

A review of the use of climate change mitigation and adaptation measures in environmental impacts assessment in Western Australia.

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National Policy Context - mitigation

- Policy is largely ad hoc
 - Reduction target endorsed
 - 25 % reduction below 2000 levels by 2020 if the world agrees to stabilise GHGs in the atmosphere at 450 ppm
 - A form of cap and trade ETS remains Government's preferred strategy
 - Carbon tax gaining support
 - Alternative political party supports neither – prefer direct action
- Some direct action programs
- Difficult to formulate national EIA approach

National Policy Context - adaptation

- Position paper released
 - Guidance with emphasis on collaborations
 - Sets priorities for further policy work
 - coastal management;
 - water;
 - infrastructure;
 - natural systems of national significance;
 - prevention, preparedness, response and recovery to natural disasters; and
 - Agriculture.

Some good data

- On predicted impacts
- Absence of policy framework makes it hard to make decisions in EIA

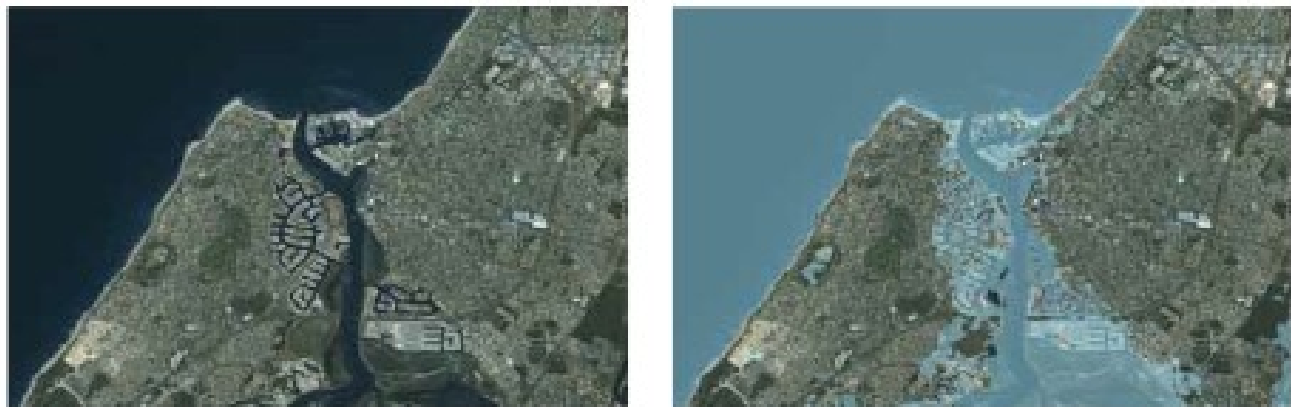


Figure 5.43 Images of Mandurah in 2009 and with simulated inundation from a sea-level rise of 1.1 metres using medium resolution elevation data (not suitable for decision-making). © CNES 2009 / Imagery supplied courtesy of SPOT Imaging Services and Geospatial Intelligence PTY LTD.

WA policy framework - mitigation

- 2004 Greenhouse strategy
 - Government agency direct actions
 - major industrial emitters to report greenhouse gas emissions annually
 - Proposed Greenhouse Abatement Fund for organic sequestration rights and credits generated by Government institutions
 - Greenhouse Registry for emission reduction and any sequestrations
 - General support for ETS
 - Travel demand management and improved public transport
- Not very useful for EIA

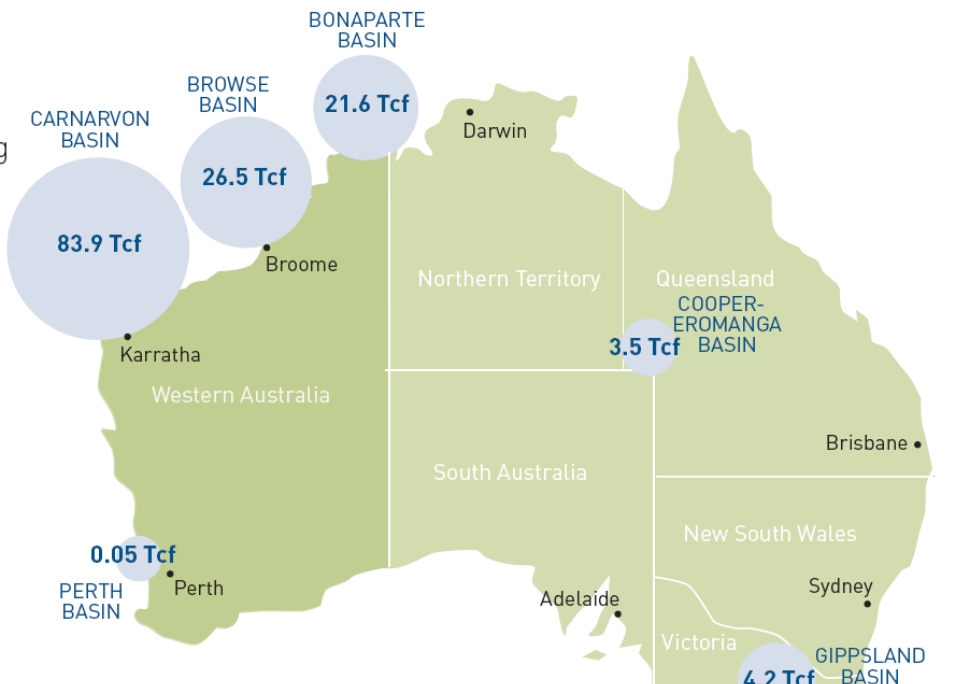
WA policy framework - adaptation

- The Voldemort of WA environmental policy
 - we do not speak its name



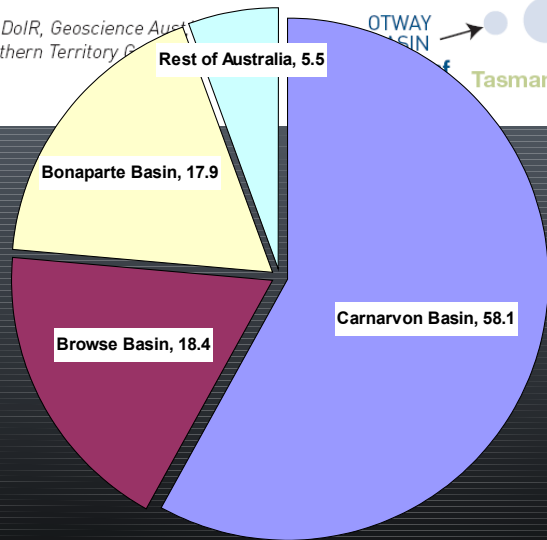
EIA in WA

- Carried out by independent authority – Environmental Protection Authority (EPA)
 - 5 person board with fulltime chair
 - 100 support staff
- Advises Minister for Environment – Minister decides
- Big focus on project EIA of resource development in NW – Asian markets (China)
 - LNG
 - Iron ore
- Pro-development State Government – what climate change?



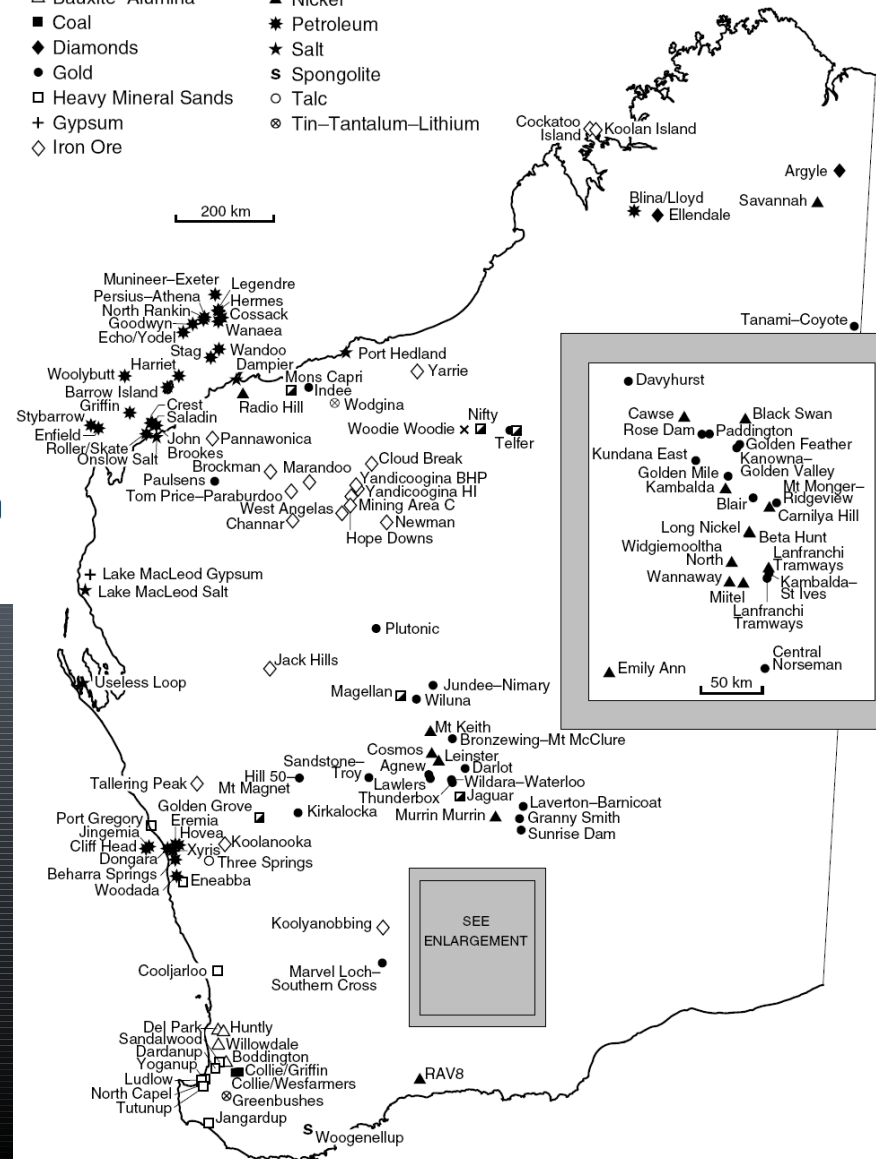
Australian gas reserves as a percent of total Australian Gas Reserves

Source: DoIR, Geoscience Australia and Northern Territory



MAJOR MINERAL AND PETROLEUM PROJECTS IN WESTERN AUSTRALIA

- Base metals
- △ Bauxite-Alumina
- Coal
- ◆ Diamonds
- Gold
- Heavy Mineral Sands
- + Gypsum
- ◇ Iron Ore
- × Manganese
- ▲ Nickel
- * Petroleum
- ★ Salt
- ⊞ Spongolite
- Talc
- ⊗ Tin-Tantalum-Lithium



Climate change and EIA in WA

- Single guidance policy on minimising GHG emissions
- Requires a management plan to address
 - Inventory GHG emissions
 - Specify GHG reduction measures/technology
 - Set targets for reduction
 - Consider carbon sequestration
 - offset through re-vegetation, or
 - Carbon Capture & Storage through geological and chemical means
- Difficult to do much else in absence of State and National policy
- No adaptation policy

Performance

- 45 proposals since 2002 EPA considered raised CC issues
- Mitigation
 - Coal fired power stations and stages – 6;
 - Gas fired power stations (all or part of project) 15;
 - LNG proposals – reservoir gas – 4;
 - Other high energy using projects – 11;
 - Coal gasification – 1;
 - NOx – 1;
 - SEA of future power uses – 1
- Adaptation
 - Future water supply (groundwater) – 1
 - Audit of existing groundwater supply - 1
 - SEA of forest management plans 2
 - SEA for fire management plans 2

Conditions

- Mitigations
 - Most had requirement for GHG mitigation management plan without offsets or CCS;
 - 2 coal fired power stations were required to be CCS ready
 - 1 LNG plant has to offset (biological) reservoir CO₂;
 - 1 LNG plant has to do CCS;
 - 2 desalination plants (high energy using) to use wind power (part of grid).

CCS LNG proposal - Gorgon

- \$50 billion
- 12% gas reservoir CO₂
- 6% of WA's total GHG
- Barrow Island A class nature reserve
- Oil extraction from Island since 1960s
- Ideal for CO₂ storage
- Total cost \$2 billion



SEA of future power supplies

- Stated preference for power supplies
 - conservation and efficiency improvements;
 - renewable energy sources
 - gas, including combined cycle, turbines;
 - new technology coal plants;
 - old technology coal plants; and
 - petroleum fuel plants.
- Individual projects
 - fuel source with higher GHG intensity (coal)
implement “appropriate measures to mitigate GHG emissions”

Conditions

- Adaptation
 - Proposed groundwater supply
 - Noted reduced water recharge due to CC
 - Monitor impacts and adaptive management,
 - Audit of existing groundwater supply
 - Noted reduced water recharge due to CC
 - Advised current use not sustainable
 - Forestry management plans
 - Concern for drying climate, rising temperature on yields and biodiversity
 - Fire management plans
 - Concern about changing rainfall, but uncertain about response, more research

Major weaknesses of EIA and CC

- Mitigation raised but response minimal
- Adaptation raised selectively – response generally more research
- Adaptation for urban areas
 - Coastal setback for sea level rise (acute and chronic)
 - Inland storm surges

EIAs on urban developments with adaptation implications

- 24 since 2002 – none mentioned CC adaptation
- Coastal sea level rise and erosion
 - 5 coastal developments
 - 1 coastal large lot subdivision
 - 5 Marinas
 - 1 island tourist development
 - 2 coastal tourism (mainland)
 - 1 major coastal stability works
- Inland low lying area subject to storm surge
 - 7 residential (one for over 90,000 people)
 - 1 SEA for drainage in whole of Perth
- Both coastal and inland inundation issues
 - 1 major SEA (Bunbury)

Conclusions

- EIA in WA considers mitigation for major GHG producing projects – minimise GHG emission
- Limited because of weak National and State policy framework
- Adaptation less well done
 - Water futures a start
 - Forest and fire management – uncertain & more research
 - Urban adaptation – absent
- Also reflects weak National and State policy framework
- In short – EIA in WA waiting national response
 - Reasonable for mitigation?
 - Not for adaptation.

Thank you

