






Programme

Sunday 17 May – Thursday 21 May

Maritim Congress Center

Sunday	
15.00–20.00	Registration in the Foyer
19.00–22.00	Welcome reception on the Terrace – hosted by the Federal Ministry of Economics and Technology and the Saxony State Ministry for Economic Affairs and Labour

Monday	
8.30–09.00	Grosser Saal – Opening Ceremony and Welcoming Addresses by Jürgen-Friedrich Hake, Forschungszentrum Jülich, and Prof. Bernd Meyer, TU Bergakademie Freiberg
09.00–10.00	Grosser Saal – Keynote Session I – Chair: Adolf Aumüller

Address by Jochen Homann, State Secretary, Federal Ministry of Economics and Technology, Germany		Mr. Jochen Homann serves as State Secretary at the German Federal Ministry of Economics and Technology since February 2008. His areas of responsibilities include energy policy, industrial policy and technology policy. Before 2008 Mr. Homann filled different positions in the Ministry and worked at several institutions such as the Federal Chancellery and the Permanent Representation of the Federal Republic of Germany to the European Community in Brussels.
Address by Nobuo Tanaka, Executive Director, International Energy Agency		Mr. Nobuo Tanaka took over as Executive Director of the IEA on 1 September 2007. He has extensive national government and international experience within the Ministry of Economy, Trade and Industry in Tokyo, the Embassy of Japan in Washington, D.C. and the OECD. Mr. Tanaka was responsible for Japan's involvement with the IEA and the G7 Energy Ministers' meeting during the second oil crisis, helped establish the comprehensive energy policy of Japan, oversaw the implementation of Japan's international nuclear energy policy and co-coordinated domestic environment and energy policy during the Kyoto COP3 negotiation. He served as a Minister for Industry, Trade and Energy at the Embassy of Japan in Washington, D.C from 1998 to 2000. Prior to joining the IEA, Mr. Tanaka was Director for Science, Technology and Industry at the OECD. Mr. Tanaka has a degree in Economics from the University of Tokyo and an MBA from Case Western Reserve University in Cleveland, Ohio. He and his wife, Gloria, have two children.
Address by Heinz Hilbrecht, Director 'Security of Supply and Energy Markets', DG TRÉN, European Commission		Heinz Hilbrecht is, since April 2006, director for "Security of Supply and Energy Markets" within the Directorate General for Energy and Transport of the European Commission. His Directorate developed the Commission's Strategic Energy Reviews of January 2007 and November 2008 outlining a common approach for the energy policies of the Union, and more specifically, also in November 2008, a green paper for the development of trans-European energy infrastructures, a report on security of gas supply, and a revision of the oil stocks directive. His directorate is also responsible for the 'Third Package' for the internal gas and electricity markets, which is now passing the legislative process in European Parliament and Council.

CCT2009 is being held under the patronage of the German Federal Ministry of Economics and Technology



organised by IEA Clean Coal Centre, Forschungszentrum Jülich and the IEC – Institute of Energy Process Engineering and Chemical Engineering at TU Bergakademie Freiberg



with support from the Technical University of Dresden



and sponsorship from Vattenfall, Saxony State Ministry for Economic Affairs and Labour, RWE, VGB and Siemens



SPECIAL INVITATION

The Saxony State Ministry for Economics and Labour invites all delegates to a concert of music for trumpet and organ in the Frauenkirche on Monday 18 May from 21:00 until 22:00.


Entrance is through Door F from 20:30. Your conference badge is your ticket for this event.



Monday's Programme

08.30–09.00 Grosser Saal – Opening Ceremony and Welcoming Addresses by Jürgen-Friedrich Hake, Forschungszentrum Jülich, and Prof. Bernd Meyer, TU Bergakademie Freiberg				
09.00–10.00 Grosser Saal – Keynote Session I – Chair: Adolf Aumüller Address by Jochen Homann, State Secretary, Federal Ministry of Economics and Technology, Germany Address by Nobuo Tanaka, Executive Director, International Energy Agency Address by Heinz Hilbrecht, Director 'Security of Supply and Energy Markets', DG TREN, European Commission				
10.00–17.30 Saal 4 Posters (see board outside Saal 4)				
10.00–10.30 Coffee Break in the Foyer and Saal 4				
10.30–12.10	Grosser Saal Gasification Technologies Chair: Frank Hanneman	Saal 1 IGCC – Experience and Progress Chair: Kelly Thambimuthu	Saal 2 Carbon Capture Issues Chair: Barry McColl	
10.30–10.50	The CCG® technology of CHOREN / Dr. Christoph Kiener - CHOREN Industries GmbH [Germany]	ELCOGAS: R&D activities towards zero emissions IGCC plants / Mr. Francisco Garcia - ELCOGAS, S.A. [Spain]	CO ₂ capture ready plants / Mr John Davison - IEA Greenhouse Gas R&D Programme [United Kingdom]	
10.50–11.10	PRENFLO PSG and PDQ - based on decades of gasification lessons learned / Dipl.-Ing. Karsten Rick Radtke - Uhde GmbH [Germany]	Technology advances in IGCC with CCS / Dr. Mark Prijs - Shell Global Solutions [Netherlands]	Social acceptance of carbon capture and storage in Germany / Dr. Diana Schumann - Forschungszentrum Juelich [Germany]	
11.10–11.30	Outline of options for waste liquidation through gasification / Ph.D. Petr Mika - Sokolovska uhelna, pravni nastupce, a. s. [Czech Republic]	Towards 2nd generation of IGCC plants: Nuon Magnum multi-fuel power plant / Robert de Kler - Nuon [Netherlands]	CCS in the United States 1998-2008: from resistance to acceptance to support / Ms. Naomi Pena - Joanneum Research [Austria]	
11.30–11.50	Lurgi's FBDB gasification - recent developments and project updates / Max-Michael Weiss - Lurgi GmbH [Germany]	TECO to today: an IGCC design improvement case study / Klaus Payrhuber - GE Energy [Austria]	Emission trading; incentive or obstacle to funding of carbon capture and storage demonstration projects / Mr John Kessels - IEA Clean Coal Centre [United Kingdom]	
11.50–12.00		17 years of experience gained from three gasification plants operating in Italy / Mr. Vincenzo Fabio Cicotosto - Saipem [Italy]	Application of possible efficiency upgrades to existing coal-fired power plants / Ms Deborah Adams - IEA Clean Coal Centre [United Kingdom]	
12.10–13.40 Lunch in Saal 5				
13.40–15.20	Grosser Saal Gasification – Experimental Investigations Chair: Giorgio Cau	Saal 1 IGCC – Engineering and Economic Evaluation Chair: Hans-Joachim Meier	Saal 2 XtL Technologies Chair: Lesley Sloss	Saal 3 Combustion and Chemical Looping Chair: Franz Klemm
13.40–14.00	Research equipment for coal and ash/slag analyses at the IEC / Dipl.-Min. Mathias Klinger - TU Bergakademie Freiberg [Germany]	EPRI IGCC engineering and economic evaluations / Neville Holt - EPRI [United States]	An alternative route of coal to liquids (CTL) applying methanol to gasoline (MTG) technology / Max Heinritz-Adrian - Uhde GmbH [Germany]	Combustion characteristics of high ash South African coal reserves / Professor Raymond Everson - North-West University [South Africa]
14.00–14.20	Performance analysis of updraft coal gasifiers fed by oxygen with steam, CO ₂ or recirculated syngas mixtures / Ing Vittorio Tola - Department of mechanical Engineering, University of Cagliari [Italy]	IGCC power plants with and without CCS - developments to meet market needs / Juergen Karg - Siemens AG Energy Sector [Germany]	From coal gas to liquid product. The Topsoe TIGAS technology / Mr Poul Erik Højlund Nielsen - Haldor Topsoe A/S [Denmark]	Combustion simulations of predried Greek lignite at experimental and industrial scale facilities / Michalis Agraniotis - National Technical University of Athens [Greece]
14.20–14.40	Linking laboratory scale gasification data with coal performance in a pilot scale gasifier / Dr David Harris - CSIRO Energy Technology [Australia]	Large scale CCS demonstration - status and outlook of RWE's 450 MW IGCC project / Werner Renzenbrink - RWE Power AG [Germany]	Technical and economic assessment of a small scale steam hydrogasification process with Fischer-Tropsch liquids facility with a coal-wood feedstock / Dr Chan Seung Park - University of California, Riverside [United States]	Syngas combustion by spray-dried NiO oxygen carrier / Mr. Jeom-In Baek - Korea Electric Power Research Institute [Korea, Republic of]
14.40–15.00	Investigation of trace compound formation in a partial oxidation process / Philipp Brüggemann - TU Bergakademie Freiberg [Germany]	Project results of COORIVA - constructability investigations on a German reference IGCC with CO ₂ -capture for 2015 / Dipl.-Ing. Martin Graebner - IEC - TU Bergakademie Freiberg [Germany]	High integrative, CO ₂ negative, high efficient power generation from ash rich biomass in power plants of 10 MW and coupled with production of algae based bio oils as well as black earth (dark soil) avoiding effluents at Hainhaus/Odenwald / Prof. Dr. Andreas Hornung - Aston University [United Kingdom]	Behaviour of ilmenite as oxygen carrier in chemical-looping combustion / Dipl. Ing Ana Cuadrat - Instituto de Carboquimica [Spain]
15.00–15.20	Experimental tests in the Sotacarbo laboratory scale coal-to-hydrogen plant / Dr. Alberto Pettinau - Sotacarbo S.p.A. [Italy]		The scientific payoffs and their applications in direct coal liquefaction / Mr Xiaosu Zhu - Coal Liquefaction Division, Beijing Research Institute of Coal Chemistry [China]	Continuous long-term operation experience with 50 kWth chemical-looping combustor / Dr. Ho Jung Ryu - Korea Institute of Energy Research [Korea, Republic of]
15.20–15.50 Coffee Break in the Foyer and Saal 4				
15.50–17.50	Grosser Saal Biomass- and Co-gasification Chair: Steffen Krzack	Saal 1 IGCC – Concept Studies Chair: Chris Higman	Saal 2 Carbon Capture - Engineering and Economic Evaluation Chair: Debo Adams	Saal 3 National Research and Development Programmes Chair: Dubravka Bulut
15.50–16.10	Entrained-flow gasification to convert biomass into synthesis gas / Matthias Rudloff - CHOREN Industries [Germany]	The impact of concept simplification on performance and economics of IGCC power plants with carbon capture (IGCC-CC) / Mathias Rieger - FEC-Freiberg Energy Consultants GmbH [Germany]	Optimized post combustion capture technology for power plants / Torsten Stoffregen - Linde-KCA-Dresden GmbH [Germany]	CCS R&D, demonstration and large scale projects in Norway / Trygve Riis - The Research Council of Norway [Norway]
16.10–16.30	Syngas production from biomass / Ir. Ruben Smit - Energy research Centre of the Netherlands [Netherlands]	Simulation of a base case for future IGCC concepts with CO ₂ capture / Dipl.-Ing Christian Kunze - TU München [Germany]	Drivers and challenges for flexible operation of pulverised coal power plants with CCS / Ms Hannah Chalmers - Imperial College London [United Kingdom]	COORETEC: The German R&D-Initiative for Clean Coal Technologies / Dr. Arne Hoell - BMWi [Germany]
16.30–16.50	Steam hydrogasification based conversion of carbonaceous feedstocks using the Viresco technology / Mr. Jim Guthrie - Viresco Energy LLC [United States]	Hydrogen and electricity co-production schemes based on gasification processes with carbon capture and storage / PhD Eng. Calin-Cristian Cormos - Babes-Bolyai University, Faculty of Chemistry and Chemical Engineering [Romania]	Retrofitting study of a 350 MW hard coal fired power plant with post combustion capture; optimal integration pathways for minimizing the energy penalty / Dr. Gerald Kinger - EVN AG [Austria]	U.S. Department of Energy Carbon Sequestration R&D Program overview / Mr. William Fernald - U.S. Department of Energy [United States]
16.50–17.10	Pressurised gasification of coal and biomass for the production of H ₂ -rich gas / Dr Fernando Rubiera - Instituto Nacional del Carbón (CSIC) [Spain]	BO2-technology for biomass upgrading into solid fuel - an enabling technology for IGCC and gasification-based BiL / Dr. Jaap Kiel - ECN [Netherlands]	Life cycle assessment of pulverized coal power plants with and without CO ₂ post-combustion capture, transport and storage / Valentina Giovannangelo - Univaq-Dimeg [Italy]	CCS R&D in France / Bernard Frois - CEA [France]
17.10–17.30	Investigations about cofiring of herbaceous biomass in an integrated gasification combined cycle / Johannes Judex [Switzerland]			CO ₂ storage in Germany - the R&D programme GEOTECHNOLOGIEN / Dr. Ludwig Stroink - GEOTECHNOLOGIEN Co-ordination Office [Germany]
21.00–22.00 Concert of music for Trumpet and Organ at the the Frauenkirche. Enter by Door F, from 20.30, sponsored by Freistaat Sachsen Staatsministerium für Wirtschaft und Arbeit				

Tuesday's Programme

08.30–10.00 Grosser Saal – Keynote Session II – Chair: Antonio Pflüger				
Geological storage of CO ₂ : current status and issues to be resolved / Mr John Gale - IEA Greenhouse Gas R&D Programme [United Kingdom] Carbon capture and storage: a solution for sustainable energy supply / Dr Nicolas Vortmeyer - Siemens Energy [Germany] Advances in materials research for CCT / Dr Lorenz Singheiser - Forschungszentrum Jülich [Germany]				
10.00–15.50 Saal 4 Posters (see board outside Saal 4)				
10.00–10.30 Coffee Break in the Foyer and Saal 4				
10.30–12.10	Grosser Saal Gasification – CFD and Research Requirements Chair: Peter Seifert	Saal 1 Gas Treatment – Upgrading Chair: Giampaolo Mura	Saal 2 Carbon Capture Technologies (I) Chair: Burt Beasley	Saal 3 Oxyfuel Combustion (I) Chair: Hubert Höwener
10.30–10.50	Investigations on high temperature gasification and gas cleaning - The research project HotVeGas / Prof. Dr.-Ing. Hartmut Spliethoff - TU München [Germany]	A compact granular bed particle filter for high temperature synthesis gases / Kavitha Pathmanathan - Norwegian University of Science and Technology [Norway]	Overview on 1st and 2nd generation coal-fired membrane power plants (with and without turbo machinery in the membrane environment) / Dr. Ernst Riensche - Forschungszentrum Jülich (FZJ/IEF-3) [Germany]	Commercial demonstration of oxy-coal combustion clean power technology / Mr. Nicolas Perrin - Air Liquide [France]
10.50–11.10	Numerical modelling of partial oxidation processes / Markus Rehm [Germany]	Novel filtration system and regime for removing particulates from gas at high temperatures and pressures / Dr Sunil Sharma - CSIRO [Australia]	Steam reactivation of CaO-based natural sorbents applied to a carbonation/calcination loop for CO ₂ capture / Dr. Gemma Grasa - Instituto de Carboquímica (CSIC) [Spain]	ADECOS II - advanced development of the coal-fired oxyfuel process with CO ₂ separation / Prof. Dr.-Ing. Michael Beckmann - Lehrstuhl für Verbrennung, Wärme- und Stoffübertragung; Technische Universität Dresden [Germany]
11.10–11.30	Two-dimensional CFD model of air-blown coal updraft gasifier / Ph.D. Michele Vascellari - Department of Mechanical Engineering Cagliari [Italy]	Valorisation of synthesis gas from biomass gasification - the Piteå BioDME pilot plant / Dr Esben Laue Sørensen - Haldor Topsøe A/S [Denmark]	Minimising the regeneration heat duty of post-combustion CO ₂ capture processes by wet chemical absorption: the misguided focus on low heat of reaction in the search for new solvents / Dipl.-Ing. Jochen Oexmann - Hamburg University of Technology [Germany]	The OXYCOAL-AC process: component behavior and thermodynamic efficiency / Dipl.-Ing. Hannes Stadler - Lehrstuhl für Wärme- und Stoffübertragung, RWTH Aachen [Germany]
11.30–11.50	Coupling of ChemApp and OpenFOAM / Danny Messig [Germany]	Hot fuel gas cleaning in IGCC at gasification temperature / Dr. Michael Müller - Forschungszentrum Jülich GmbH [Germany]	Integration of a CO ₂ separation process in a coal fired power plant / Christina Stankewitz - TU Dortmund [Germany]	Is oxyfuel combustion an option for gas turbines? / Dr. Peter Kutne - Deutsches Zentrum fuer Luft- und Raumfahrt e.V. [Germany]
11.50–12.00	Mathematical model of the partial oxidation of coal particles for the modelling of synthesis gas production: VIRTUHCON / Dr. Petr A. Nikrityuk - Institute of Energy Process Engineering and Chemical Engineering, TU Bergakademie Freiberg [Germany]	Experimental investigation and numerical simulation of CO-to-CO ₂ shift conversion for enrichment in hydrogen of syngas from air-blown up-draft coal gasifiers / Stefano Murgia - Department of Mechanical Engineering, University of Cagliari [Italy]		Advancement of the CO ₂ compression and purification plant integrated in the oxyfuel technology / Dr. Nicole Schoedel - Linde AG - Linde Engineering Division [Germany]
12.10–13.40 Lunch in Saal 5				
13.40–15.20	Grosser Saal Gasification – Special Applications Chair: David Harris	Saal 1 Gas Treatment – Desulphurisation Chair: Andrew Minchener	Saal 2 Carbon Capture Technologies (II) Chair: Fernando Rubiera	Saal 3 Oxyfuel Combustion (II) Chair: Raymond Everson
13.40–14.00	Progress with underground coal gasification (UCG) / Mr Gordon Couch - IEA Clean Coal Centre [United Kingdom]	Stepwise extension of a gas cleanup for IGCC application / Lars Kirchner - Linde Engineering [Germany]	Redesigning the cold end of a lignite power station for CO ₂ capture / Trent Harkin - Cooperative Research Centre for Greenhouse Gas Technologies (CO2CRC) [Australia]	The BIOX Plant - a 100 kW CFB test plant for oxyfuel combustion - Design - Erection - 100-hour tests - Next steps / Dr. Ulrich Hohenwarter - Austrian Energy [Austria]
14.00–14.20	Experimental study on running of underground coal gasification power generation system / Prof. PhD. Chuantong LI - Nanjing Normal University [China]	RTI/Eastman warm syngas clean-up technology: integration in power and chemical production applications / Markus Lesemann [United States]	Laboratory investigations of polyamine solvents for CO ₂ -scrubbing from flue gases / Kevin Brechtel - Universitaet Stuttgart - IVD [Germany]	Sulphation of calcium-based sorbents in circulating fluidised beds under oxy-fuel combustion conditions / Dr. Francisco Garcia-Labiano - Instituto de Carboquímica (CSIC) [Spain]
14.20–14.40	Latrobe Urea Project - challenges posed from using lignite feedstock / Dr David Craze - Latrobe Fertilisers Limited [Australia]	Experimental tests on a high-temperature H ₂ S removal bench-scale system / engineer Caterina Frau - SOTACARBO [Italy]	Carbon adsorbents for post-combustion CO ₂ capture / Dr Cova Pevida - Instituto Nacional del Carbón (INCAR) - CSIC [Spain]	Performance of a fluidised bed gasifier under oxy-fuel conditions / Nicolas Spiegl - Imperial College London [United Kingdom]
14.40–15.00	The operational experience and market potential investigation of coal gasification in Taiwan / Wei Cheng Chen - Industrial Technology Research Institute (ITRI) [Taiwan, Republic of China]	Sulphur capturing during a fixed-bed gasification process of coal / Mr Pat Skhonde - Sasol Technology R&D [South Africa]	Integration studies of post-combustion CO ₂ -capture process by wet chemical absorption into coal-fired power plant / Dipl.-Ing. Imo Pflaff - Hamburg University of Technology - Institute of Energy Systems [Germany]	Experimental investigations of combustion behaviour in various O ₂ /CO ₂ -atmospheres / Stephanie Tappe - Braunschweig University of Technology Cottbus [Germany]
15.00–15.20			Simulation and integration of a carbonate looping system for CO ₂ capture in existing power stations / Dr Ramón Múrrilo - CSIC [Spain]	Numerical simulation of pulverized coal oxy-combustion with exhaust gas recirculation / Ph.D. Michele Vascellari - Department of Mechanical Engineering Cagliari [Italy]
15.20–15.50 Coffee Break in the Foyer and Saal 4				
15.50–17.50	Grosser Saal Gasification – Fixed Bed and Ash Modelling Chair: Hartmut Spliethoff	Saal 1 Gas Treatment – Upgrading and Applications Chair: Nicole Schoedel	Saal 2 Carbon Capture Technologies (III) Chair: William Fernald	Saal 3 Oxyfuel Combustion (III) Chair: Stanley Santos
15.50–16.10	A simplified model of a fixed bed counter current gasifier / Prof. Giampaolo Mura - Università di Cagliari [Italy]	Investigation of potential alkali getters for gasification using a new high temperature pressurized simultaneous thermal analyzer (STA) / Franz Hauk - TU München [Germany]	Evaluation of an integrated post-combustion CO ₂ capture process for varying loads in a coal-fired power plant using monoethanolamine / Dipl.-Wirtsch.-I Sebastian Linnenberg - TU Hamburg-Harburg [Germany]	MEM-OXYCOAL - oxygen permeation membranes for coal-fired power plants / Professor Manfred Martin - RWTH Aachen University [Germany]
16.10–16.30	Thermodynamic modelling of the BGL-gasification process with particular consideration of alkali metals / Dipl.-Ing. Stefan Guhl - Technical University Bergakademie Freiberg, Institute of Energy Process and Chemical Engineering [Germany]	Development of halide removal sorbent for hot gas cleaning technology / Mr Makoto Nunokawa - Central Research Institute of Electric Power Industry [Japan]	Analysis of the attrition of a calcining limestone in a carbonation/calcination pilot plant to capture CO ₂ / Belén González - CSIC-INCAR Spanish Research Council [Spain]	Ceramic membranes for oxyfuel power plants / Michael Betz - Forschungszentrum Jülich GmbH [Germany]
16.30–16.50	Transient behavior of a fixed bed countercurrent gasifier: one dimensional modelling / M Brundu - Università degli studi di Cagliari [Italy]	Successful completion of the development and testing of a coal to fuel cell grade hydrogen technology package for New Zealand / Dr Robert S Whitney - CRL Energy [New Zealand]	Experimental studies on CO ₂ desorption from amine solutions / Paula Galindo Cifre - Universität Stuttgart [Germany]	Module design for MIEC membranes in OXYCOAL-AC / Dr.-Ing. Ewald M. Pflaff - Aachen University [Germany]
16.50–17.10	Thermodynamic equilibrium calculations and simulations of gasification processes with syngas cooling / Dipl.-Min. Katrin Reinke - TU Bergakademie Freiberg, IEC [Germany]	Experimental study assessment of mitigation of carbon formation on Ni/YSZ and Ni/CGO SOFC anodes operating on gasification syngas and tars / Mr. Joshua Mermelstein - Imperial College London [United Kingdom]	Evaluation of integration of flue gas scrubbing configurations with MEA for CO ₂ separation in a coal-fired power plant / Dipl.-Ing. Elizabeth Heischkamp - University of Duisburg-Essen / LUAT [Germany]	Oxyfuel combustion by means of high temperature membranes for air separation / Franz Beggel - RWTH Aachen [Germany]
17.10–17.30		Performance analysis of coal gasification processes integrated with high temperature fuel cells and gas turbine hybrid power plants / Ing Vittorio Tola - Department of mechanical Engineering, University of Cagliari [Italy]		Properties of dense ceramic membranes for energy conversion processes / Priv.-Doz. Dr. Michael Schroeder - Institute of Physical Chemistry, RWTH Aachen [Germany]
17.30–17.50		Fluidized bed methanation technology for improved production of SNG from coal / Dr. Serge M. A. Biollaz - Paul Scherrer Institut (PSI) [Switzerland]		
20.00–23.00 Conference Dinner, hosted by VATTENFALL 				

Wednesday's Programme

08.50–10.30	Saal 1 <i>International and Regional Perspectives</i> Chair: Rob Whitney	Saal 2 <i>Carbon Capture Technologies (IV)</i> Chair: Hannah Chalmers	Saal 3 <i>Oxyfuel Combustion (IV)</i> Chair: Alfons Kather
08.50–09.10	EPRI industry technology demonstration projects / Mr Jack Parkes - EPRI [United States]	A preliminary evaluation of post-combustion CO ₂ capture performance in a pilot plant test using mono-ethanolamine at a lignite-fired power station in Australia / Dr Yuli Artanto - CSIRO [Australia]	Impact of hot CO ₂ rich gases on steels / Dipl.-Ing. Daniela Huener - Federal Institute for Materials Research and Testing [Germany]
09.10–09.30	E.ON's strategy to a low carbon future / Dr.-Ing. Christian Folke - E.ON AG [Germany]	Modelling of total plants including gas washing using the simulation tool EBSILON®Professional / Dr. Reiner Pawellek - Evonik Energy Services GmbH [Germany]	Numerical simulation of a 1200 MWth pulverised fuel oxy-firing furnace / Dipl.-Ing. Jens Erfurth - Lehrstuhl für Wärme- und Stoffübertragung [Germany]
09.30–09.50	China's coal fired electric power sector challenges and opportunities / Dr Andrew Minchener - IEA Clean Coal Centre [United Kingdom]	Technical evaluation of CO ₂ compression and purification in CCS power plants / Mr. Reñzo Castillo - Forschungszentrum Jülich [Germany]	In-situ observation of the combustion of air-dried and wet brown coal / Dr Eleanor Binner - Monash University [Australia]
09.50–10.10	Pre-engineering study for a 700 deg C high efficient PC-power plant / Dipl.-Ing. Hans-Joachim Meier - VGB PowerTech e.V. [Germany]	The global comeback of coal-to-liquids (CTL) technologies - the impact of CCS on the economic and environmental performance of CTL / M.Sc. Daniel Vallentin - Wuppertal Institute for Climate, Environment, Energy [Germany]	Fate of sulphur in coal during oxyfuel combustion with recycled flue gas (review of the current state of understanding) / Dr. Stanley Santos - IEA Greenhouse Gas R&D Programme [United Kingdom]
10.10–10.30	ecoENERGY technology initiative demonstration projects / Mrs Dubravka Bulut - Natural Resources Canada [Canada]		
10.30–11.00 Coffee Break in the Foyer			
11.00–12.30 Grosser Saal – Keynote Session III and Closing Ceremony - Outlook – Chair: John Topper			
Clean Coal Technologies – securing the future for coal? / Dr Johannes Heithoff - RWE Power [Germany] Clean Coal Technologies – an IEA view on potentials and perspectives / Antonio Pflüger - International Energy Agency [France]			
12.30–14.00 Lunch in Saal 5			
14.00–16.00 Technical Visit TU Bergakademie Freiberg or Dresden University of Technology			

Thursday's Programme

09.00–14.30	Technical Visit Schwarze Pumpe 30 MW oxyfuel pilot plant
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