



CO₂QUEST

2ND INTERNATIONAL FORUM ON RECENT DEVELOPMENTS OF CCS IMPLEMENTATION

LEADING THE WAY TO A LOW-CARBON FUTURE

16TH - 17TH DECEMBER, 2015

ATHENS, GREECE



ST. GEORGE LYCABETTUS HOTEL

AGENDA





TUESDAY, 15 DECEMBER, 2015

Arrival to Athens and check-in at the **St. George Lycabettus Hotel**.

TRANSPORTATION TO / FROM AIRPORT (PRICES FOR ONE WAY)...

▪ Private transportation, organized by the Hotel:	70€
▪ Taxi from the airport:	40€
▪ Metro to Evangelismos station, in combination with a taxi:	
Metro	8€
Taxi (approx.)	5€

FOR YOUR EVENING, WE PROPOSE...

A walk to Kolonaki, Athens' high-end district, right where your hotel is located. Kolonaki is a top shopping area and has a number of museums (the Benaki Museum, the Museum of Cycladic Arts, the Byzantine Museum and more). A plethora of nightlife options, bars, restaurants, cafes, can be your choice after finishing your walk.

From Kolonaki you can also take the Lycabettus Funicular to reach the Lycabettus Hill top and enjoy fantastic panoramic views of Athens.

SOME SUGGESTIONS FOR DINING IN THE AREA:

- ✓ Rock & Roll
<http://www.bestofrestaurants.gr/attiki/athina/sites/restaurants/rocknroll/>
- ✓ Oikeio
<http://www.bestofrestaurants.gr/attiki/athina/sites/restaurants/oikeio/>
- ✓ Para Siempre
http://www.bestofrestaurants.gr/attiki/athina/sites/restaurants/para_siempre/
- ✓ Orizontes Restaurant (at the top of Lycabettus Hill)
<http://www.orizonteslycabettus.gr/en>

ALTERNATIVELY

A walk in Plaka and Monastiraki, the old historical neighborhoods of Athens, at the footsteps of the Acropolis. With its labyrinthine streets and neoclassical architecture, Plaka has been known as the "Neighborhood of the Gods". Your walk can end in one of the numerous restaurants, tavernas or coffee shops in the area. Monastiraki on the other hand is known for its multicolored ambience and flea market.

Plaka and Monastiraki are only 10' away from your hotel, by taxi. The taxi will cost approximately 5,00€ -7,00€.

SOME SUGGESTIONS FOR DINING IN THE AREA:

- ✓ Melina
<http://www.bestofrestaurants.gr/attiki/athina/sites/restaurants/melina/?l=en>



- ✓ Psaras
http://www.bestofrestaurants.gr/attiki/athina/sites/restaurants/palia_taverna_toy_psara/
- ✓ 360°
<http://www.three-sixty.gr/>
- ✓ Kuzina
<http://www.kuzina.gr/en/>
- ✓ Bairaktaris Tavern
<http://www.bairaktaris.gr/index.php/en/>

WEDNESDAY, 16 DECEMBER, 2015			
08:00	REGISTRATION/WELCOME COFFEE	Faidra / Parthenon rooms	
08:30	Opening: Welcome and Introduction Dr. Nils Røkke (SINTEF, Norway) & Prof. Michael Fairweather (University of Leeds, UK)	Hedra meeting room	
08:40	Plenary Lecture 1: Status of International Standardisation on CO₂ Transportation Dr. Achim Hilgenstock (Hilgenstock Consulting, Germany) Chair: Dr. Marit Mazzetti (SINTEF, Norway)		
Session 1: Transport & Safety Chair: Dr. Marit Mazzetti (SINTEF, Norway)			
09:20	An Overview of the CO ₂ QUEST Project Haroun Mahgerefteh (UCL, UK)		
09:30	Design and Application of a Large-scale Experimental Pipeline for Studying the Release and Dispersion Characteristics of CO ₂ in Different Phase States Xingqing Yan (DUT, China)		
09:50	High Pressure CO ₂ CCS Pipelines: Comparing Dispersion Models with Multiple Experimental Datasets Chris Wareing (University of Leeds, UK)		
10:10	On Simulation of Dynamic Brittle Fracture of CO ₂ Pipeline Using Coupled Fluid–structure Modelling Approach Reza Hojjati-Talemi (OCAS, Belgium)		
10:30	Predicting the Atmospheric Dispersion of Carbon Dioxide from A Buried Ruptured Pipeline Jennifer Wen (University of Warwick, UK)		
10:50	COFFEE BREAK		Faidra / Parthenon rooms
Session 2: Transport & Safety Chair: Prof. Haroun Mahgerefteh (UCL, UK)			Hedra meeting room
11:10	Techno-economic Analysis of Gas Purification for CO ₂ Transport in Pipeline Networks and Injection for Storage Evgenia Mechleri (Imperial College London, UK)		
11:30	Impact of Impurities in CO ₂ Streams on Compression Strategies for Carbon Capture and Sequestration Sergey Martynov (UCL, UK)		
11:50	Computationally Efficient Simulation of Two-phase Flows of CO ₂ Mixtures Solomon Brown (UCL, UK)		
12:10	LUNCH	Faidra / Parthenon rooms	
12:50	Plenary Lecture 2: CO₂ Transport and Safety - An Industrial Perspective Mr. Michael Drescher (Statoil R&D, Norway) Chair: Dr. Evgenia Mechleri (Imperial College London, UK)	Hedra meeting room	



Session 3: Process Optimisation and Techno-economic Considerations Chair: Dr. Evgenia Mechleri (Imperial College London, UK)		Hedra meeting room
13:30	Highlights of the IMPACTS Project – Ambition, Scope and Main Findings Marit Mazzetti (SINTEF, Norway)	
13:50	IMPACTS Recommendations for Safe and Efficient Handling of CO ₂ with Impurities Amy Brunsvold (SINTEF, Norway)	
14:10	The IMPACTS Toolbox for the Design and Operation of CCS Systems Filip Neele (TNO, The Netherlands)	
14:30	Techno-economic Evaluation on the Effects of Impurities for Conditioning and Transport of CO ₂ by Pipeline Geir Skaugen (SINTEF, Norway)	
14:50	Impacts of Impurities on CO ₂ Transport and Storage Heike Ruetters (BGR, Germany)	
15:10	Techno-Economic Analysis of CO ₂ Quality Impact on CCS Chains Charles Eickhoff (Progressive Energy Ltd., UK)	
15:30	COFFEE BREAK	Faidra / Parthenon rooms
Session 4: Process Optimisation and Techno-economic Considerations Chair: Dr. Halvor Lund (SINTEF, Norway)		Hedra meeting room
15:50	Operational Flexibility of CO ₂ Transport and Storage James Craig (IEAGHG, UK)	
16:10	The Multi-period Optimisation of Full CCS Chain for Flexible Operation: From a Gas-fired Power Station to Injection/Storage Evgenia Mechleri (Imperial College London, UK)	
16:30	CO ₂ Purity from Different Carbon Capture Applications and Associated Cost and Performance Richard Porter (UCL, UK)	
16:50	Assessment of CO ₂ Enhanced Oil Recovery Projects through Process Modelling Adekola Lawal (Process Systems Enterprise Ltd., UK)	
17:10	Quantification of the Water-Carbon-Energy Nexus for Carbon Negative Electricity Generation Mathilde Fajardy (Imperial College London, UK)	
17:30	CLOSE	

COCKTAIL DINNER

20:00 – 22:00: Cocktail dinner at the *Grande Balcon*



THURSDAY, 17 DECEMBER, 2015		
08:00	REGISTRATION/WELCOME COFFEE	Faidra / Parthenon rooms
08:30	Plenary Lecture 3: Fracture Propagation in a CO₂ Pipeline – An Operator’s Perspective Russell Cooper (National Grid, UK) Chair: Dr. Amy Brunsvold (SINTEF, Norway)	Hedra meeting room
Session 5: Thermophysical Properties Chair: Dr. Amy Brunsvold (SINTEF, Norway)		
09:10	Thermodynamic Properties of a CO ₂ -rich Mixture CO ₂ +CH ₃ OH in Conditions of Interest for CCS Technology and Other Applications Sofía Blanco (UNIZAR, Spain)	
09:30	Experimental Speed of Sound in CO ₂ -rich Mixtures with Methanol. Extrapolation to Pure CO ₂ Javier Fernández López (UNIZAR, Spain)	
09:50	Investigation of Models for Prediction of Viscosity Properties for CO ₂ Mixtures Jacob Stang (SINTEF, Norway)	
10:10	Modeling of CO ₂ Solubility in Single and Mixed Electrolyte Solutions Using Statistical Associating Fluid Theory Ioannis Economou (Texas A&M University, Qatar)	
10:30	Development of a Novel Experimental Apparatus for Hydrate Equilibrium Measurements Panagiotis Kastanidis (NCSR Demokritos, Greece)	
10:50	COFFEE BREAK	Faidra / Parthenon rooms
Session 6: Thermophysical Properties Chair: Prof. Ioannis Economou (Texas A&M University, Qatar)		Hedra meeting room
11:10	Ionic Liquids for CO ₂ Capture using Molecular Simulation: Bulk and Permeability Properties Niki Vergadou (NCSR Demokritos, Greece)	
11:30	Simulation of Two-Phase Flow of CO ₂ Mixtures: Comparing Cubic and Reference Equations of State Halvor Lund (SINTEF, Norway)	
11:50	Iolicap Project Results George Romanos (NCSR Demokritos, Greece)	
12:10	Vapour-liquid Equilibrium Data for the Carbon Dioxide and Oxygen (CO ₂ +O ₂) System at 6 Isotherms Between the Freezing Point and Critical Temperature of CO ₂ Jacob Stang (SINTEF, Norway)	
12:30	Experimental Work at RUB and Tsinghua and a New Model Describing Thermodynamic Properties of CO ₂ -rich Mixtures Roland Span (Ruhr-Universität Bochum, Germany)	
12:50	Modeling Solid–Fluid Equilibria with Application to CO ₂ Mixtures Ilias Nikolaidis (NCSR Demokritos, Greece)	



13:10	LUNCH	Faidra / Parthenon rooms
13:50	Plenary Lecture 4: CCS Developments in North America Dr. Greeshma Gadikota (University of Columbia, USA) Chair: Dr. Filip Neele (TNO, The Netherlands)	Hedra meeting room
Session 7: Storage Chair: Dr. Filip Neele (TNO, The Netherlands)		
14:30	Reactive Transport Simulations of an Impure CO ₂ Flue Gas Injection into a Saline Aquifer on a 2D Reservoir Scale Dorothee Rebscher (BGR, Germany)	
14:50	Analysing the Effect of Impurities in the CO ₂ Stream Injected on Fractured Carbonates Miguel Angel Delgado (CIUDEN, Spain)	
15:10	Effect of SO ₂ Co-injection on CO ₂ Storage Marielle Koenen (TNO, The Netherlands)	
15:30	Comparison of Different Numerical and Modelling Approaches for Implementing SO ₂ as a CO ₂ Flue Gas Impurity in Geochemical Simulations in Saline Sandstone Aquifers Dorothee Rebscher (BGR, Germany)	
15:50	Thanks and End of Conference Haroun Mahgerefteh (UCL, UK)	
16:00	CLOSE	

POSTERS
Potentiodynamic Anodic Polarisation for the Corrosion Study of Stainless Steel 304 and Ion in Aqueous Amine Solvents Paraskevi Gkanavara (Imperial College London, UK)
An Analytical Model for Blowdown of Pressurised CO ₂ Pipelines Wentian Zheng (UCL, UK)
TREND – A Software Package Providing Thermophysical Properties for the CCS community Stefan Herrig (Ruhr-Universität Bochum, Germany)
CO ₂ Capture and Purification Technology with Selective Removal of NO _x and SO ₂ Shaoyun Chen (DUT, China)
Simulation of Transient Flow in CCS Pipelines with Intermediate Storage Nor Daud (UCL, UK)
Investigating the Corrosion and Surface Passivation of Carbon Steel in Amine Blends Louis Yu (Imperial College London, UK)
Choice of Benchmark CCS Chains for Illustrating CO ₂ Quality Issues Charles Eickhoff (Progressive Energy Ltd., UK)
The European CCS Laboratory Infrastructure ECCSEL Paris Klimantos (NTNU, NO)



FOR YOUR EVENING, WE PROPOSE...

Kolonaki or downtown Athens, where there is plenty of choice for dinner and drinks.

The longest drive by taxi – if needed - is about 15' away from your hotel and the cost will be approximately 4,00€ -7,00€.

SOME SUGGESTIONS FOR DINING AND DRINKS IN THE AREA:

- ✓ Galaxy Bar, Hilton Athens, http://www.hiltonathens.gr/en/dining_and_bars.html
- ✓ A for Athens, <http://aforathens.com/index.php/pages/page/top-floor>
- ✓ Tratorria Vezene, <http://vezene.gr/>
- ✓ Elaia Tavern, <http://www.bestofrestaurants.gr/attiki/athina/sites/restaurants/elaia?!=en>
- ✓ Vrettos Plaka Bar, <https://www.facebook.com/brettos.plaka>
- ✓ The 7 Jockers Bar, <https://www.facebook.com/pages/The-7-Jokers/118916004852707>
- ✓ Baba au Rum Bar, <https://www.facebook.com/pages/Baba-Au-Rum/198869453472175>



AFTER THE WORKSHOP...

Please contact FYE for any of the following proposals of your choice, at least a week prior to your arrival to Athens.

A guided tour of the city

A 4 hours guided tour that will take you back in the golden age of the 5th century B.C. and will walk you through the later Byzantium, Ottoman and modern eras of Athens. The tour includes some of the most important museums of the world, such as the Acropolis Museum and the Archeological Museum.

Rib adventure

Depending on the weather, an exciting Rib Safari to the Saronic Gulf, offering you the opportunity to visit some of the most well-known Greek islands and taste excellent Greek cuisine.

Minimum participation 2 people

Sailing

Depending on the weather, an exciting activity and a unique opportunity to enjoy the famous Greek waters. Sailing through the Saronic Gulf will allow you to relax and let your spirit free, while you will be able to enjoy lunch in one of the nearby islands.

Minimum participation 15 people

A weekend break on a Greek island

A one night's stay in famous Hydra, Spetses or Aegina islands. Your summer holidays can start from one of these famous islands, only within a maximum of 2 hours distance from Athens.

Contact information:

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ABOUT ATHENS...

www.thisisathens.org

Surrounded by a lining of stunning seas and mountains, Athens is filled with gems just waiting to be discovered. The capital of Greece is located at the crossroad of three continents and has an overall population of close to four million. Athens features history, culture and welcoming - hospitable people who will make you feel at home.

Athens' mild weather conditions and its friendly transportation network will prompt you to visit world-class cultural attractions, numerous museums and archeological sites, while diverse entertainment choices and hundreds of restaurants are bound to satisfy every taste.

History unfolds with every step: from the Parthenon atop the Acropolis, to the Temple of Poseidon at Cape Sounion, on the tip of Attica. City highlights include: the Odeon of Herodes Atticus, Hadrian's Arch, The Temple of Olympian Zeus, The Ancient Agora, the Tomb of the Unknown Soldier and the Panathenaic Stadium. Don't miss the chance to visit the much acclaimed Acropolis Museum and the National Archaeological Museum. Athletic types put on you sneakers or trekking attire and head to the top of Lycabettus Hill for a spectacular view. Alternatively, enjoy a cocktail or a delicious meal at one of the city's many strikingly chic rooftop venues.

Due to its ideal location, Athens is only 2 hours away from one of Greece's finest ski resorts and only 2 hours away from some of the most picturesque and popular Greek islands.

FYE – For Your Event can organize your city tour or your weekend getaway based on your preferences.

