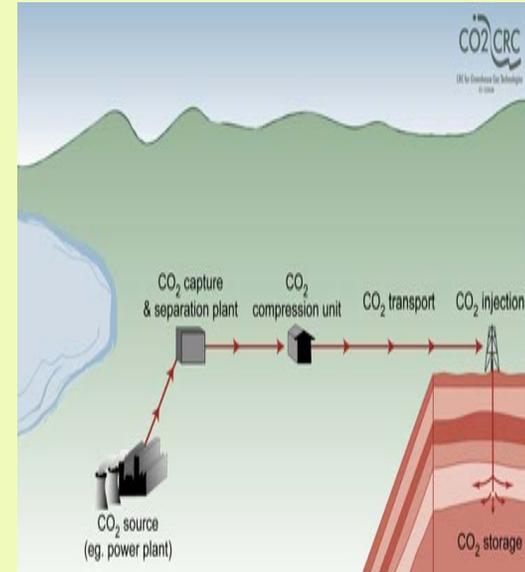




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Presentation to EU/OPEC Roundtable Policies and Regulations

Ms Tania Constable

General Manager

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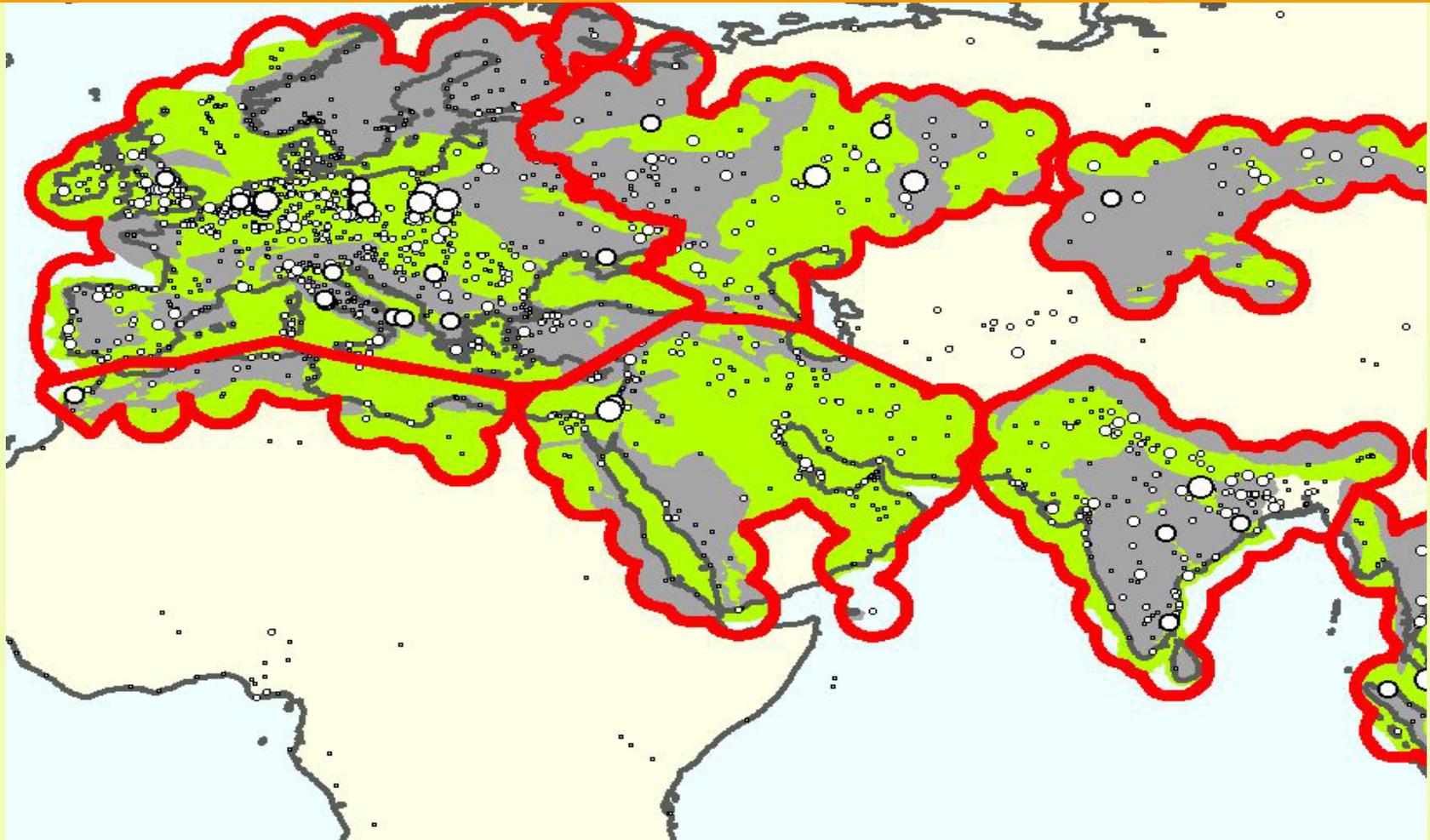
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BACKGROUND

- Three International drivers of Energy Policy: Energy Security, Environment Sustainability and Economic Prosperity
- Carbon capture and storage (CCS) offers an opportunity to continue to use fossil fuels in a carbon constrained world
- G8 has called for the process of developing and commercialising CCS to be accelerated
- Policies, particularly legal and regulatory regimes need to be developed so that countries are 'storage ready'
 - work on reducing costs/improving efficiency needs to continue in parallel
- The Carbon Sequestration Leadership Forum (CSLF) and the International Energy Agency (IEA) are working with this end in mind

Middle East Emissions and Storage Opportunities



Emission regions (300km buffer)

- Emission sources



Prospective basins



Non-Prospective provinces



KEY POLICY AND REGULATORY ISSUES

Government Role

Long Term Regulatory Framework
Short term government incentives
Closing the gap in Government funding
Incentives vs. penalties

Market Creation

Global view of problem
Long Term commercial framework
Define market for carbon

Risk Mitigation

Risk Analysis/Strategy
Long term liability for storage

Capacity Building

Developing countries
Recognition of skills shortage

Value Creation

Who pays?
What will create incentives?
Risk and return for investors
Public Acceptance

Cost Reduction

Making projects economically viable
Incentives to learn by doing

Legal Regulatory Policy

Ownership/access and property rights of CO₂
Contractual responsibility/IP
Monitoring and Verification
Jurisdictional cross boundary issues

Technology Transfer

Commercial implementation of projects, skills, training



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LEGAL AND REGULATORY DEVELOPMENTS TO DATE

- Some countries are developing legal and regulatory regimes for CCS
- The 2005 publication, Legal Aspects of storing CO₂ highlighted legislative work was needed to keep pace with technological development
- Five inter-related priority areas of work were identified:
 - Contractual responsibilities including intellectual property
 - National legal and regulatory frameworks
 - International environment protection instruments
 - Creating a level playing field for CCS
 - Public awareness and acceptance





NATIONAL LEGAL AND REGULATORY FRAMEWORKS

- National legal and regulatory regimes are required before a large number of projects can proceed
- Although a small number of projects can proceed under one off approvals processes
- Regulation for the life of a project is required, capture, transport, injection and post closure
- Key areas for regulation
 - access, ownership and property rights, site closure, monitoring and verification, long term liability, Trans boundary issues
- Role of the regulator
- Case studies which illustrate work done in several jurisdictions



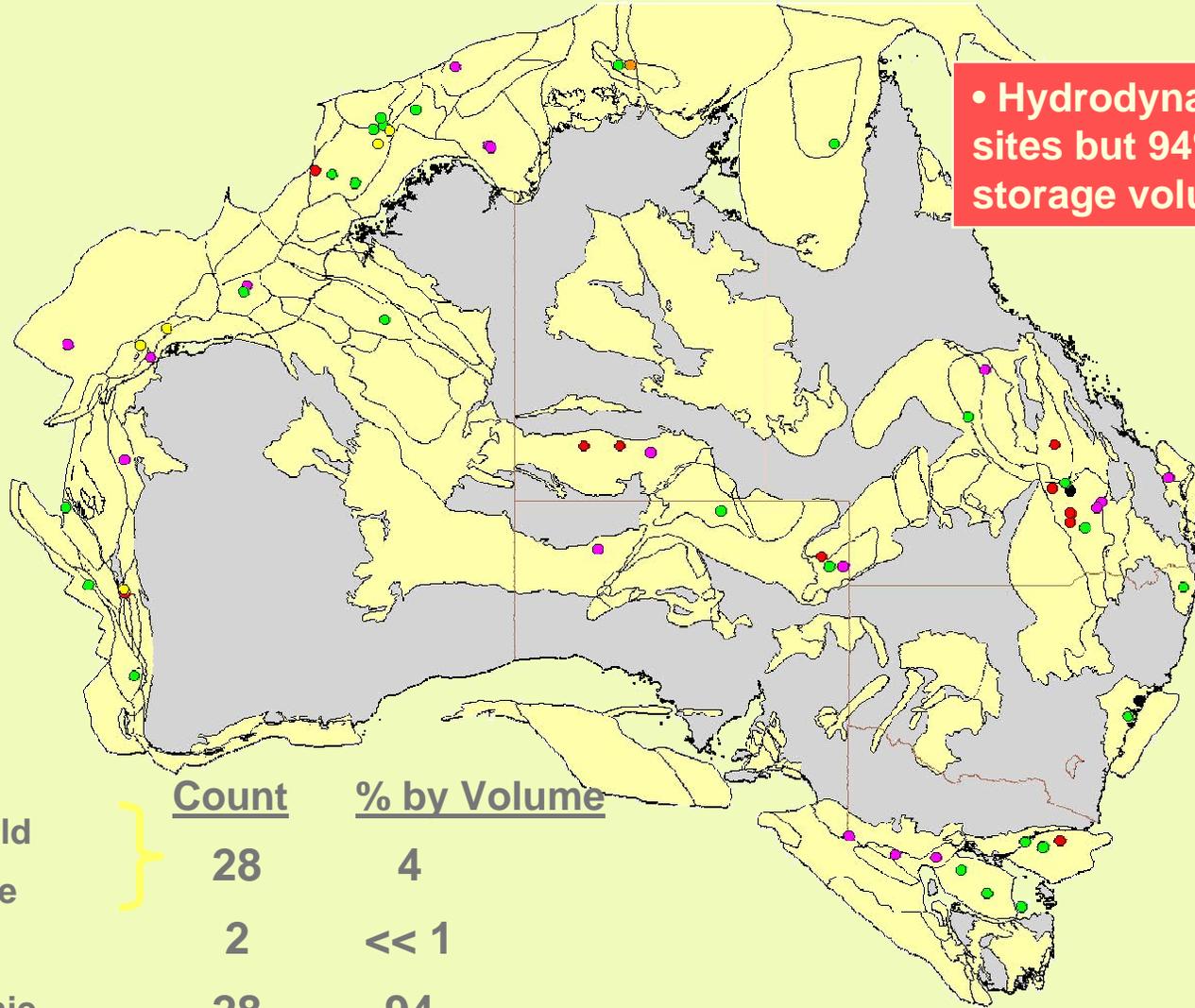
BASIS FOR REGULATION

- Many similarities between injection and storage and the petroleum industry
- Petroleum regulatory model may be appropriate as this may already provide an suitable framework with most the required expertise already in place
- Details will differ considerably between countries, depending on the nature of their existing regimes, for example, licensing schemes compared with production sharing contracts
- Regimes will need to robust, while providing flexibility to allow the distinctive characteristics of different projects to be taken into account



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• Hydrodynamic 43 % of sites but 94% of CO₂ storage volume

- Depleted Field
- Dry Structure
- ECBM
- Hydrodynamic
- Stratigraphic
- Sub-Unconformity

	<u>Count</u>	<u>% by Volume</u>
● Depleted Field	28	4
● Dry Structure		
● ECBM	2	<< 1
● Hydrodynamic	28	94
● Stratigraphic	7	2
● Sub-Unconformity		

Sedimentary Basins



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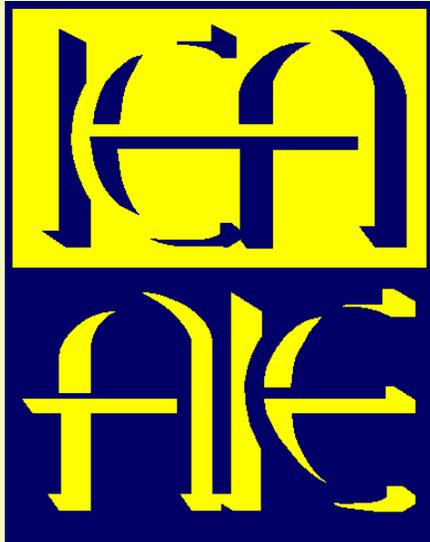
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AUSTRALIAN CASE STUDY

- Australia is currently developing a nationally consistent legal and regulatory regime for CCS.
- Many attractive storage sites lie in petroleum provinces OFFSHORE where a relatively high level of geological knowledge exists and potential sites may have already demonstrated their ability to contain fluids
- There can be interactions – both positive and negative – between CCS and petroleum
- One advantage for both industries is better geological knowledge
- The availability of CO₂ may offer significant opportunities for enhanced oil recovery
- If managed properly, there are likely to be benefits for both industries
- Regulation is required before a large number of projects can proceed, although a small number of projects can proceed under 'one-off' approvals processes
- CCS regime needs to cover, amongst other things:
 - Rights to explore for, prove up and use storage sites
 - Recognition of pre-existing rights
 - What criteria will be applied in risk assessments at the project approval stage
 - How projects will be regulated and monitored during the injection phase
 - How long term liabilities will be managed



CONTRACTUAL RESPONSIBILITIES INCLUDING INTELLECTUAL PROPERTY



- Motivation for sharing or protecting Intellectual property
- Protecting Intellectual Property - patents, trade secrets and trademarks

Intellectual Property systems in developing countries

- Harmonisation of Intellectual Property Laws
- Approaches to managing Intellectual Property case studies
- Technology transfer and capacity building - information networks, education, licensing/contractual arrangements, joint ventures
- Intellectual Property rights in CCS projects – life cycle approach



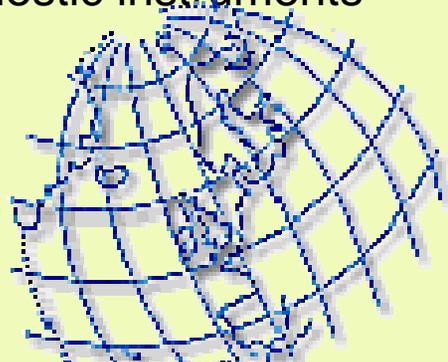


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INTERNATIONAL ENVIRONMENT PROTECTION INSTRUMENTS

- Some international marine environment instruments preclude storage of CO₂ under the seabed
- Inventory of international treaties and conventions – UNCLOS, London Convention, Basel Convention, OSPAR and other regional treaties and conventions
- Defining CO₂ – waste or resource
- Negotiations currently underway to amend treaties and conventions – London Protocol and OSPAR
- Impact of amendments to London Protocol on international and domestic instruments



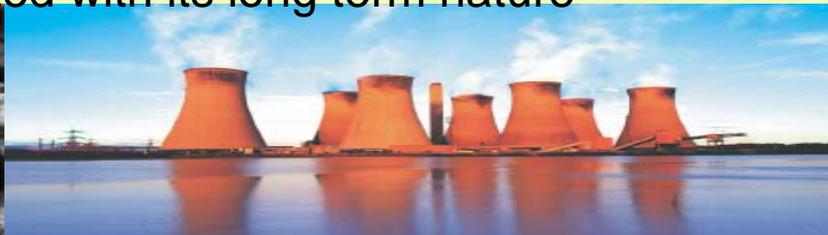
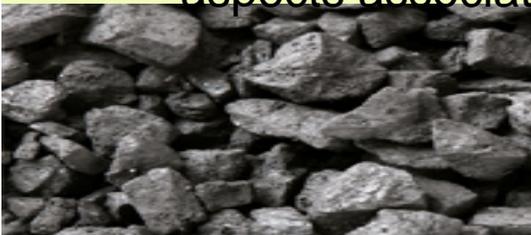


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CREATING A LEVEL PLAYING FIELD

- Reasons for CCS being treated differently under schemes
- Different schemes and their application to CCS
- Legal and regulatory issues affecting the role of scheme for CCS
 - baselines and allocation
 - monitoring, reporting and verification
 - energy penalties
 - legislative and regulatory requirements
 - storage liabilities
 - accounting for leakage
- Projects require certainty as to how CCS will be treated, especially those aspects associated with its long term nature





PUBLIC AWARENESS

- Perceptions may not always reflect reality
- Key public concerns:
 - Unknown future impacts of new technology such as possibility of leakage
 - unproven effectiveness of CCS and diversion of funding from renewable energy technologies
- Prerequisites to be met before acceptance of CCS increases:
 - understanding of climate change and CCS as part of portfolio of solutions to reduce carbon emissions
 - dissemination of balanced information from independent source
 - transparent, inclusive and open process in developing regulations
- Developing guidelines for public involvement in developing legislation and assessing projects



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NEXT STEPS

- G8 has set a CCS path but IEA/CSLF can only drive the process so far
- There are already approximately 80 CCS projects, but many more are required
- Industry to share information with policy makers about commercial experience, demonstrations and costs
- Use lessons from ongoing projects
- Explore business analogs from different industries, eg nuclear power, gas storage, pipeline construction
- Discussion paper for 2nd IEA/CSLF Workshop on Legal Aspects of Storing CO₂. Next opportunity to workshop discussion paper will be at Workshop held 17 October 2006 in Paris, IEA to publish report early 2007