency Power-to-Methane Pilot plant at HSR. He holds a Master's degree in Chemical Engineering from the ETH Zürich, Switzerland and a PhD in Biomass and Waste Gasification from the same institution. He has also received the joint MBA from the University of St. Gallen, Switzerland and the University of Toronto, Canada.
Before joining IET Luiz Carlos spent about 15 years in the cement industry holding positions in several areas including engineering, alternative fuels, management and innovation. Prior to his career in industry Luiz Carlos worked as a research engineer at the Paul Scherrer Institute in Switzeland.

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SPEAKERS

Denis Thomas, EU Regulatory Affairs & Business Development Manager, Hydrogenics

Denis Thomas is in charge of EU Regulatory Affairs & Business Development activities for Renewable Hydrogen at Hydrogenics, a world-wide leading provider of electrolyzers, hydrogen refueling stations and hydrogen fuel cells.
Mr. Thomas is member of the Board of Hydrogen Europe and member of the Governing Board of the Fuel Cell and Hydrogen 2 Joint Undertaking. He also represents Hydrogenics at Wind Europe and CO2 Value Europe. Before joining Hydrogenics in 2014, Mr. Thomas has worked 8 years in the solar photovoltaic sector in Belgium and at European level within the European Photovoltaic Industry Association. Mr. Thomas holds a Master Degree in Business Administration and a European Master Degree in Renewable Energy.

Tom Thompson, Chaiman and CEO, Enviro Ambient

Mr. Thompson is the Chairman and CEO of Enviro Ambient Corporation, as well as Chairman of the Enviro Innovate Clean-tech Foundation; an international clean-tech accelerator supported by a host of international coalition partners.
Prior to joining Enviro Ambient and the Foundation, Mr. Thompson was the Chief Executive Officer of Eco Power Solutions. During his nine year tenure with Eco Power, Mr. Thompson drove the expansion of Eco Power from Canada to the United States, generated significant equity investment for the company, accepted the 2010 Most Promising Energy and Clean Technology Company award at the 8th Annual Rice Alliance Energy and Technology Venture Forum, and developed sales channels into the global markets that continue to benefit Enviro Ambient, its affiliates, partners and stakeholders.
Mr. Thompson's tenure at Eco Power was preceded by his ten year career as President and Chief Executive Officer of Capital Business Management Group, a member of the Thompson Corporation, an asset management company. Mr. Thompson's tenure with Capital Business Management Group followed exemplary service in a senior management capacity with Canada Trust, The Royal Bank of Canada and First City Trust Company.
In addition to his professional responsibilities, Mr. Thompson is a member of the New England Canada Business Council, the Volunteer Past Chair of the ALS Association – Massachusetts Chapter, and a founding member of the Greater Boston Chamber of Commerce Energy Committee.

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SPEAKERS

Sophie Wilmet, Innovation Manager, European Chemical Industry Council (Cefic)

Sophie Wilmet joined the Research & Innovation department of the European Chemical Industry Council (Cefic), in 2007. Currently Innovation Manager in charge of enabling technologies, she is responsible for the activities related to CO2 valorisation. She is a member of the Partnership Board of the Public-Private Partnership SPIRE and is also actively involved in the European Technology Platform for Sustainable Chemistry (SusChem). She graduated as a chemical engineer in France and holds a PhD in chemistry.

Christian Wix, Technology Development Director, Haldor Topsoe

Mr. Christian Wix holds a position as R&D Director for New and Emerging Technology Development at Haldor Topsoe in Denmark. Christian Wix's responsibilities comprises the following technologies:

- Sugar based ethylene glycol
- Coal gas utilization
- Gas conversion using Solid Oxide Electrolyzer cells
- BioGas upgrading
- SNG
- Methanol to Gasoline
- Bio Methanol

Christian Wix has spent his entire career at Haldor Topsøe doing technology engineering, development and sales.
Christian Wix hold a degree in Chemical Engineering from the Technical University of Denmark in 2005.

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http://www.rsc.org

Founded in 2015, **BiogasWorld** is a Canadian business generation platform & online marketplace, dedicated to connecting the global biogas industry by accelerating business around the world between product and service suppliers and project developers. BiogasWorld is the obvious starting point of any biogas project.
Its network of several thousand experts, suppliers, developers and scientists enables it to keep up to date on new technological advances while keeping abreast of the "state of the art".

https://www.biogasworld.com

CO2Chem is the world's largest network dedicated to the utilisation of carbon dioxide. It is an international and cross-boundary initiative, maintaining a balance of membership across academia, industry and governments. We enable global collaboration, run conferences and meetings, provide news and information on funding opportunities, publish reports and briefings, and create educational resources. We also work to influence science and industrial policy, offering independent and incisive thinking around carbon dioxide utilisation. CO2Chem is an EPSRC Grand Challenge Network. EPSRC (The Engineering and Physical Sciences Research Council) is the main UK government agency for funding research in engineering and physical sciences, investing more than £800 million each year (www.epsrc.ac.uk).

Navigant Research is a market research and consulting team that provides in-depth analysis of global clean technology markets. The team's research methodology combines supply-side industry analysis, end-user primary research and demand assessment, and deep examination of technology trends to provide a comprehensive view of these industry sectors.

http://www.navigantresearch.com

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https://www.eco-business.com

ChemistryViews is a comprehensive free-to-view news and information website with an associated scientific magazine, ChemViews. It is provided by ChemPubSoc Europe, an organization of 16 European chemical societies. The site offers news, commentary, opinion, and additional feature material from leading authors to the global chemistry community as well as educational material. It is closely linked to society journals like Angewandte Chemie and Chemistry – A European Journal.

http://www.chemistryviews.org/

In the past few decades, an increasing number of people and businesses have been attracted to renewable energy. As the price of fuel increases, this tendency will only get stronger. GreenJournal.co.uk keeps you updated with the latest news on green energy. We are a team of young enthusiasts regarding this topic and are willing to keep you posted with the latest information about solar, wind and geothermal energy, sustainability and more.
GreenJournal focuses mainly on the UK market for renewables, however, since environmental awareness is a widespread issue, we also post news from all around the globe. You can also visit our Events section to find out upcoming events and conferences in the field of renewable energy.

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Biobased Press is an independent, non-sponsored website that takes a helicopter view of the biobased economy: it discusses business and research, and links the biobased economy to neighbouring areas like sustainability, biotechnology, energy, agriculture, policy and the economy. We also host the website www.precisioneconomy.com.

www.biobasedpress.eu

Energy Business Review is a well established online knowledge portal for the entire energy community, covering Oil & Gas, Power and Mining. We have an audience of over one million hits a year in addition to more than 150,000 registered, opt-in subscribers across the group. Each industry sector has its own landing page with homepages and network sites drilling down into the relevant subsectors, providing you with the latest industry news, feature articles, financial information, blogs, newsletters, and market analysis reports.

http://www.energy-business-review.com

MacPlas (technical magazine for the plastics and rubber industry) is published bimonthly with the support of AMAPLAST (Italian Plastics and Rubber Processing Machinery and Moulds Manufacturers' Association), by the commercial company PROMAPLAST srl. MacPlas (Italian edition) has been published for 40 years and nowadays is the leading magazine in the plastics & rubber industry according to its circulation (7,000 copies) and distribution in Italy.

http://macplas.it/en

PlasticPortal.eu® is a business portal for the professionals in the plastics industry in Czech and Slovak republic. The purpose of the portal is a comprehensive support for managers in carrying out tasks associated with increasing sales, supplies the best solution in the field of raw materials, machines and equipment, company promotion and human resources seeking. PlasticPortal.eu® visits everybody who is looking for information on plastics, packaging, technologies and recycling.

http://www.plasticportal.eu/en

Cleantech Law Partners is a full-service law firm dedicated exclusively to the renewable energy industry. Our clients include renewable energy project developers, cleantech companies, financiers, manufacturers, and entrepreneurs. CLP's legal team has extensive knowledge of the clean technology sector and experience working with renewable energy companies across the United States and around the world.

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NRG Expert provides cutting-edge energy market reports, databases, forecasts, consultancy and analysis to the world's leading companies, consultancies and investment houses. Phone us to access over a million lines of world-wide energy data, analysis and information, collected from 100+ trusted sources.
We provide energy data, reports, and statistics in the following sectors: Power and Infrastructure; Metering & Smart Grid; Utility Guides; Fossil Fuel & Conventional Energy;Renewable Energy; Water & Waste; and Finance & Regulatory as well as Country Specific data through our Almanac.

http://www.nrgexpert.com/

GreenMatch is a comprehensive guide designed to help you navigate the transition to renewable energy. We care about the environment and believe that everyone has a part to play in making the UK a little greener - one house at a time. GreenMatch strives to engage more homes and families in sustainability. Which is why we promote the use of clean energy wherever possible and provide you with all the necessary information to make the switch even easier.

https://www.greenmatch.co.uk/

The Global Energy Certification (GEC) designation is a 100% online-based energy industry training and certification program that can be completed as quickly as you'd like. With 12 examination dates offered each year, the GEC program is flexible and made to fit your schedule. The GEC program is the most popular and trusted certification program built exclusively by and for energy industry professionals.

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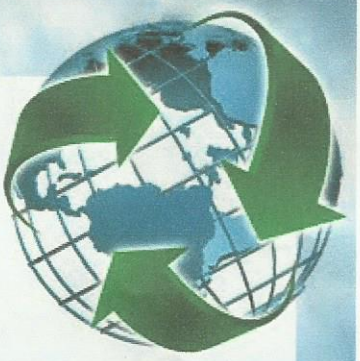
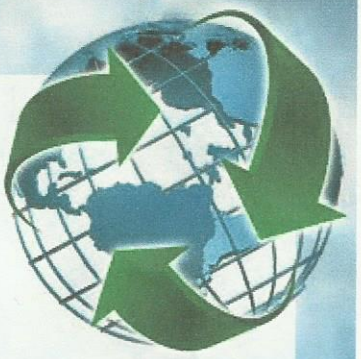
DAY ONE - 16TH MAY



08:00	Registration & coffee
08:50	**Welcoming message and opening comments from the Chairman**
09:00	**Regulatory and policy framework**
09:30	**Capturing CO2 from the air** Daniel Egger, Head of Marketing & Sales, Climeworks
10:00	**CO2 reuse as a way to reduce the CO2 footprint of cement manufacture** Philippe Fonta, Managing Director, Cement Sustainability Initiative (CSI)
10:30	Networking snacks and coffee
11:00	**Renewable H2: the necessary and versatile molecule to make use of CO2** Denis Thomas, EU Regulatory Affairs & Business Development Manager, Hydrogenics
11:30	**Presentation title to be confirmed** Doris Hafenbradl, CTO, Electrochaea
12:00	**High temperature electrolysis – SOEC** Richard Schauperl, Lead Engineer, AVL
12:30	Networking lunch
13:30	**Power to Methane Pilot with Solid Oxide Electrolysis** Luiz Carlos de Sousa, Manager International Projects, HSR/IET
14:00	**Conversion of CO2 into CO using electricity** Christian Wix, Technology Development Director, Haldor Topsoe
14:30	**Renewable fuels and chemicals from power, CO2 and steam** Karl Hauptmeier, Product Manager,- e-Syngas & e-Fuels, Sunfire
15:00	Networking snacks and coffee
15:30	**CO2 based high value chemicals electrosynthesis** Marta Figueiredo, Scientist, Avantium
16:00	**Solar reactor technology for CO2 splitting with high selectivity, stability, conversion and efficiency** Philipp Furler, Project Manager, ETH Zurich / CEO, Sunredox
16:30	**Re-energizing CO2 into liquid fuels via thermochemical conversion: system analysis** Christoph Falter, Lead Researcher, Bauhaus Luftfahrt
17:00	Closing remarks & end of day one

DAY TWO - 17TH MAY



08:20	Registration & coffee
08:50	**Welcoming message and opening comments from the Chairman**
09:00	**Moving towards sustainability with CCU** Stefanie Kesting, President, CO2 Value Europe
09:30	**LCA & TEA of utilization projects** Tom Thompson, Chairman & CEO, Enviro Ambient
10:00	**CO2 to Methanol: From Concept To Commercial Reality** Martin Rothaemel, R&D Group Manager , Air Liquide
10:30	Networking snacks and coffee
11:00	**Carbon Dioxide Functionalization at CaRLa - utilization of CO2 as building block** Thomas Schaub, Lab Head CaRLa, BASF
11:30	**Foot-Print vs. FUCHS-Print - Decarbonization in the Lubricants Industry** Apu Gosalia, Vice President - Sustainability, Fuchs Petrolub
12:00	**Enzymatic CO2 conversion to high in demand chemicals** Anne S. Meyer, Professor, Head, Center for BioProcess Engineering, Technical University of Denmark
12:30	Networking lunch
13:30	**CO2 Utilization for Algal Biomass– Is Fuel Gas or Purified CO2 Optimum?** Ramesh Bhujade, Vice President, Reliance Industries
14:00	**Biological Carbon Dioxide Utilization Technology for the Production of Low Cost Industrial Chemicals Utilizing Photosynthesis** Bruce Dannenberg, President & CEO, Phytonix Corporation
14:30	**Utilization of CO2 Sources for Microalgae Biomass Production** John Benemann, CEO, MicroBio Engineering
15:00	Networking snacks and coffee
15:30	**Capturing CO2 and earning money in a circular business** Monique Schoondorp, Managing partner , Omega Green
16:00	**Food from electricity and CO2** Vesa Ruuskanen, Post-doctoral researcher, LUT School of Energy Systems
16:30	Closing remarks & end of day two