



Australian Government

Department of Resources, Energy and Tourism

ENHANCING AUSTRALIA'S ECONOMIC PROSPERITY


Safety and Environmental Impact: Assessment and Policy

Niki Jackson

Asst Manager, CCS International Section, Dept of Resources, Energy & Tourism

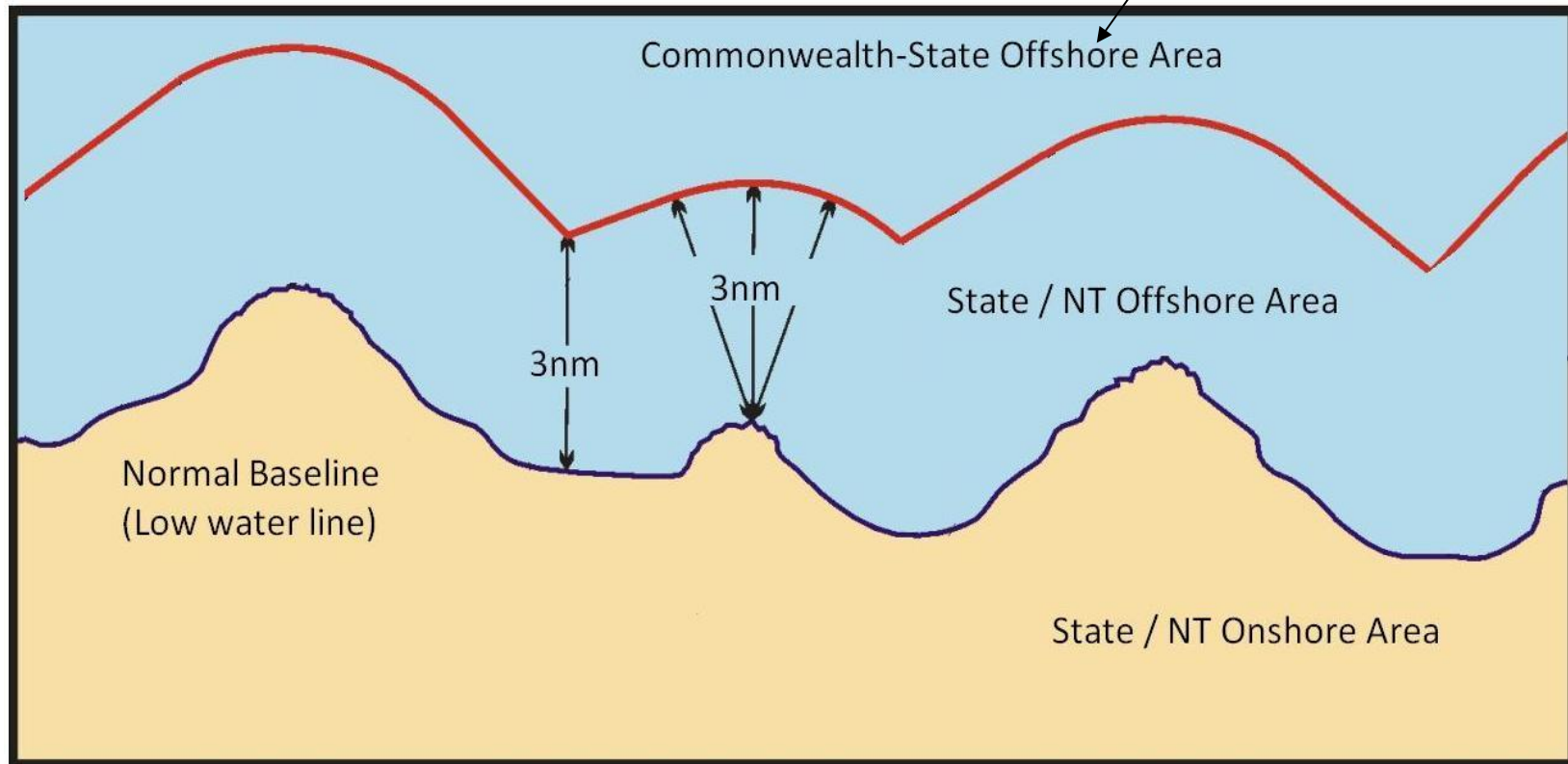


Introduction

- Australia's safety and environmental regime
 - Commonwealth CCS legislation
 - CCS acreage release
 - Safe and secure storage
 - Site closure and long term liability
 - Environmental protection
 - Occupational health & safety
 - Pipelines
- 

Jurisdictions

COMMONWEALTH LEGISLATION
JOINT RESPONSIBILITY






Safety and Environmental Regime

A risk management approach

Adapt existing legislative frameworks where possible


Based on offshore petroleum regime

- 
- offshore petroleum exploration
 - access and property rights
 - environment protection
 - OH&S

Also AS2885 - Australian Standard for pipelines



Commonwealth CCS Legislation


- Offshore petroleum legislation adapted
 - *Offshore Petroleum and Greenhouse Gas Storage Act 2006*
 - Main Features (related to safety & environment):
 - Title system similar to petroleum
 - Safe and secure storage
 - Site closure
 - Long term liability
 - Regulator is the Responsible Commonwealth Minister
- 

CCS Acreage Release







Declaration of Formation

- Required before injection licence application
 - Establishes the viability of the site
 - Regulator must be satisfied that site is suitable
 - Detailed modelling of the plume required
 - Details of any engineering enhancements also required.
- 




Site Plan

- Builds on the Declaration of Formation
 - Risks identified and adequate strategies to address them
 - Behaviour of the GHG stream must be understood
 - Monitoring must enable the timely identification of potential problems
 - Regulator has broad powers to direct mitigation and remedial actions, if required.
- 



Site Plan - Monitoring

- Monitoring Program included in Site Plan
 - Not prescriptive, site dependent
 - Assure regulator that significant events detected in timely manner
 - Detect any variations from plume modelling
 - Nominate what are 'Reportable Incidents'
 - Specify thresholds for reporting leaks
- 




Site Plan – Incident Reporting

1. Recordable Incidents

- minor in nature

2. Reportable Incidents


- serious situations, or potential to lead to serious situations



Eg. variations from plume migration modelling
leakages to the seabed, large scale venting




Site Closure & Long Term Liability

- Application for closing certificate (5 yrs for decision)
 - Stored CO2 behaving as predicted
 - No significant risk to human health or environment
 - Pre-payment for longer-term monitoring program
 - Closing certificate issued
 - Statutory obligations cease, common law liabilities continue
 - >15 years after closing certificate issued, subject to:
 - CO2 behaving as predicted; and
 - no significant risk to human health or environment
 - Commonwealth takes over common law liability.
- 



Environmental Protection under OPGGSA


Petroleum Management of Environment Regulations

- Regulator requires an Environmental Plan
 - Identify risks and how to manage them
 - Implementation Strategy: to minimise environmental risks and ensure environmental performance objectives and standards are met.
- 



Other Environmental Protection

Environment Protection and Biodiversity Conservation Act 1999

- 
- Central piece of environmental legislation
 - Only applies to project's 'footprint'
 - Protects important flora, fauna, ecological communities, heritage areas
 - Matters of National Environmental Significance
 - Environmental Impact Statement required
 - Onus on proponent




Occupational Health & Safety

- National Offshore Petroleum Safety Authority (NOPSA)
 - National health and safety regulator for the Australian offshore petroleum industry
 - Extended to cover GHG storage in June 2010
 - Onus on the operator
 - Regulator requires a Safety Case
 - Identifies safety risks
 - Controls those risks
 - Systems to ensure controls are applied
- 



Pipelines

- Australian Standard AS2885
 - Currently covers gas and liquid petroleum
 - Extend coverage to CO2 pipelines
 - Energy Pipelines CRC research on fracture control, thermodynamics, materials selection & design
 - How to achieve cost reduction without compromising safety?
- 



Conclusion

Australia has quite a well developed CCS safety and environmental regime.

Framework hinges off amendments to offshore petroleum legislation



CCS-specific measures have been developed, too

Extending coverage of the Pipelines Standard