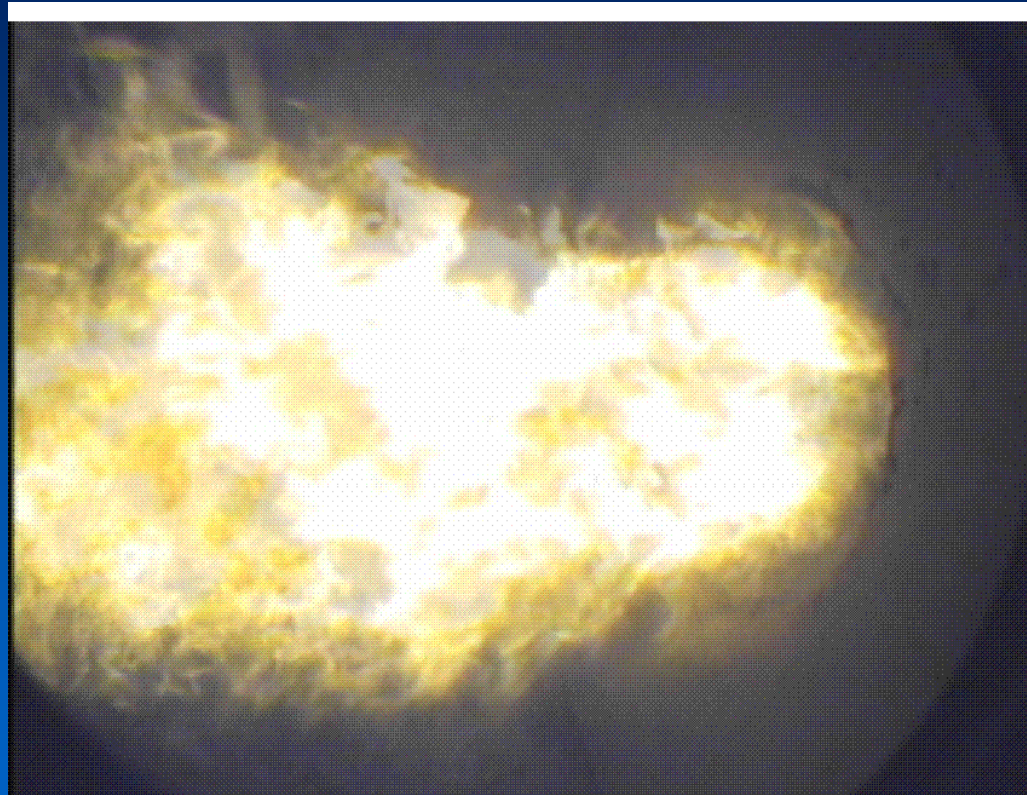


International Energy Agency Implementing Agreement on Clean Coal Sciences



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What is the IEA Clean Coal Sciences Agreement?

- **A Task shared implementing agreement**
- **A vehicle for the sharing of information and technology for the clean combustion of coal**
- **An enabler of international cooperation for the development of technologies for the clean combustion of coal**

How is it Delivered?

- **Through cooperative, task shared projects (Annex 1)**
- **Through cost shared projects (Annex 2, non currently but mechanism exists)**
- **Technical meetings, websites, technical exchanges etc.**

Typical Technical Session

Multiphase Flow Research Relevant to Coal Combustion, Edinburgh United Kingdom, 2004

Presentation	Author
The Work of the IEA Clean Coal Centre	Robert Davidson, IEA Clean Coal Centre
Spectroscopy for Flame Monitoring and Characterisation	Pat Hughes, CANMET Natural resources Canada
Reference Power Plant North Rhine-Westphalia	Hans-Joachim Meier, VGB PowerTech e.V
Assessment of Propensity for Blockages in Coal Handling Plant	Jin Ooi, University of Edinburgh
On-line Mass Flow Metering and Particle Sizing of Pulverized Coal	Gang Lu, University of Kent
Computational Modeling of Granular Solids: Single Phase and Multiphase Flow	Jin Ooi, University of Edinburgh
Tomography for Coal Combustion	Wuqiang Yang, University of Manchester
Vision Base Monitoring and Characterisation of Pulverised Coal Flames	Gang Lu, University of Kent

Current Members

- Australia
- Canada
- Denmark
- Germany
- Italy
- Netherlands
- South Africa
- Sweden
- United Kingdom
- United States
- Mexico
- Japan
- Greece (observer)
- Spain (expressed interest)

IEA-CCS Projects and Proposals

Table 1: CURRENT PROJECTS AND PROPOSALS

Annex I Category I and II Projects/Collaborations

No	Description	Country(s)	Status
3	Application of Laser Measurement Techniques to Coal Flames – Phase II	Canada United Kingdom	Ongoing
5	Effect of Coal Quality on NO _x Formation in Pressurized Fuel Boilers	United Kingdom	Proposal
7	Combustion of Low Calorific Gas	The Netherlands	Proposal
8	Co-Combustion of Steam Coals with Biomass, Waste and Low-Grade Coals	The Netherlands	Proposal
9	Improvements of Quantitative Mineralogy Through Scanning Electron Microscopy	US + 3 countries	Ongoing
10	Mathematical Modelling of Coal Flames (E. Chui, CANMET)	Canada + 5 countries	Ongoing
11	Coal Burning Research Survey	Canada, and Others	Ongoing
15	New Kinetic Models for the Prediction of Char Reactivity and Carbon Burnout	United States and others	Ongoing
16	Coal/Biomass Co-Firing R&D Prog. Phase I	United States	Proposal
17	Behaviour of coal minerals in Combustion and Gasification	Japan	Proposal
18	Development of a Database of Trace Element Emissions from Coal Fired Power Stations	Mexico	Proposal
19	Acoustics , Swirling Flow and Turbulence in a Gas Turbine Low Calorific Gas Flame	The Netherlands	Proposal

IEA-CCS Technical Sessions and Workshops

Meeting Date and Place	Technical Meeting Topic
April 19-20, 2007 Essen, Germany	Enabling Technologies for Clean Coal Combustion
Sept. 9, 2004, Edinburgh, Scotland	Multiphase Flow Research Relevant to Coal Combustion
Jan. 28-30, 2004 South Africa	Air Emission Standards and Emission Reduction Technologies
Oct. 24-25, 2002, Pisa Italy	Biomass Co-Firing and Coal Fired Power Generation
Nov. 6-8, 2001, Nanticoke Canada	Advanced Cycles for Coal Fired Power Generation
Nov. 14, 2000, Netherlands Novem Sittard	Co-firing Biomass and Coal
4 Nov. 1999, Japan Kitakyushu	Coal Combustion Technologies
Jan. 25, 1999, Netherlands Novem Sittard	Annex 2 Final meeting after writing 17 reports Annex 2 completed
Dec. 1998, Australia CSIRO Sydney,	Technical Sessions on Ash Transformations
Feb. 1998, Mexico Cuernavaca and Petacalco Generating Station	Technical Sessions on Ash Transformations

IEA-C CS Agreement Highlights Since Last EOTR

- Held 3 Technical sessions where over 30 papers were presented
- Developed the International Furnace Registry
 - Posted on interactive website (<http://www.ieafurnacesurvey.org>)
 - 8 Countries, 73 Listings
 - Updated Twice a Year
- Maintained the IEA-CCS Web Site (<http://iea-ccs.fossil.energy.gov/>)
 - Contains agreement summary, projects, point of contact and linkages ...
- MOU Signed between the IEA Clean Coal Sciences and the Bioenergy: Biomass Combustion and Co- firing Agreements
- South Africa signed the CCS agreement
- Greece has requested to join the CCS agreement

IEA-C CS Agreement Highlights

- **International Furnace Registry**
 - **Posted on Combustion-net website**
(<http://www.ieafurnacesurvey.org>)
 - **8 Countries, 73 Listings**
 - **Updated Twice a Year**
- **Web Site (<http://iea-ccs.fossil.energy.gov/>)**
 - **Contains agreement summary, projects, point of contact and linkages ...**
- **MOU Signed between the IEA Clean Coal Sciences and the Bioenergy: Biomass Combustion and Co- firing Agreements**
- **Greece has requested to join**