



# Launch of the GCCSI

## *International Architecture*

16 April, Canberra

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*Deputy Executive Director*  
*International Energy Agency*

# Overview

- **The IEA and its role**
- **CCS activities at the IEA**
- **Activities for G8**
- **Joint actions with the CSLF**
- **Collaboration with the CSLF and the GCCSI**
- **Conclusions**



# International Energy Agency



**Created in 1973; currently 28 Member Countries**

## Goals:

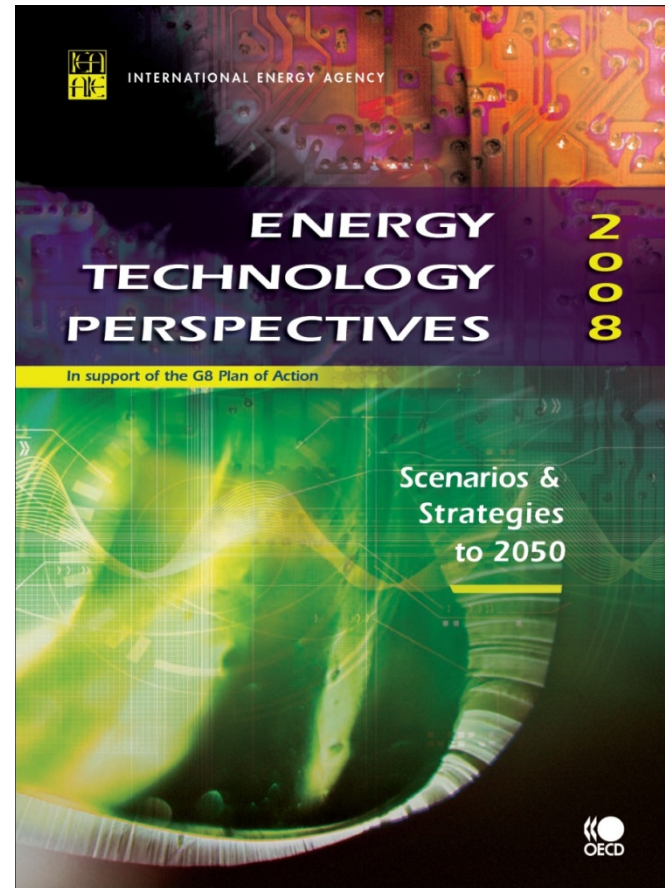
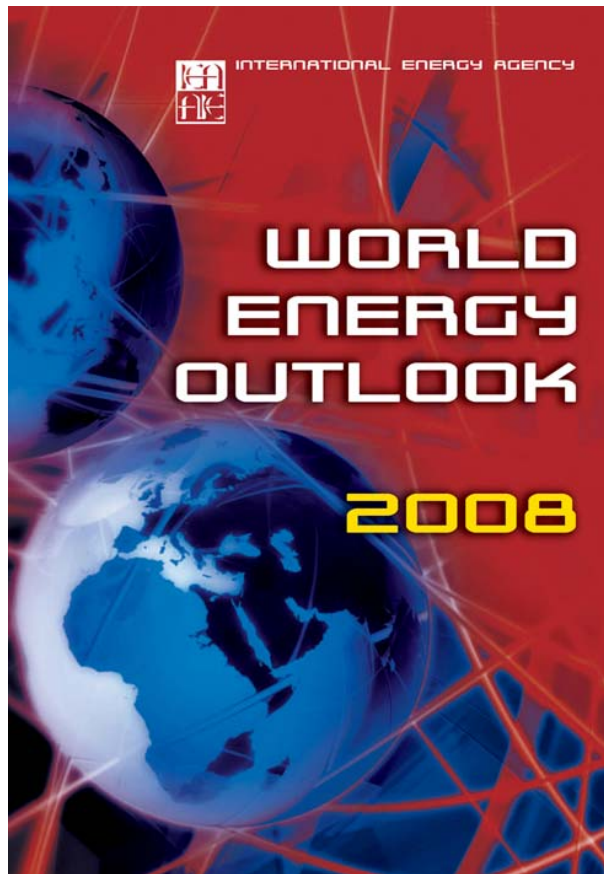
- energy security
- environmental protection
- economic growth

## Activities:

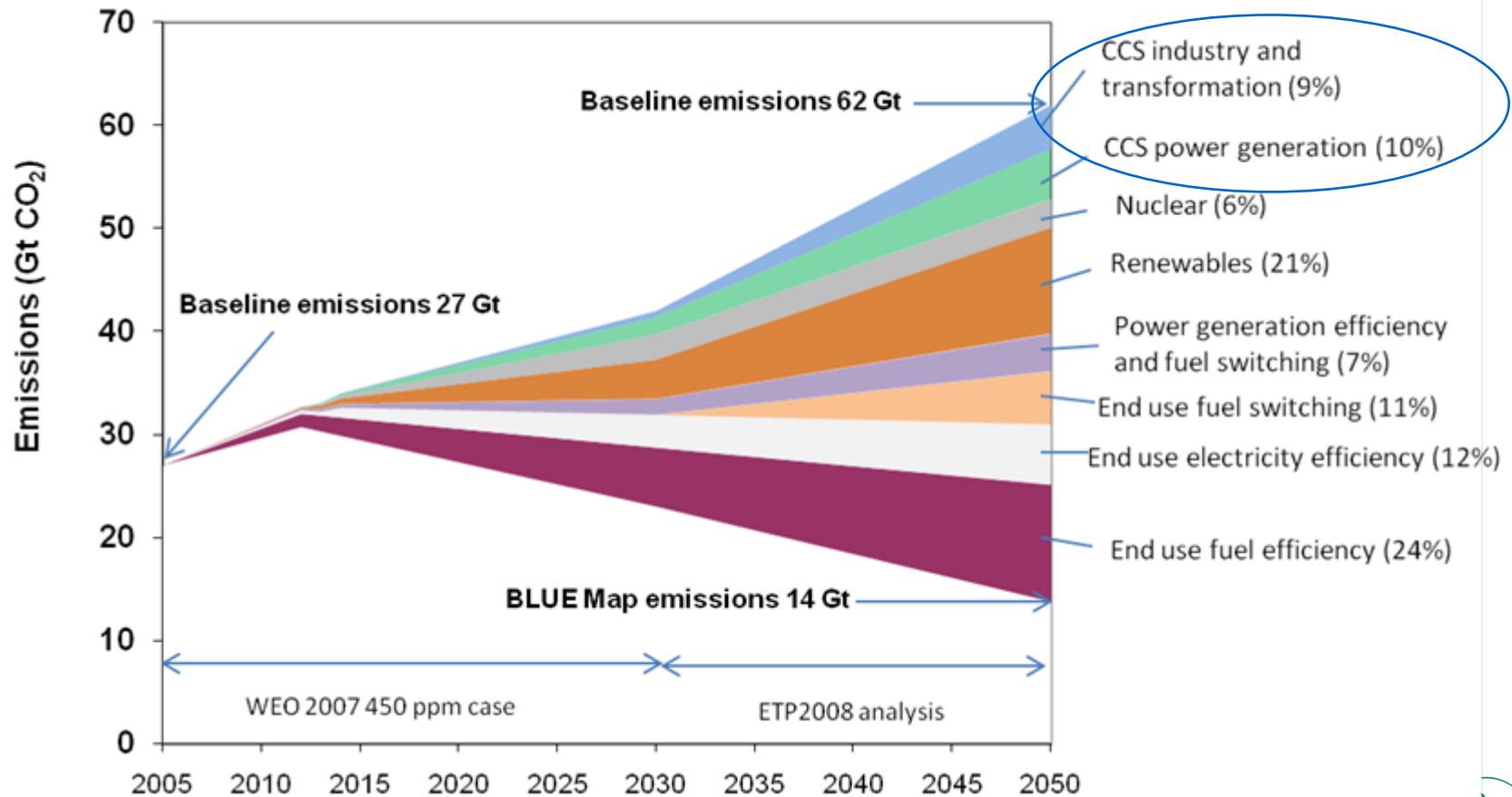
- co-ordinates efforts to ensure energy security
- compiles energy statistics
- conducts policy analysis
- reviews energy policies & programs
- convenes, mobilizes science & technology experts



# IEA's in-depth analysis



# Results from IEA analysis



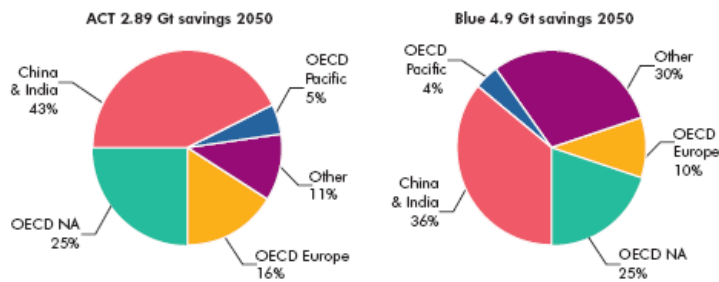
**Improved efficiency and decarbonising power generation could bring emissions back to current levels by 2050.**

**To achieve a 50% cut, we must also revolutionise transport.**



# CCS Roadmap

## CO<sub>2</sub> Capture and Storage - Fossil-Fuel Power Generation

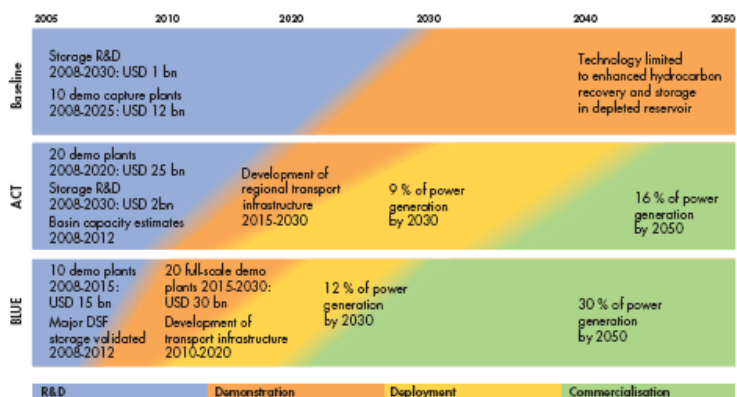


	Global Deployment Share 2030	RDD&D Inv. Cost USD bn 2005-2030	Commercial Inv. Cost* USD bn 2030-2050		Global Deployment Share 2030	RDD&D Inv. Cost USD bn 2005-2030	Commercial Inv. Cost* USD bn 2030-2050
OECD NA	35%	25-30	160-180	OECD NA	35%	30-35	350-400
OECD Europe	35%	25-30	100-120	OECD Europe	35%	30-35	150-200
OECD Pacific	10%	7-8	30-40	OECD Pacific	10%	10-12	70-80
China & India	15%	10-12	280-300	China & India	15%	12-14	450-500
Other	5%	3-4	60-70	Other	5%	4-5	300-350

### Technology Targets

	ACT: Emissions Stabilisation	BLUE: 50% Emissions reduction
<b>RD&amp;D</b>	Technologies tested in small- and large-scale plants. Cost of CO <sub>2</sub> avoided around 50 USD/t by 2020. Chemical looping tested	
Capture technologies for three main options (post-combustion, pre-combustion, and oxy-fuelling)		
Demonstration targets	20 large-scale demo plants with a range of CCS options, including fuel type (coal/gas/biomass) by 2020	30 large-scale demo plants with a range of CCS options, including fuel type (coal/gas/biomass) by 2020
New gas-separation technologies: membranes & solid adsorption	New capture concepts: next-generation processes, such as membranes, solid absorbers and new thermal processes	
Technology transfer	Technology transfer to China and India	Technology transfer to all transition and developing countries
<b>Deployment</b>	Major transportation pipeline networks developed and CO <sub>2</sub> maritime shipping	
Regional pipeline infrastructure for CO <sub>2</sub> transport		
Deployment targets	Early commercial large-scale plants by 2015 (ZEP, ZeroGen, GreenGen)	30% of electricity generated from CCS power plant

## Technology Timeline



## Key Actions Needed

- Develop and enable legal and regulatory frameworks for CCS at the national and international levels, including long-term liability regimes and classification of CO<sub>2</sub>.
- Incorporate CCS into emission trading schemes and clean development mechanisms.
- RD&D to reduce capture cost and improve overall system efficiencies.
- RD&D for storage integrity and monitoring. Validation of major storage sites. Monitor and valuation methods for site review, injection & closure periods.
- Raise public awareness and education on CCS.
- Assessment of storage capacity using Carbon Sequestration Leadership Forum methodology at the national, basin and field levels.
- New power plants built after 2020 to have CCS.
- New power plants to be "capture-ready" after 2015.

## Key Areas for International Collaboration

- Development and sharing of legal and regulatory frameworks.
- Develop international, regional and national instruments for CO<sub>2</sub> pricing, including CDM and ETS.
- Raise public awareness and education.
- Sharing best practices and lessons learnt from demonstration projects (pilot and large-scale).
- Joint funding of large-scale plants in developing countries by multi-lateral lending institutions, industry and governments.
- Development of standards for national and basin storage estimates and their application.
- Organizations: CSLF, IEA GHG, IEA CCC, IPCC.





# Examples of IEA publications on CCS



35 years  
1974-2009



# IEA and the G8

The screenshot shows the IEA website's 'G8 Related Work' page. The header includes the IEA logo and name in English and French, a search bar, and navigation tabs. The main content area features a breadcrumb trail, a title for the G8 Gleneagles Programme, three logos (Gleneagles 2005, Summit 2006, G8 2007), and a list of reports submitted to the 2008 G8 Summit. A sidebar on the left contains various menu items.





**International Energy Agency**  
**Agence Internationale de l'Énergie**

G8 Related Work

Home About IEA By Topic By Country Publications & Papers Events For Journalists

Home > G8 Related Work

## IEA's G8 Gleneagles Programme - Aiming at a Clean, Clever and Competitive Energy Future

At the July 2008 G8 Summit in Hokkaido/Toyako (Japan), IEA submitted reports and findings from its three years of work for the G8. [Click here](#) to read the Hokkaido Summit Declaration.

The IEA G8 programme has identified new strategies for greater energy security and climate protection. IEA points to policies for speeding development and deployment of cleaner, more efficient energy technologies. The IEA has submitted a set of concrete policy recommendations for promoting energy efficiency that could reduce global CO2 emissions by 8.2 gigatonnes by 2030.

The IEA work focuses on: alternative energy scenarios and strategies; energy efficiency in buildings, appliances, transport and industry, including indicators; cleaner fossil fuels; carbon capture and storage; renewable energy; and enhanced international co-operation.

Responding at their 2008 Summit, the G8 leaders' Hokkaido communiqué :

### Some IEA input to the 2008 G8 Summit

- Summary Report to G8 2008 Summit
- Detailed Report to G8 2008 Summit - *Towards a Sustainable Energy Future*
- Energy Technology Perspectives 2008 - Executive Summary
- 25 IEA Energy Efficiency Policy Recommendations
- Worldwide Trends in Energy Use and Efficiency - Key Insights from IEA Indicator Analysis
- Fossil Fuel-Fired Power Generation - Case Studies of Recently Constructed

Alternative energy scenarios and strategies

Energy efficiency in buildings, appliances, transport and industry including Indicators

Cleaner fossil fuels

Carbon capture and storage

Renewable energy

Enhanced international co-operation


Statistics

Oil Market Report

World Energy Outlook

Energy Technology Agreements

Environment

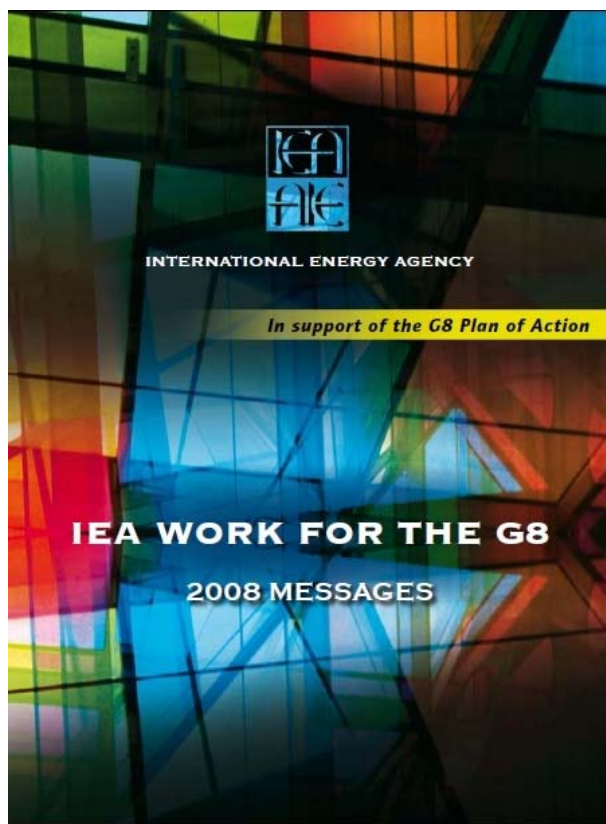
Bookshop 





# IEA reports to G8 in Hokkaido, 2008

## Summary



## Full Report



*In support of the G8 Plan of Action*

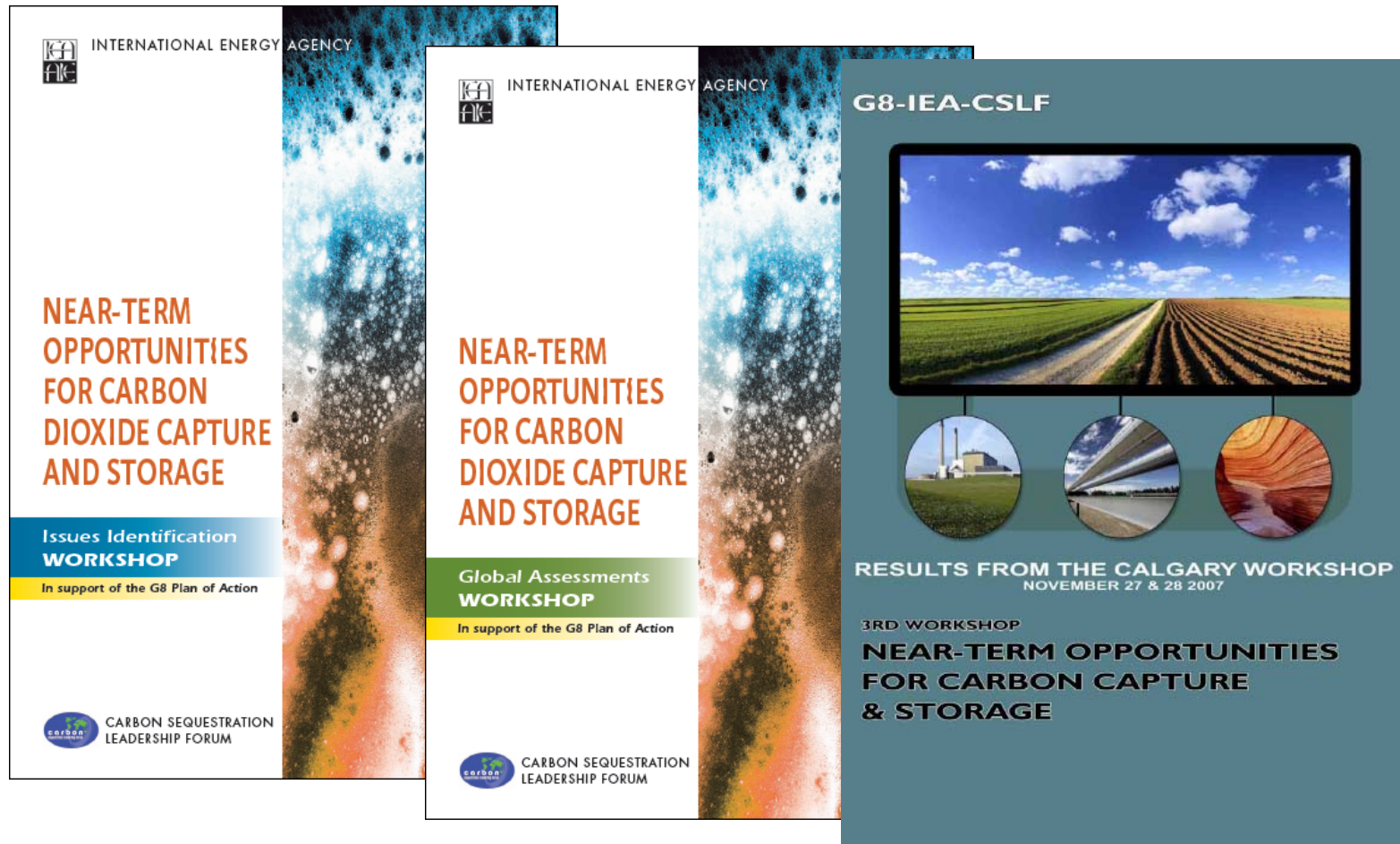
### TOWARDS A SUSTAINABLE ENERGY FUTURE

*IEA programme of work  
on climate change, clean energy  
and sustainable development*

2008



# Three IEA/CSLF Workshops on Near-Term Opportunities for CCS



Comprehensive set of recommendations for 2008 G8 summit



# Joint Statement by G8 Energy Ministers Aomori, Japan, 8 June 2008

- **Critical role of CCS. Collective support of the recommendations developed by IEA and CSLF. 20 large-scale CCS demonstration projects by 2010, beginning of broad deployment of CCS by 2020.**
- **Foster international action to accelerate large scale integrated CCS demonstration projects and deployment in developed and developing countries.**
- **IEA/CSLF assessment by 2010 of the implementation of their recommendations, and assessment of progress towards accelerated deployment and commercialisation of CCS.**



# Ongoing CCS activities at the IEA

- **Coordinate and communicate within the IEA network, including the SLT, the CERT, the WPF and various implementing agreements**
- **Tracking G8 2008 goal to announce 20 large-scale CCS demonstration projects by 2010**
- **Development of an international CCS Roadmap**
- **Operate the IEA CCS ‘Regulators’ network**
- **Conduct CCS technology analysis**
- **Continued international collaboration on CCS**



# Future CCS activities at the IEA

## May include:

- **Developing a CO<sub>2</sub> storage atlas**
- **Examining significance of 'capture readiness' for stakeholders**
- **Developing a model CCS legal framework**
- **Creating a partnership with multilateral funding institutions**
- **Actively engaging with developing countries**
- **Creating a CCS Centre of Excellence in an IEA non-Member country**





# Conclusions

- **Development and implementation of CCS recognised as essential**
- **Integrated CCS unproven at commercial scale for coal**
- **Range of challenges – technical, financial, regulatory, ...**
- **Need international co-operation and collaboration for large-scale implementation**
- **High degree of interest - G8 mandate**
- **IEA very interested in continuing to work with the CSLF and looks forward to working with the GCCSI**



# Thank you!

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