



IEA Greenhouse Gas R&D Programme



IEA Greenhouse Gas R&D Programme Update

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CSLF Technical Group – 16 Nov 2008





IEA Greenhouse Gas R&D Programme

- A collaborative research programme founded in 1991
- Aim: *Provide members with definitive information on the role that technology can play in reducing greenhouse gas emissions.*
- Producing information that is:
 - Objective, trustworthy, independent
 - Policy relevant but NOT policy prescriptive
 - Reviewed by external Expert Reviewers
 - Subject to review of policy implications by Members
- Activities: Studies (>120); R&D networks :- Wells, Risk, Monitoring, Oxy, Capture, Biofixation; Communications (GHGT9, IJGGC, etc); facilitating and focussing R&D and demonstration activities
- Funding approx 2 million €/year (2.6 million \$/year).



IEA Greenhouse Gas R&D Programme



Contracting Parties and Sponsor Organisations of IEA GHG

The image displays a world map with various logos of contracting parties and sponsor organizations of the IEA Greenhouse Gas R&D Programme. The logos are distributed across the map, representing global participation. Key organizations include:

- ALSTOM** (France)
- B&W** (Germany)
- BG GROUP** (Bulgaria)
- bp** (United Kingdom)
- ConocoPhillips** (USA)
- CEZ GROUP** (Czech Republic)
- Chevron** (USA)
- Eni** (Italy)
- EniTechnologie** (Italy)
- e-on** (Germany)
- EPRI** (USA)
- ExxonMobil** (USA)
- RWE** (Germany)
- REPSOL YPF** (Spain)
- Schlumberger** (France)
- Statkraft** (Norway)
- StatoilHydro** (Norway)
- TOTAL** (France)
- VATTENFALL** (Sweden)

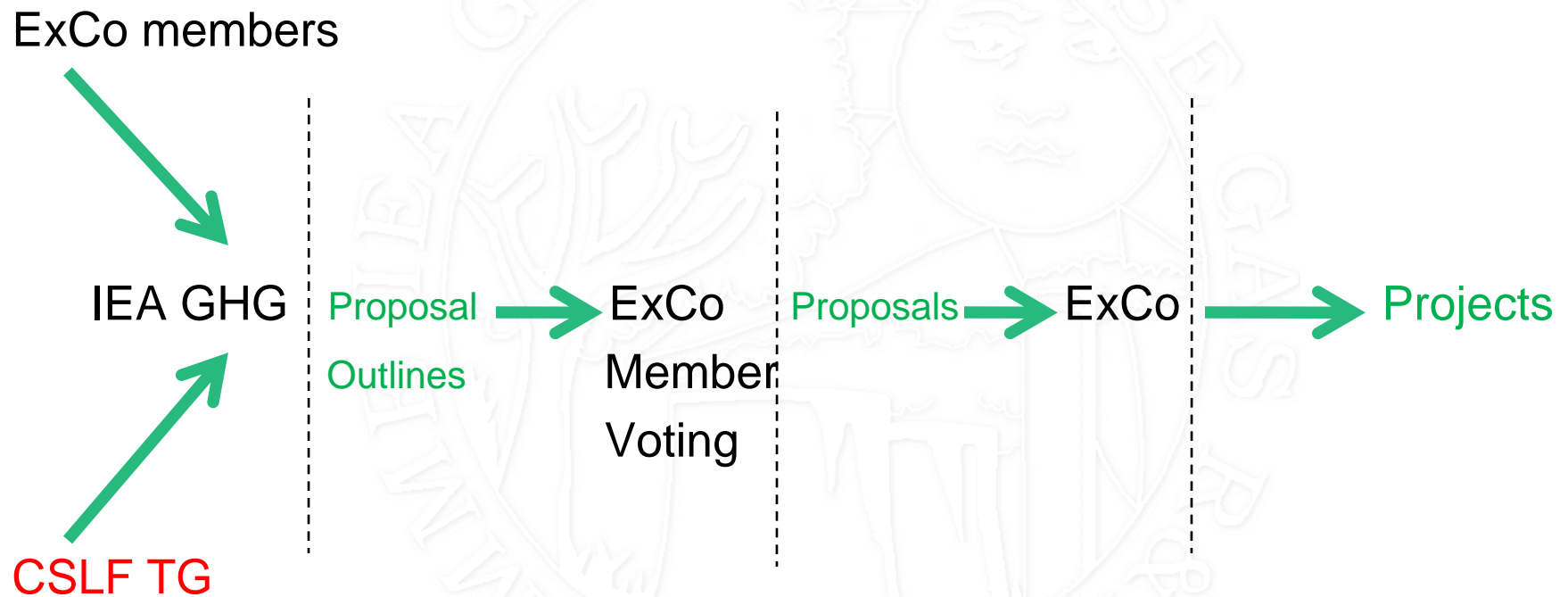


Arrangement between CSLF Technical Group and IEA GHG

- How CSLF TG/PIRT and IEA GHG will interact for mutual benefit through increased co-operation
 - Mutual representation of each at CSLF TG and IEA GHG ExCo (no voting)
 - Liaison with PIRT co-chairs to discuss potential activities or projects – two way process
 - Activities would require approval by ExCo or TG
 - Due reference to organisation providing the resource
- Endorsed at ExCo Oct07 and TG Jan08



IEA GHG – Project generation





Studies published since last CSLF TG

- Regional Assessment of CO₂ Storage – Indian subcontinent. BGS. Report 2008/2 (May 08)
- CO₂ Capture for Cement Industry – Motts. Report 2008/3 (Aug 08)
- Production of Hydrogen and Electricity with CO₂ capture – updated economic analysis. Foster Wheeler. Report 2008/9 (Aug 08)



Projects underway (1)

- Fuel Cells for CHP
 - CO2 Pipeline Costs
 - Removal of impurities from CO2
 - Assessment of subsea ecosystem impacts
 - CCS and CDM Impacts
 - Assessment criteria – TAG
 - Safety considerations for CCS
 - Novel approaches on capture
 - Improved Solvent Scrubbing
 - Aquifer Storage Development
 - Potential for storage in gas fields
 - Site Characterisation Criteria
- FZJ
AMEC/Gastec
Advantica
MBARI
ERM
EPRI
HSL
Innovaro
SINTEF
CO2CRC
Poyry
ARC



Projects underway (2)

- Long Term Integrity of Storage – Well Abandonment TNO
- Prospects for Storage of CO₂ in EOR ARI
- Best Practice Guidelines on Site Characterisation DNV
- CCS Life Cycle Analysis – Literature Review FZJ
- Use of Biomass with CCS – Combustion Processes FosterW
- What have we learnt to date (from large scale projects) IEAGHG
- **Storage Capacity Coefficients (CSLF)** EERC



Storage Capacity Coefficients (CSLF)

- Aim – to define series of coefficients to estimate storage capacity
- 6 tenders
- Energy and Environmental Research Centre, North Dakota
- Subsequently supported by US DOE
- Started Sep 08
- Report June 09
- Report will be made available to CSLF TG members



Projects in process

- Retrofit and repowering with CCS
- Capture of Lower Fractions of CO₂
- Building pipeline infrastructure
- Integration of Post Combustion CCS in Existing Industrial Sites
- Corrosion and Selection of Materials for CCS

34 ExCo approved new projects

- Quantification techniques for CO₂ leakage
- Incorporating future technological improvements in CO₂ capture plants
- Injection Strategies for CO₂ storage sites
- Water usage of power plant with CO₂ capture



Recent meetings

- IEA Regulators Network – 13-14 May, Paris, France
- Capture Network - 20-21 May, Vienna, Austria
- Financing CCS Projects – 28-29 May, New York, USA
- Joint Network meeting (Monitoring/Well/Risk) –11-13 June, New York, USA
- International Summer School - 25-29 Aug, Vancouver, Canada
- Environmental Impacts Leakage – 15-17 Sep, BGS, UK
- Oxy-combustion CO2 Purity – 22 Oct, Stockholm



Future meetings

- GHGT-9 - 17-19 Nov, Washington, USA
- Modelling Workshop (Storage) - 10-12 Feb 09, Paris, France
- Risk Network – 16-18 Apr 09, Melbourne, Australia
- ExCo - 20-21 Apr 09, Brisbane, Australia
- Well Integrity Network – 12-13 May 09, Calgary, Canada
- Monitoring Network – 2-4 June 09, Tokyo, Japan
- International Summer School – 24-29 Aug 09, Victoria, Australia
- ExCo - 7-9 Oct 09, Zurich, Switzerland
- GHGT-10 – 19-23 Sep 2010, Amsterdam, Netherlands

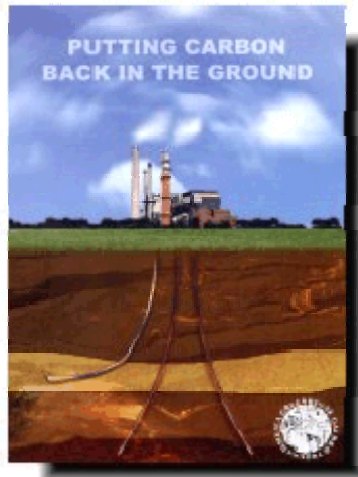
- Workshop on Environmental Impacts of Natural CO₂ Leakages – tbc
- CCS and Sustainable Development - tbc



IEA Greenhouse Gas R&D Programme

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- General - www.ieagreen.org.uk
- CCS - www.co2captureandstorage.info



GHGT-9

**16th – 19th November
2009**

Washington D.C.

www.mit.edu/ghgt9

www.ieagreen.org.uk