

CarbonNet Project

7th IEA International CCS Regulatory Network Meeting

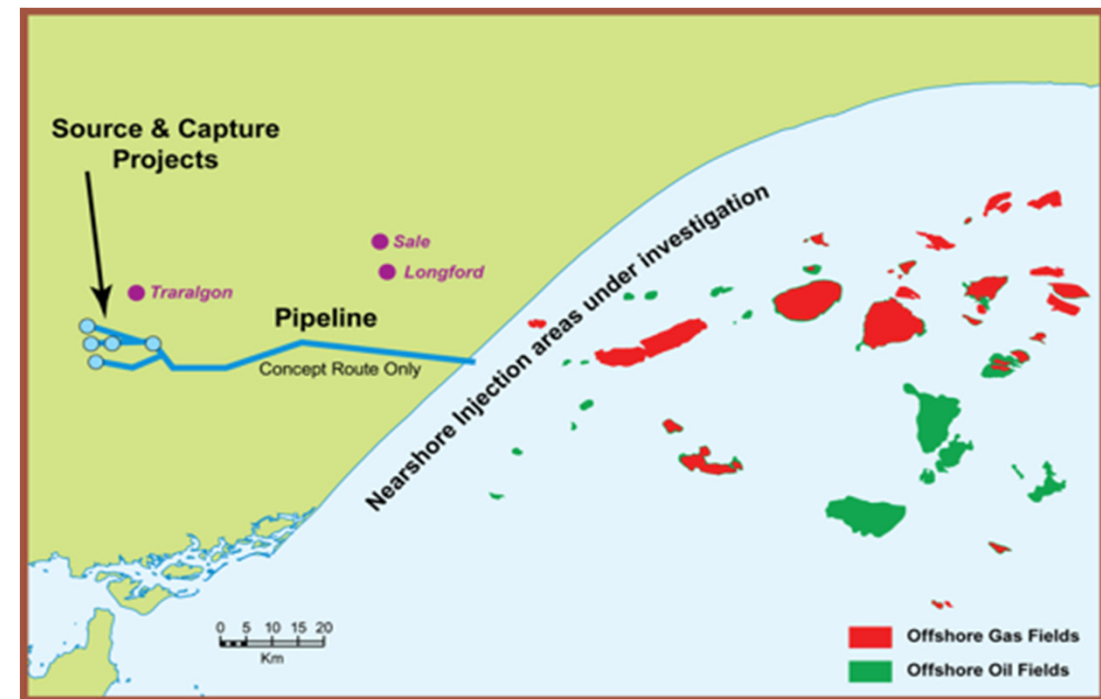
Victoria Mendes Da Costa
Special Advisor – Government & Regulatory Affairs
22 – 23 April 2015

The CarbonNet Project

- **Project perspective** on regulatory process
- Not representing Victorian or Commonwealth Governments
- Not representing Victorian or Commonwealth regulators

The CarbonNet Project

- Established in 2009 to investigate the potential for a commercial-scale, multi-user CCS network in Gippsland, Victoria, Australia
- Capturing CO₂ emissions from industrial sources and injecting it for storage in rock formations deep below the sea bed
- Funded by the Australian & Victorian Governments
- Working collaboratively with industry



The CarbonNet Project

- Provide scalable infrastructure to underpin growth and development of a commercial scale CCS network
 - Foundation project: 1 to 5 mt of CO₂ pa for 25 years
 - Expansion phase: up to 20 mt of CO₂ pa
- Common user pipeline and storage infrastructure
 - Hub based concept
- Minimise conflicts with petroleum activities
 - Foundation storage sites focused on near shore zone (avoid onshore storage)
 - Over the longer term there is potential to use depleted oil and gas fields as production ceases

Why Gippsland for CCS?

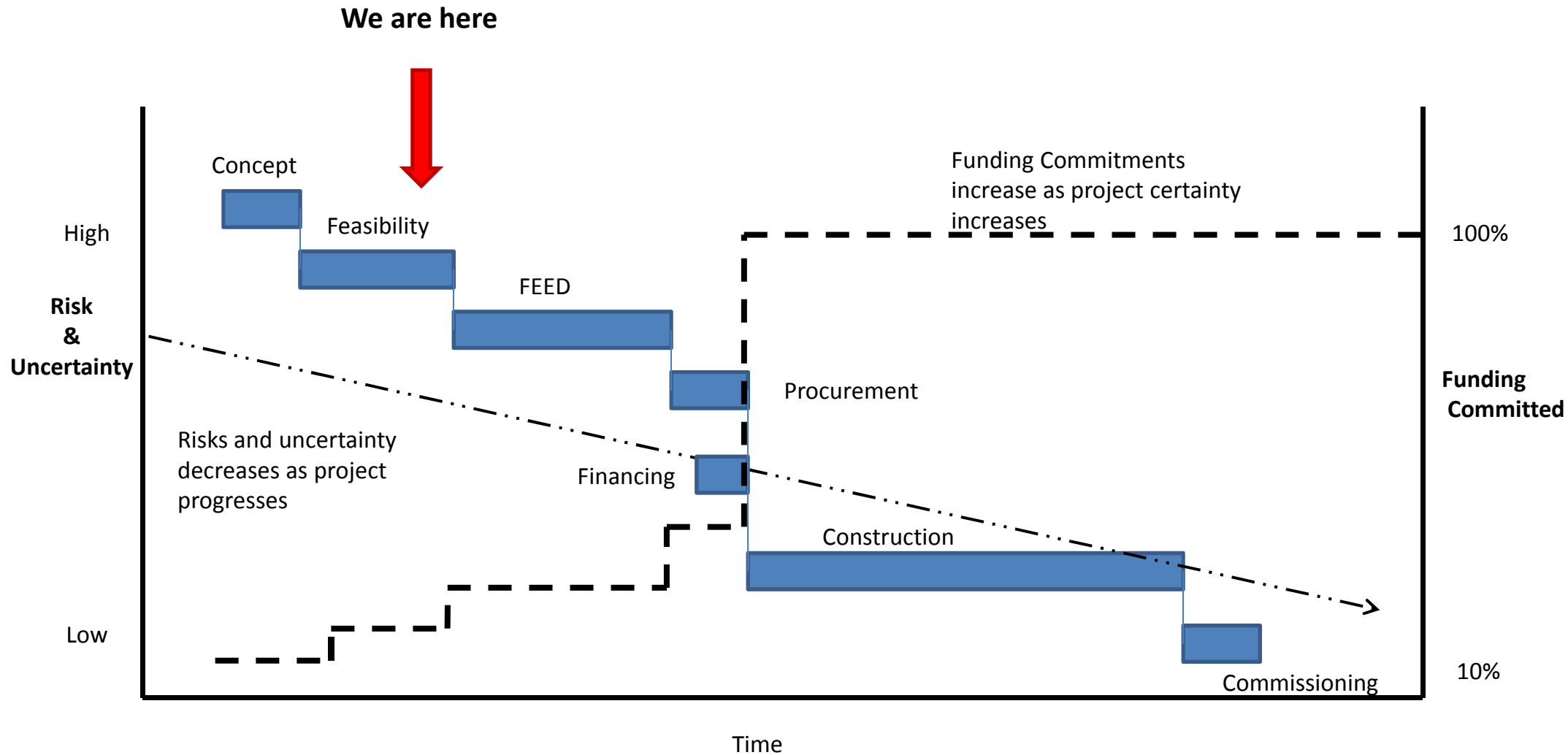
- A world-class location for CCS - Gippsland Basin found to contain both the best quality and largest volume of CO₂ reservoirs from 25 major basins across Australia (*2009 National Carbon Task Force*)
- Excellent databank from 50 years of oil and gas discovery and production
- Close proximity to industry and Victoria's coal-fired power generators
- Also potential for new industries converting brown coal to products such as synthetic gas or hydrogen

World class carbon storage potential



10s of billions of tonnes of coal & Victoria's power generation hub

A staged approach



Key areas of focus during feasibility

“Eliminate or reduce barriers to industry participation”

- Commercial viability
- Technical feasibility
- Storage certainty

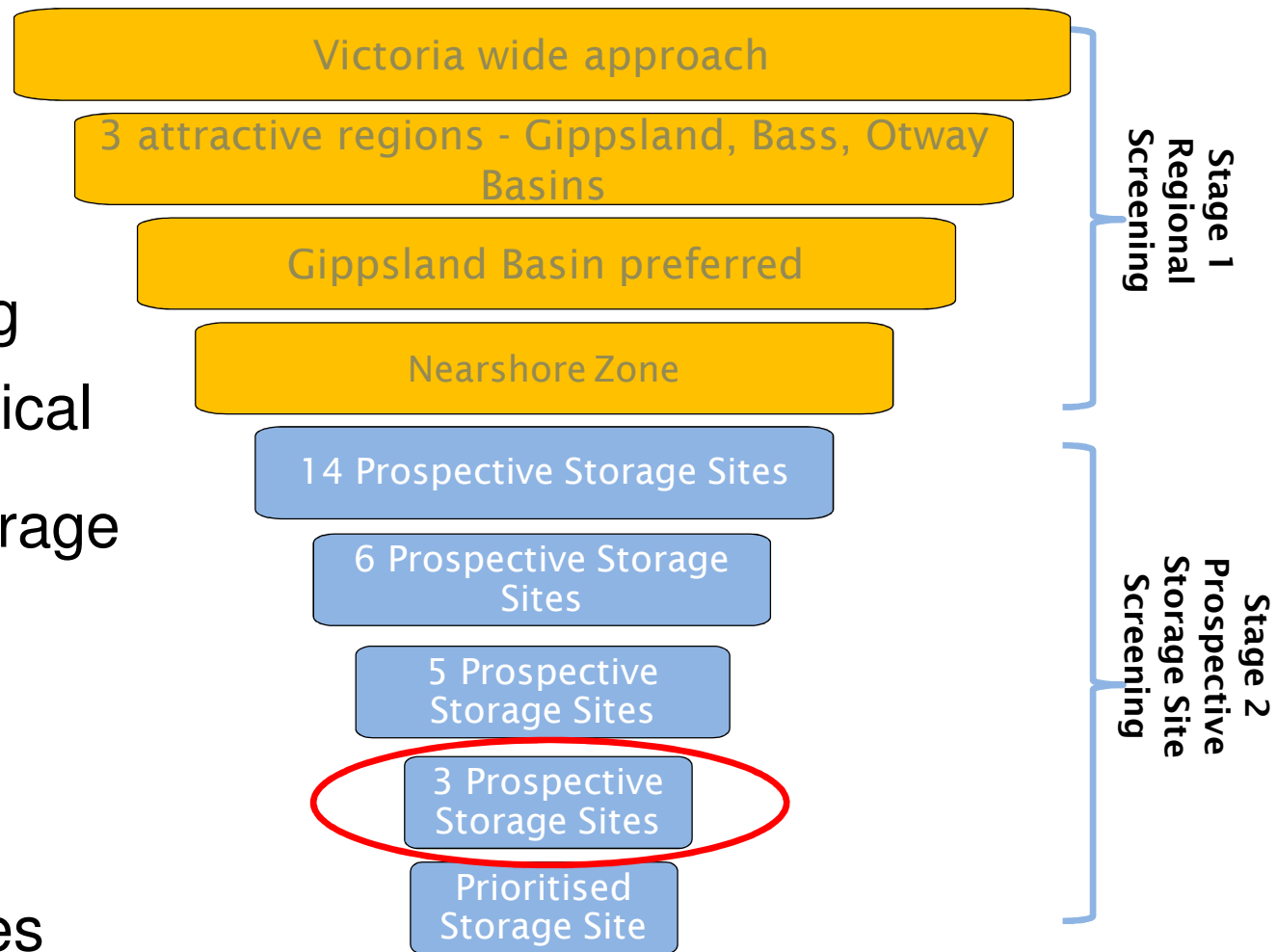
- **Regulatory suitability**

- demonstrate regulations are suitable & can be achieved
 - Identify any regulatory impediments & develop solutions

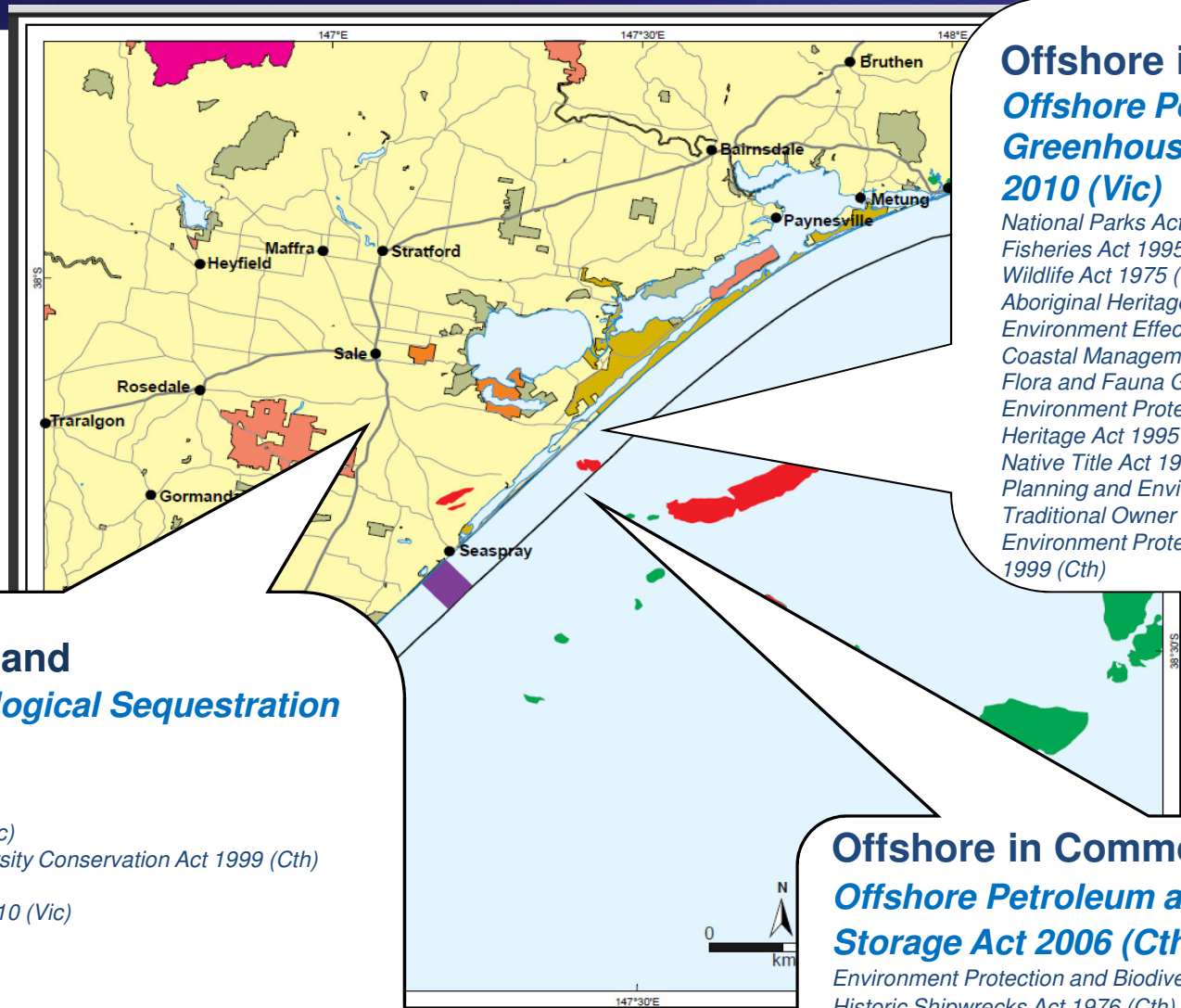
- Public engagement /community confidence

Storage certainty

- Two-stage process
 - regional
 - site specific
- Initial technical screening
- Technical and non-technical assessment - criteria developed to identify storage sites
- Consolidation of site characteristics
- DNV endorsement
- Portfolio approach to sites



Regulatory approach - Legislative context



Onshore Victorian land *Greenhouse Gas Geological Sequestration Act 2008 (Vic)*

Pipelines Act 2005 (Vic)
Environment Effects Act 1978 (Vic)
Environment Protection Act 1970 (Vic)
Environment Protection and Biodiversity Conservation Act 1999 (Cth)
Aboriginal Heritage Act 2006 (Vic)
Traditional Owner Settlement Act 2010 (Vic)
National Parks Act 1975 (Vic)
Native Title Act 1993 (Cth)
Land Act 1958 (Vic)
Crown Lands (Reserves) Act 1978 (Vic)
Transfer of Land Act 1958 (Vic)
Coastal Management Act 1995 (Vic)
Flora and Fauna Guarantee Act 1988 (Vic)
Forests Act 1995 (Vic)
Heritage Act 1995 (Vic)
Planning and Environment Act 1987 (Vic)
Wildlife Act 1975 (Vic)

Offshore in Victorian waters *Offshore Petroleum and Greenhouse Gas Storage Act 2010 (Vic)*

National Parks Act 1975 (Vic)
Fisheries Act 1995 (Vic)
Wildlife Act 1975 (Vic)
Aboriginal Heritage Act 2006 (Vic)
Environment Effects Act 1978 (Vic)
Coastal Management Act 1995 (Vic)
Flora and Fauna Guarantee Act 1988 (Vic)
Environment Protection Act 1970 (Vic)
Heritage Act 1995 (Vic)
Native Title Act 1993 (Cth)
Planning and Environment Act 1987 (Vic)
Traditional Owner Settlement Act 2010 (Vic)
Environment Protection & Biodiversity Conservation Act 1999 (Cth)

Offshore in Commonwealth waters *Offshore Petroleum and Greenhouse Gas Storage Act 2006 (Cth)*

Environment Protection and Biodiversity Conservation Act 1999 (Cth)
Historic Shipwrecks Act 1976 (Cth)
Sea Installations Act 1987 (Cth)
Environment Protection (Sea Dumping) Act 1981
Native Title Act 1993 (Cth)

Regulatory approach

- “No surprises” approach – identify issues early
- Regulatory scenario planning – in concert with Storage team (technical and non-technical assessment criteria developed to identify preferred storage sites)
- Early engagement with regulators to identify issues, and build relationships & capacity
- Established Regulatory Approvals Working Group with key regulators in 2012

Regulatory Test Toolkit

- Deployed GCCSI Regulatory Test Toolkit in August 2013
- The Global CCS Institute's toolkit has been used internationally to 'stress-test' regulatory frameworks
- Used successfully in Scotland, Trinidad & Tobago, Romania & Malaysia
- Opportunity to bring together regulators to:
 - come to common understanding of the regulatory framework (including sequencing) for CCS
 - identify key issues, gaps or overlays in regulatory framework
 - increase likelihood of identifying issues early

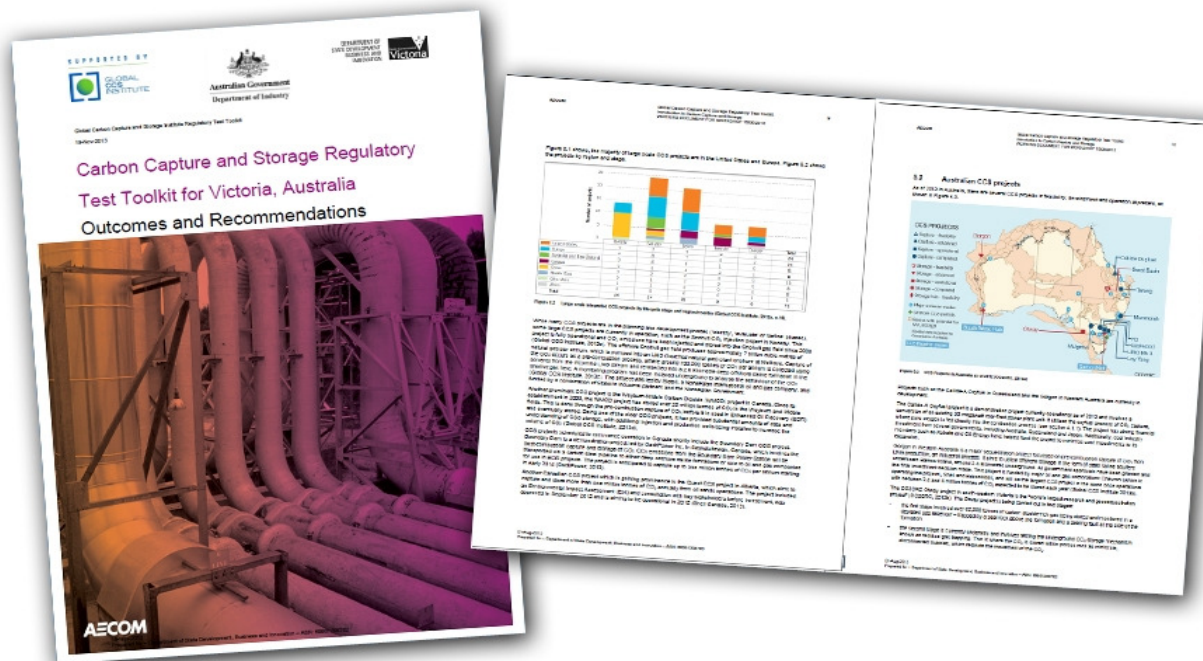
Toolkit workshop

- Workshop with over 40 regulators
- Used a hypothetical CCS scenario in Gippsland
- Draft Approvals & Permits Register circulated for pre-reading
- Facilitator used with CCS experience
- Technical experts presented on different elements of CCS chain questions
- Groups discussed each element of the CCS chain & overarching considerations



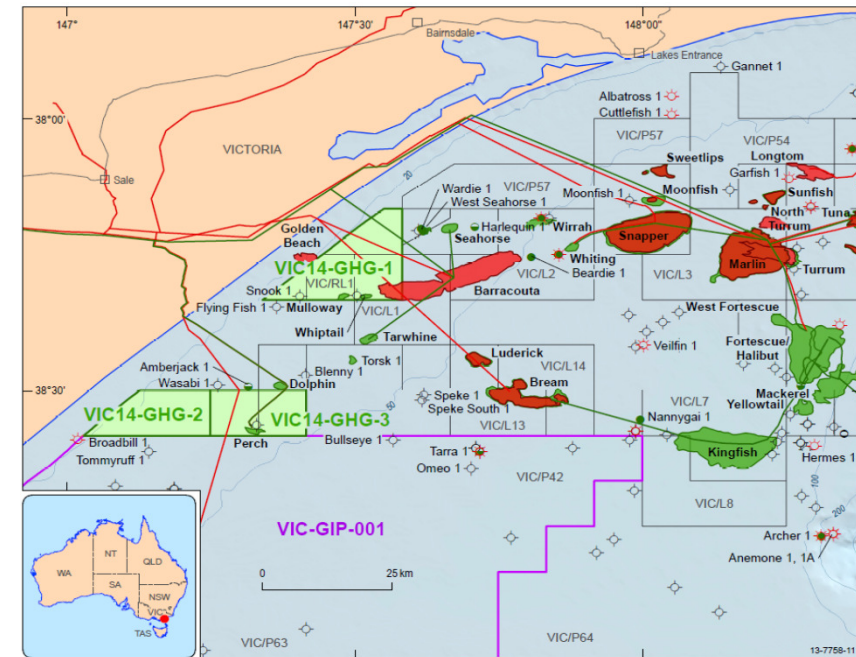
Toolkit outcomes

- Very valuable exercise
- Found CCS legislation in place and generally fit for purpose
- Report included 13 recommendations
- Some legislative issues were identified, some fixed, others scheduled
- Report available on GCCSI website



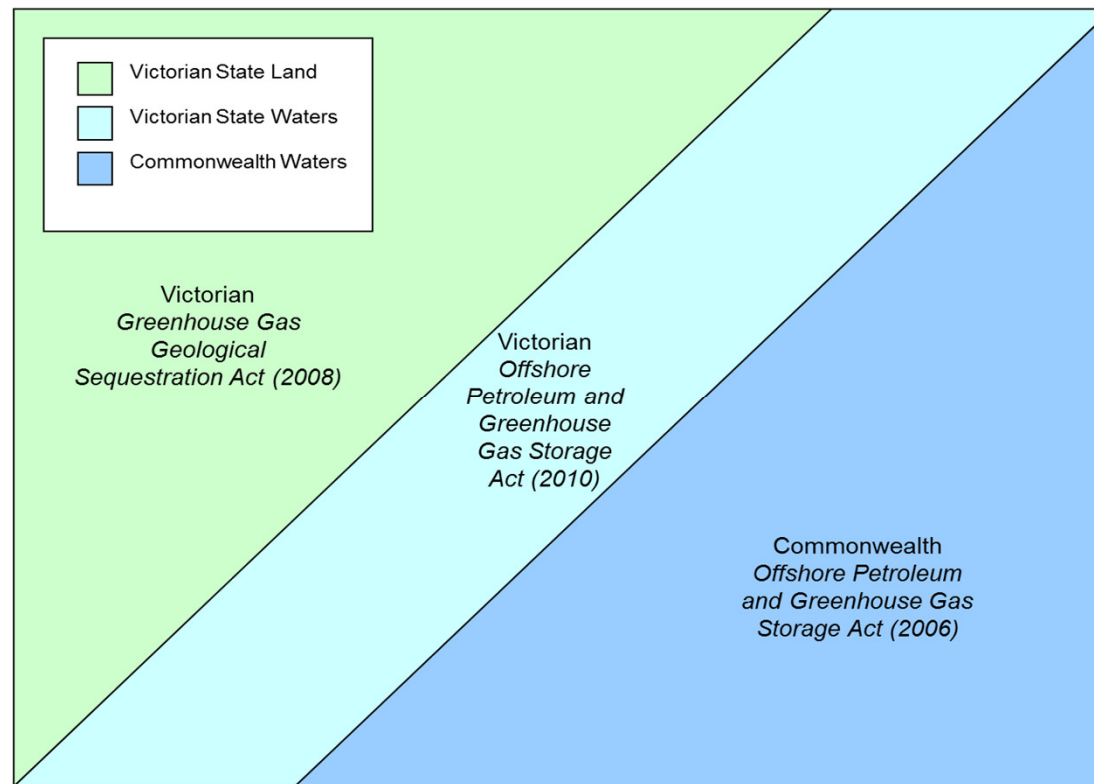
Regulatory achievements

- Developed a regulatory approvals framework for a CCS project in Victoria – tested with toolkit
- Awarded first GHG permit and approvals:
 - obtained approvals for field activities in 2011 and 2012 (soil hydrocarbon & aerial surveys)
 - the first GHG Assessment Permit under the Cth Offshore Act - giving exclusive exploration rights for VIC-GIP-001
 - 3 more blocks recently released
- Identified regulatory flaws & opportunities for red tape reduction – and worked with regulators to address them (special drilling authorisation, appraisal injection from onshore)



Regulatory challenges

- Three GHG Acts – offshore legislation very complex



- First CCS project to test new GHG legislation & broader regulatory framework

Regulatory challenges

- Administrative issues:
 - Long lead times for legislative fixes
 - Machinery of government changes (Govts, Ministers, regulators)
 - Location of the regulator
- Legal/policy issues:
 - Cross-jurisdictional & multi-permit storage formations prohibited in offshore GHG legislation storage (storage formation must be wholly situated within a permit)
 - Long term liability – different regimes in Victorian & Commonwealth jurisdictions
 - Rights afforded to pre-existing petroleum tenement holders
 - Comparison with petroleum industry

The CarbonNet Project



For further information, including regular project updates, please visit:

www.energyandresources.vic.gov.au

Contact us:

carbonnet.industry@ecodev.vic.gov.au