



gas exploration + production
in the nsw northern rivers

The image shows a map of the Northern Rivers region in New South Wales, Australia. The map is color-coded by local government areas (LGAs) in shades of yellow, purple, green, and red. Several areas are highlighted in red, indicating gas exploration and production zones. These include PEL 15, PEL 13, PEL 37, PEL 478, and PEL 479. Other labeled areas include Kingoonya, Proposed Cape Sore, and Annville #1. Coastal towns like WAREHILL, OORANG, EVANGHEAD, YASSA, and BROOKS HEAD are marked. An inset image shows a large fire or explosion at night. A small map of Australia in the bottom right corner highlights the location of the Northern Rivers region. The text 'n rivers' is partially visible at the bottom right of the map area.

about the EDO

“To promote the public interest and improve environmental outcomes through the informed use of the law”

Legal advice and litigation
Policy and law reform
Community education
Scientific assessment and advice

tonight

- what's happening in this area
- potential environmental impacts
- approval processes
- landholder rights

ecologically sustainable development

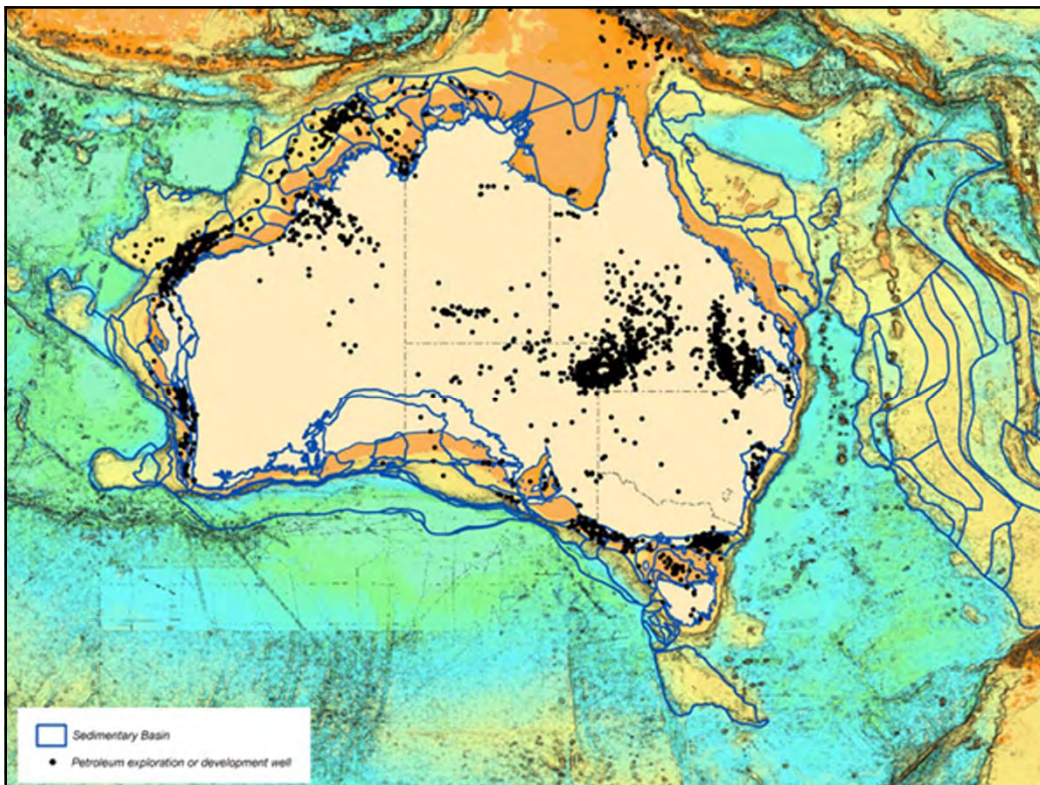
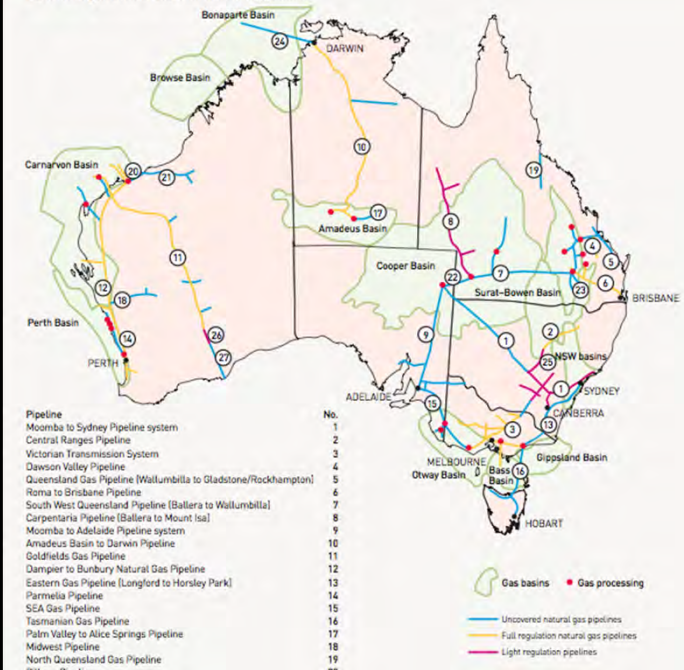
- '...development that meets the needs of present generations while not compromising the needs of future generations to meet their needs.'
- the precautionary principle
- inter-generational equity
- conservation of biological diversity
- improved valuation, pricing and incentive mechanisms ("polluter pays")

techie stuff

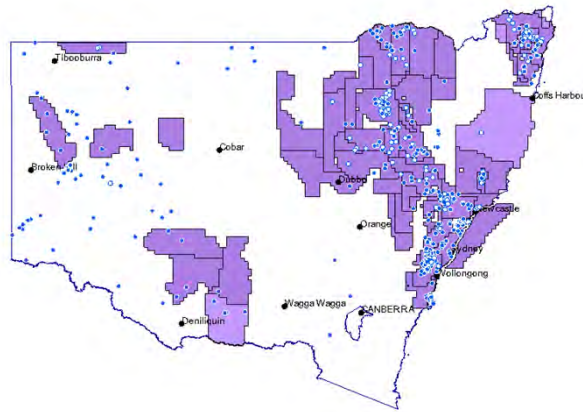
- coal seam gas + natural gas both mostly methane, CH₄
- reserves
 - 1P = proven (P90)
 - 2P = proven + probable (P50)
 - 2P = proven + probable + possible (P10)
- energy units
 - 1 petajoule (PJ) = 10 to power of 15 joules = ~280 megawatt hours

1 what's happening?

Figure 3.1
Australian gas basins and transmission pipelines



gas titles + bores



gloucester - edo case

- **Barrington-Gloucester-Stroud Preservation Alliance Incorporated v Planning Assessment Commission (PAC) and AGL**
- appeal against two decisions of the PAC to approve a concept plan and stage one of the Gloucester Gas Project
 - **110 gas wells** and **gas and water pipelines** between Gloucester and Stratford, a central processing facility, gas transmission **pipeline 95-100 km** long and Hexham gas delivery station
- Key issues
 - **Risks to surface and groundwater quality and quantity** when the gas wells are drilled
 - **Lack of data about groundwater impacts** in the context of the geological receiving environment, which contains numerous cracks and fissures in the coals seams
 - What to do with the **polluted waste water**, which is proposed to be re-used or disposed of
 - Uncertainty about the impacts of the **chemicals used in the fracking process**

current + planned activity

- exploration
 - Metgasco - 25+ wells
 - Arrow - 9 wells
 - Red Sky - 2 wells
- production - Metgasco only
 - Richmond Valley Power Station (30 MW) including up to 45 wells over 7-12 years + up to 12 ha of evaporation ponds
 - Lions Way pipeline (Casino-Ipswich)
- future plans - Metgasco
 - 200 MW power station from natural gas deposit under Casino?
 - pipelines to Gladstone, Brisbane or NSW north coast for offshore processing?

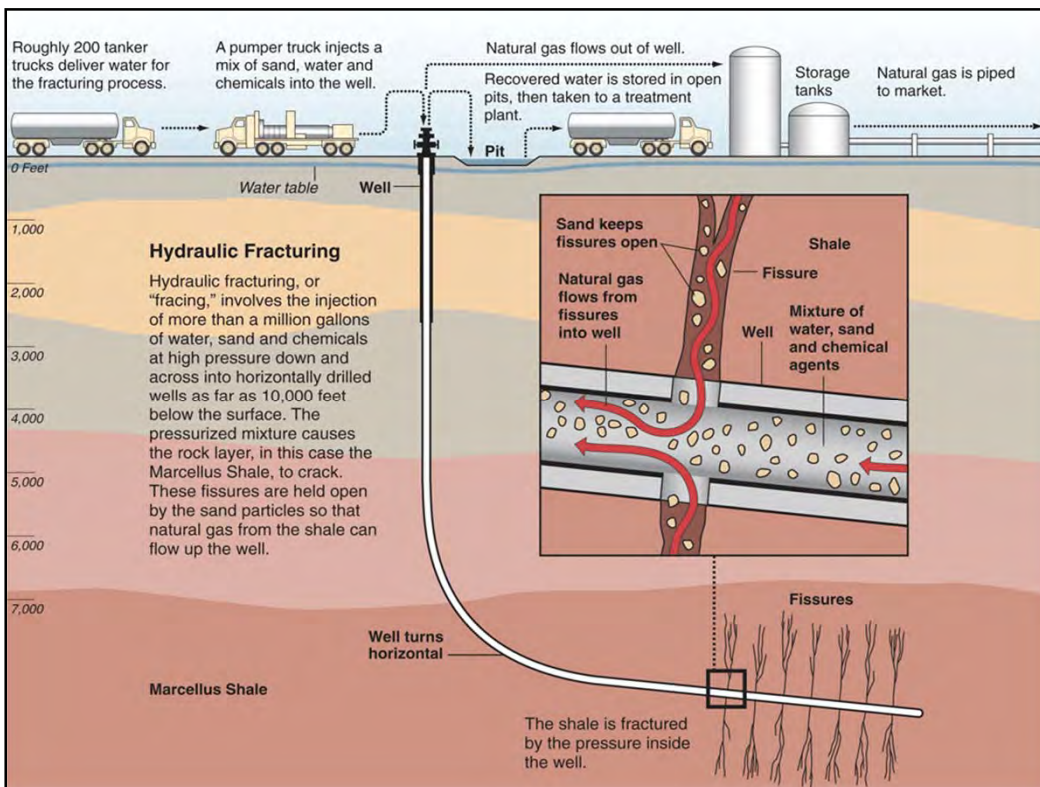
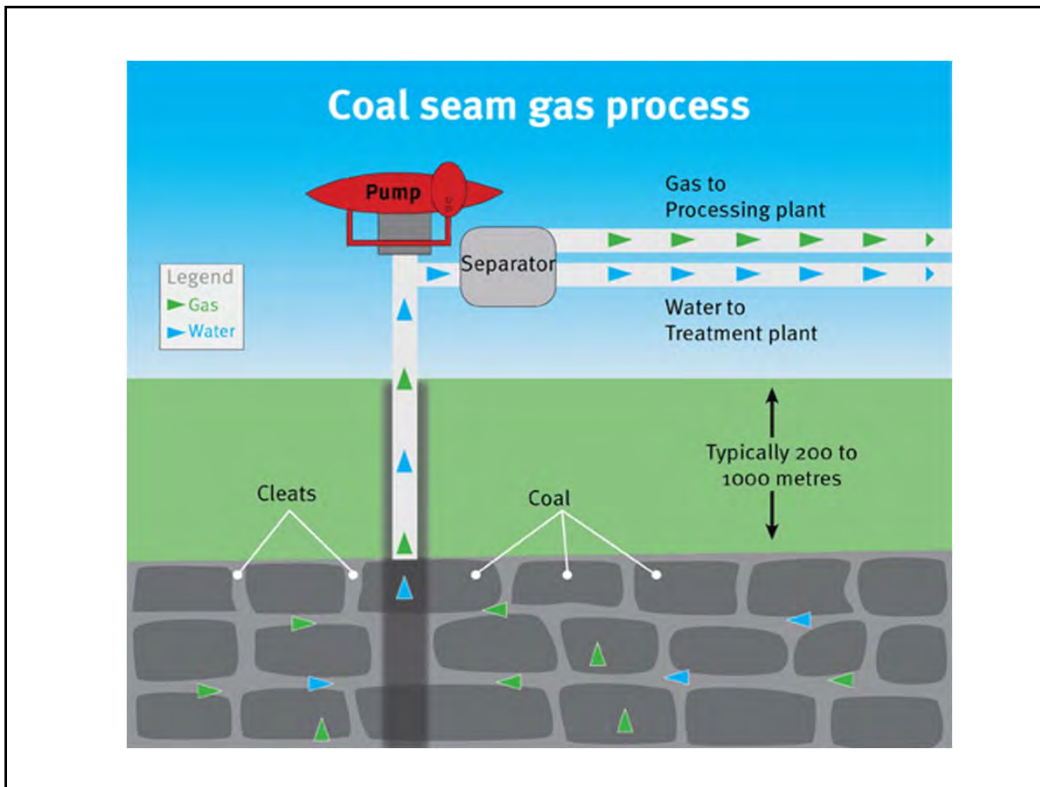
what happens next?

- production licence for RVPS
- exhibition of environmental assessment (EA) for Metgasco Lions Way pipeline
- more Reviews of Environmental Factors for exploration wells?
- more applications for production leases?
- new NSW Govt policy + changes to legislation?

2 what about the environmental impacts?

stages of exploration

- locating coal seams
 - seismic surveys and drilling (weeks)
- does coal seam have accessible gas?
 - drilling exploration bores (weeks)
- testing economic viability
 - pilot testing (months – a year) of gas production



potential impacts

- Groundwater contamination
- Reduced groundwater pressure
- Surface water contamination
- Fugitive emissions + air pollution

water risks

- Extraction of large volumes of water impacting on connected surface and groundwater systems
- Depressurisation of the coal seam may lead to:
 - changes in water availability in adjacent aquifers
 - land subsidence
- Disposal of large volumes of treated waste water may impact water quality and alter natural flow patterns
- ReInjection of treated waste water into other aquifers may affect water quality or availability in those aquifers
- Fracking may result in connection and cross-contamination between aquifers, impacting groundwater quality



3 approvals

petroleum law basics

- all petroleum (hydrocarbons) on or below surface of land are property of Crown
- regulated by NSW Petroleum (Onshore Act) 1991, administered by DII + Minister for Primary Industries
- also subject to NSW EPA Act, C'th EPBC Act + other environmental legislation
- royalties payable to Crown in most cases

types of titles

- exploration licences
 - up to 140 blocks + 6 years, may be renewed
- assessment leases
 - only used where licensee not ready to produce
- production leases
 - up to 4 blocks + 21 years
- low impact prospecting titles
 - under C'th Native Title Act

exploration

- granting of exploration permit subject to Review of Environmental Factors (REF)
- SEPP (Mining, Petroleum Production + Extractive Industries) 2007 says permissible without consent
- thus local environmental plans (LEPs) don't apply to exploration licences
- but compliance required with REF including neighbour notifications, monitoring + site rehabilitation

production

- development consent (where required) under EPA Act must be obtained before production lease can be granted
- Minister for Planning is consent authority for Part 3A major projects
- local council is consent authority for Part 4 projects
- both involve public exhibitions of environmental assessments
- more appeal rights for Part 4 projects that are designated development

environmental protection

- before deciding to grant a licence or lease, the relevant Minister must take into account “the need to protect the flora, fauna” etc on the land
- Review of Environmental Factors (REF) usually required under Part 5 of the EPA Act if development consent not required
- rehabilitation of site usually required (as specified in REF or consent)
- DPI monitors compliance with conditions of licence or lease, may make orders for remediation etc

coalition policy

- no moratorium on CSG or ban on fracking
- better standards to prevent inter-aquifer leakage
- protect prime agricultural land
- review access arrangements
- ban use of evaporation ponds

what else could be done?

- A triple bottom line assessment undertaken to identify a more comprehensive range of direct, indirect and cumulative impacts
- Any mining operations or associated infrastructure within NSW should be developed in accordance with the principle of Ecologically Sustainable Development
- A moratorium on CSG extraction and exploration while a strategic plan for CSM extraction in NSW is developed with full community and independent scientific input
- Banning of BTEX

4 landholder rights

landholder rights

- licence holder has no obligation to inform landholders of exploration licence application
- licence holder must attempt to negotiate access arrangement with landholder; otherwise determined by arbitrator or L+E Court
- compensation for access payable to landholder
- no mining on cultivated land without consent
- no exploration or mining within 20 metres of house, 50 metres of garden/orchard or on improved land without consent

