

Wednesday September 24th, 2014 Afternoon

Pre-forum satellite event:

12:00-18:00

Associated Roadmapping workshop :
Industrial Biotechnology "Bio-TIC"

Roadmapping workshop and business-case analysis devoted to CO₂ as feedstock for **industrial biotechnology** organized by Bio-Tic (FP7-Biotech).

Thursday September 25th, 2014 – Morning

08:15 - 09:00

Participants registration and poster hang up

09:00 - 09:30

Institutional opening addresses

Welcome: Gérard PIGNAULT, CPE Lyon

Françoise NOARS, DREAL Rhône

09:30 - 10:45

Opening Session - CO₂: The context

Chair: Claude FUSSLER, Cleantech advisor

09:30 - 09:45

Pascale BRACONNOT, IPSL (F)

Assessment of uncertainty in climate diagnostics and projections

09:45 – 10:10

Simon BENNETT, International Energy Agency

The policy contexts of Carbon Capture and Storage

10:10 - 10:25

Pierre BECCAT, IFPEN (F)

The energetic transition, the need for renewable energies and the role of CO₂

10:25 - 10:45

Questions to speakers' round table and Chair's conclusions

10:45 - 11:30

Coffee break and group photo around carbon negative masonry bench

11:30 – 13:00

Session 1 - Materials from capture

Chair: Simon BENNETT, International Energy Agency

11:30 - 11:50

Donald DE PAOLO, Lawrence Berkeley Nat Lab (US)

Current Research on Atmospheric and Captured CO₂ Utilization

11:50 - 12:05

Michel GIMENEZ, Lafarge (F)

Postcombustion, oxycombustion and other CO₂ capture technologies

12:05 - 12:25

Colin HILLS, University of Greenwich (UK)

Virgin stone replacement from aggregates manufactured from hazardous waste and CO₂ gas

12:25 - 12:30

Gunther WALENTA, Lafarge (F)

Aether: reducing the carbon footprint of cement

12:30 - 13:00

Questions to speakers, round table and Chair's conclusions

13:00 - 14:15

Lunch break

Thursday September 25th, 2014 – Afternoon
14:15 - 15:15 **Session 2 - Fuels - Part 1: Power-to-Gas**
 Chair: Jean-Pierre WEST, EDF R&D

- 14:15 - 14:35 **John Bøgild HANSEN, Haldor Topsøe (DK)**
 Solid Oxide Electrolysis enabled CO₂ utilization
- 14:35 - 14:50 **Eglantine FLOTTE, IDEEL (F)**
 Industrial potential of CO₂ utilization: scale-up and opportunity assessment
- 14:50 - 15:05 **Jean-Paul REICH, GDF-Suez (F)**
 Update on ongoing power-to-gas projects
- 15:05 - 15:10 **Jean-Marc BORGARD, CEA (F)**
 Stability and performance of FeAg based catalysts for the Reverse Water Gas Shift reaction
- 15:10 - 15:15 **David Scheiner, NewCO2fuels (IL)**
 High temperature driven CO₂ and water dissociation to syngas

15:15 - 15:45

Coffee break
15:45 - 17:30 **Session 2 - Fuels - Part 2: Power-to-Liquid**
 Chair: Narasi SRIDHAR, DNV (US)

- 15:45 - 16:05 **K.C TRAN, CRI (IS)**
 Making Renewable Methanol by Recycling Carbon
- 16:05 - 16:20 **Matthias BELLER, Leibniz-Institute für Katalyse (D)**
 Development of New Catalysts for the Reduction of Carbon Dioxide and for Hydrogen Storage Processes using Carbon Dioxide
- 16:20 - 16:45 **Robert GRESSER, Solvay (B)**
 Challenges for creating a "CO₂ CCU industry"
- 16:45 - 16:50 **Karin ANDERSSON, Chalmers University of Technology (SE)**
 The Future Role of CO₂ Based Methanol as a Marine Fuel
- 16:50 - 16:55 **Yuichi MANAKA, AIST (J)**
 Development of Homogenous Catalyst for CO₂ Hydrogenation and Dehydrogenation of Formic Acid
- 16:55 - 17:00 **Rishi PARAJULI, LiquidLight (US)**
 Electrochemical Production of Multi-Carbon Organic Chemicals from CO₂
- 17:00 - 17:30 Questions to speakers, round table and Chairs' conclusions

Thursday September 25th, 2014 – Evening

17:30 - 18:00

Opening of Poster session

18:00 - 18:45

Special session - Will climate negotiations enable a circular carbon economy?

Chair: Claude FUSSLER, Cleantech advisor Chair:

18:00-18:20

Brice LALONDE, United NationsReport and analysis of the United Nations' Climate Summit (New York Sept 23rd, 2014)

18:20-18:40

Walter STAHEL, Club of Rome

18:40-18:50

Questions to speakers' and Chair's conclusions

18:45 - 20:00

Poster session and Cocktail

Friday September 26th, 2014 - Morning

08:30 - 09:35

Session 3 - Chemicals - Part 1: Organic (Poly)Carbonates

Chair: Thibault CANTAT, CEA (F)

08:30 - 08:50

Walter LEITNER, RWTH, Aachen University (D)

Carbon Dioxide as Carbon Source for the Energetic and Chemical Value Chain: Challenges and Opportunities for Catalysis

08:50 - 09:05

Donald DARENSBOURG, Texas A&M University (US)Completely alternating copolymerization of CO₂ and epoxides or oxetanes to polycarbonates

09:05 - 09:20

Taewook KWON, SK Innovation (SK)GreenPoITM: CO₂ – Embedded Polymer

09:20 - 09:30

Benjamin SCHÄFFNER, EVONIK (D)Unsaturated carboxylic acids from CO₂

09:30 - 09:35

Michael NORTH, University of York (UK)Unprecedented Halide-free Aluminium Catalyst for the Synthesis of Cyclic Carbonates from Epoxides and CO₂

Friday September 26th, 2014 – Morning (cont'd)

09:35 - 11:00 **Session 3 - Chemicals - Part 2: Renewable energies and artificial leaves**
 Chair: Eric PUZENAT, IRCELYON

09:35- 09:55 **Marc FONTECAVE, Collège de France (F)**
 Artificial photosynthesis: (photo)catalysts for CO₂ reduction

09:55 - 10:10 **Can LI, State Key Laboratory Catalysis, Dalian (CN)**
 Fundamental understanding of photocatalysis and photoelectrocatalysis for solar fuel production

10:10 - 10:25 **Daniel CURULLA FERRE, Total (F)**
 Thermochemical and Bioinspired Production of Solar Fuel

10:25 - 10:30 **Pierre BARTHELEMY, CEFIC**
 Industrial Biotechnology for Use of CO₂ as a Feedstock

10:30 - 11:00 Questions to speakers' round table and Chair's conclusions

11:00 - 11:30 **Coffee break**

11:30 - 13:00 **Closing session - Business, cost, analyses and funding opportunities**
 Chair: Daniel CLEMENT, Club CO₂ (F)

11:30 - 11:40 **Aicha EL KHAMLICHI, ADEME (F)**
 ADEME's Energy, environmental and technico-economic analysis of the most promising CO₂ technologies

11:40 - 11:50 **Evangelos TZIMAS, European Commission**
 Outlook of CO₂ utilization pathways with good prospects to reach the European market at short-medium term

11:50 - 12:00 **Lothar MENNICKEN, Federal Ministry BMBF (D)**
 The German R&D Program for CO₂ Utilization - innovations for a green economy

12:00 - 12:10 **Gernot KLOTZ, CEFIC**
 Integrated approach across public and private sectors and appropriate policy framework

12:10 - 12:20 **Kirk ANDRIES, CCEMC (CA)**
 \$35 million carbon use international competition in the global search for innovative carbon uses

12:20 - 12:50 Questions to speakers' round table and Chair's conclusions

12:50 – 13:00 **Closing remarks**
 Alessandra QUADRELLI, CNRS and CPE Lyon (F)
 Peter STYRING, University of Sheffield (UK)

Friday September 26th, 2014 - Afternoon

Post-forum satellite event:

14:00 – 17:00

Associated Roadmapping Workshop : **What are the policy bottlenecks for CO₂ recycling?**

Strategic Research Agenda "SCOT"*

Confirmed speakers include:

- Sophie Wilmet (CEFIC)
- Hans Bolscher (Triple E)
- Alexis Bazzanella (Dechema)
- Michael North (University of York)
- Michael Priestnall (Cambridge Carbon Capture)

Workshop looking at some of the common obstacles for the development of CO₂ utilization technologies and their potential policy solutions. This workshop will inform SCOT's* preparation of the Strategic European Research and Innovation Agenda in the field of CO₂ recycling.

* "Smart CO₂ transformation" (FP7) project site: <http://www.scotproject.org>

<http://co2forum.cpe.fr/scot.htm>