



# Gorgon Project Carbon Dioxide Injection Project

March 2010



## Project Ownership

The Gorgon Project is in an unincorporated Joint Venture consisting of:



Chevron (Operator) 47.333%



ExxonMobil 25%



Shell 25%



Osaka Gas 1.25%

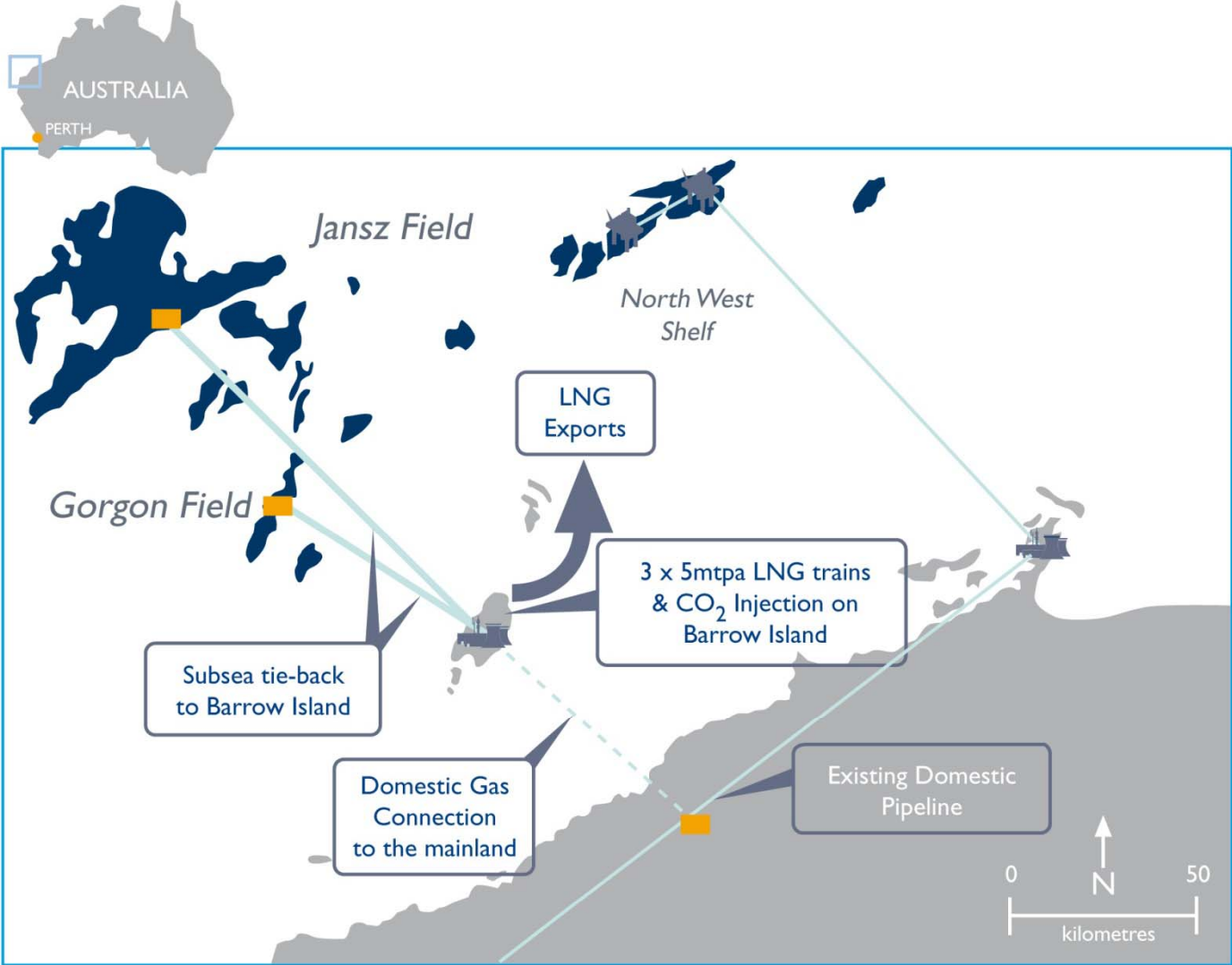


Tokyo Gas 1%



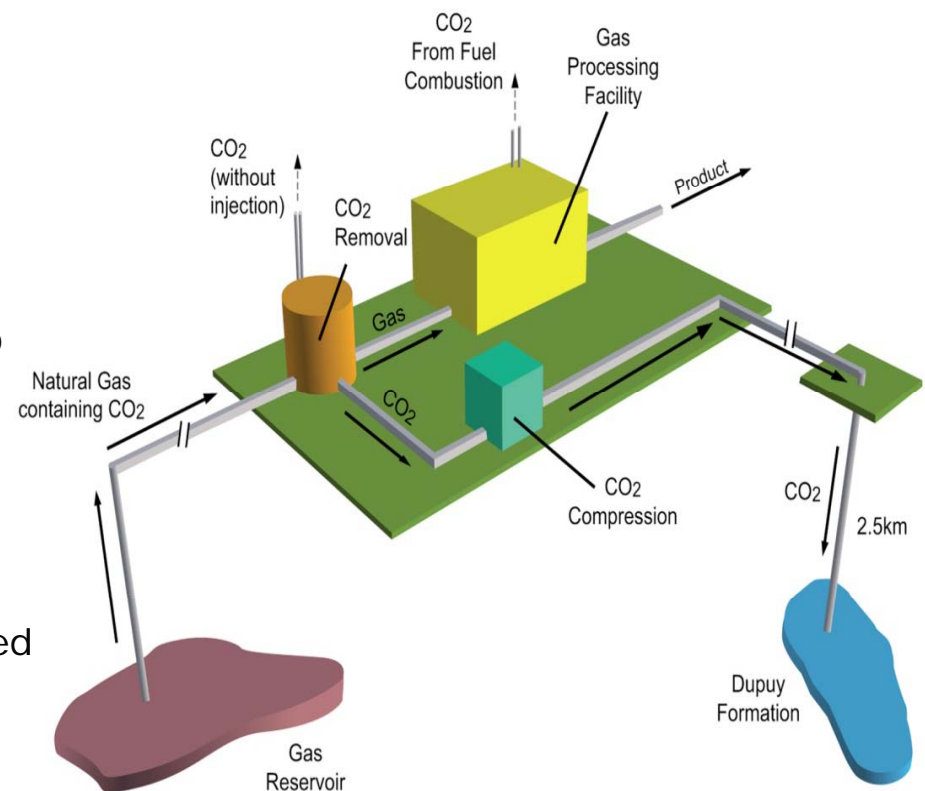
Chubu Electric Power 0.417%

# Gorgon Project overview



# Carbon Dioxide Injection Project

- The first project in Australia to significantly reduce emissions by the underground injection of carbon dioxide
- Project emissions expected to be reduced by approximately 120 million tonnes over the life of the Project
- \$150+ million spent on investigation and development to date
- Number of world firsts
  - First geosequestration legislation
  - First project to undergo detailed environmental impact assessment (including public review and comment)
- The Australian Government has committed \$60 million to the Gorgon Project as part of the Low Emissions Technology Demonstration Fund (LETDF)



# Field Layout

Facilities include –

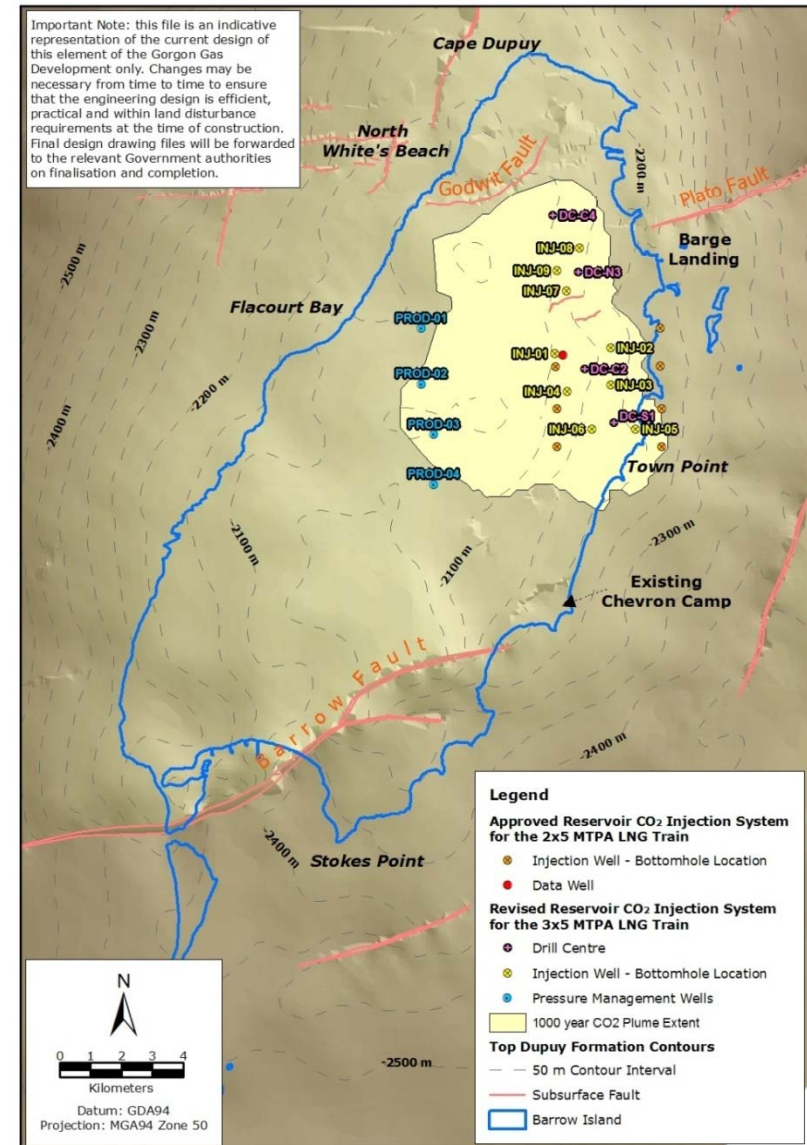
- CO<sub>2</sub> compressors integrated into gas processing facility
- Carbon dioxide pipeline
- 8-9 injection wells drilled from 3 or 4 drill pads
- ~4 pressure management wells

Fit for purpose monitoring program

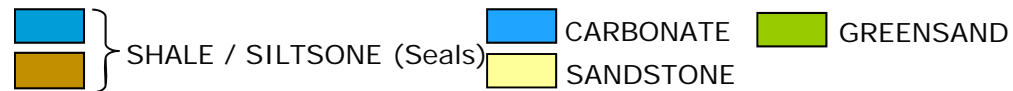
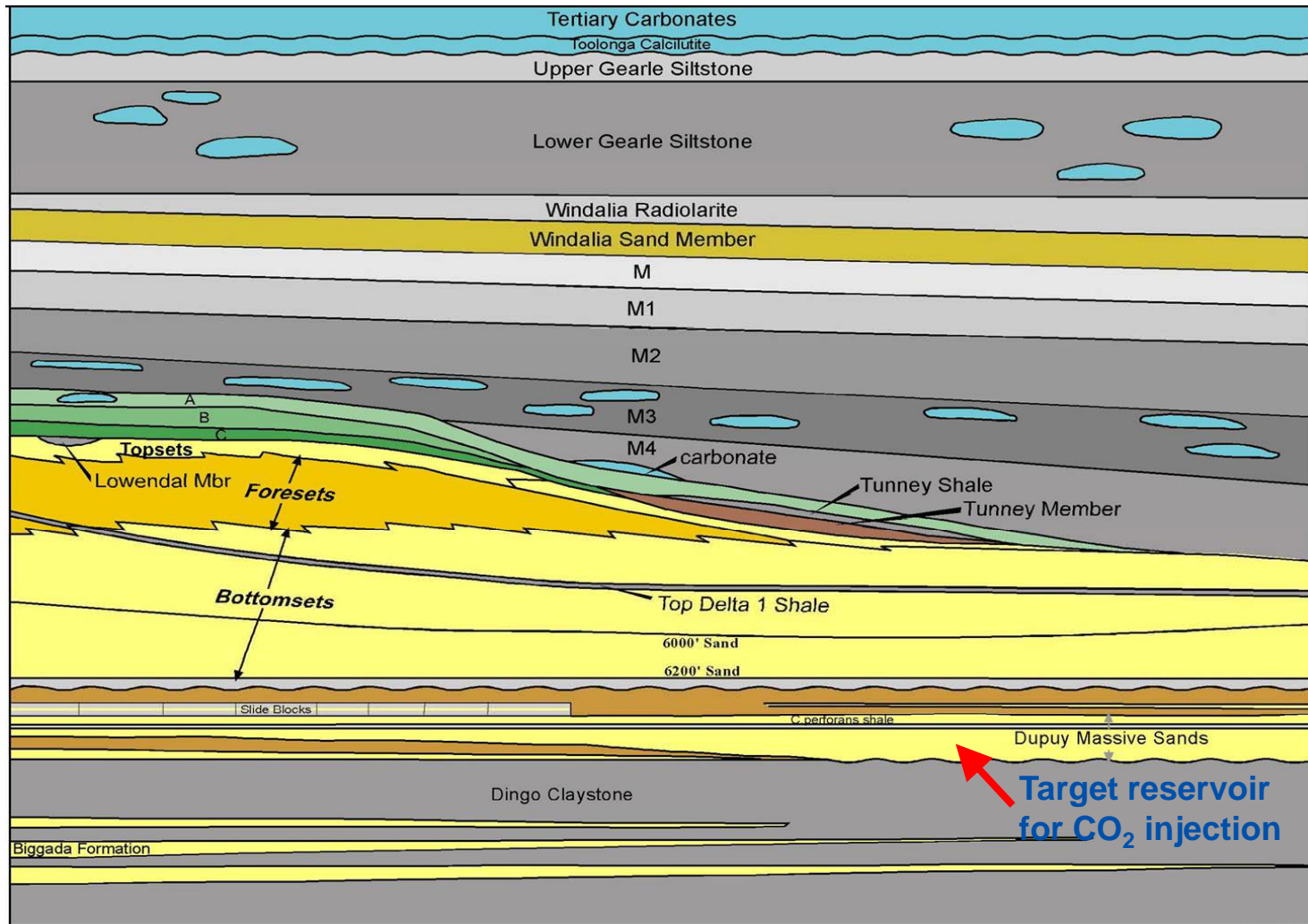
- Repeat seismic data
- Observation wells
- Near surface soil gas monitoring

Program for ensuring existing well penetrations in the plume area do not provide leakage pathways

Commitment to make data from the ongoing monitoring available to the public

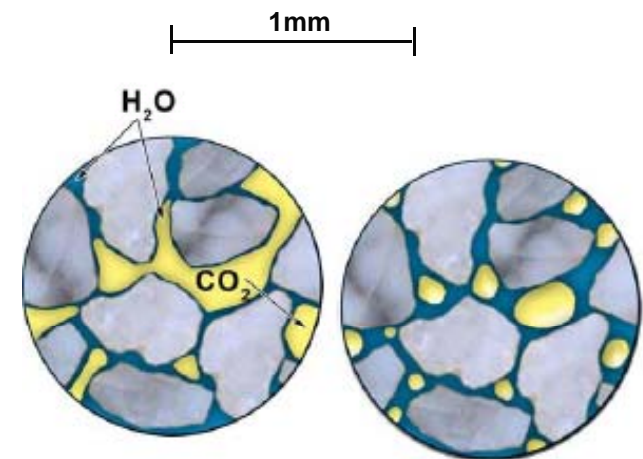
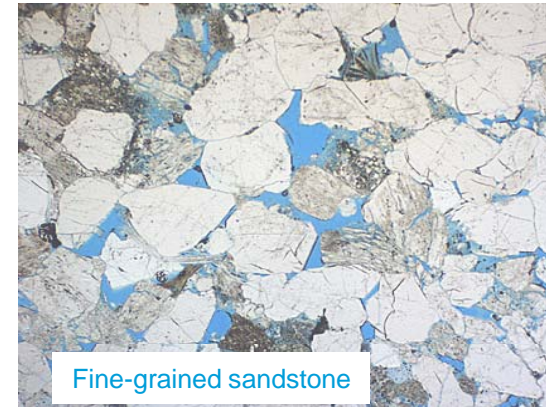


# Barrow Island Stratigraphy



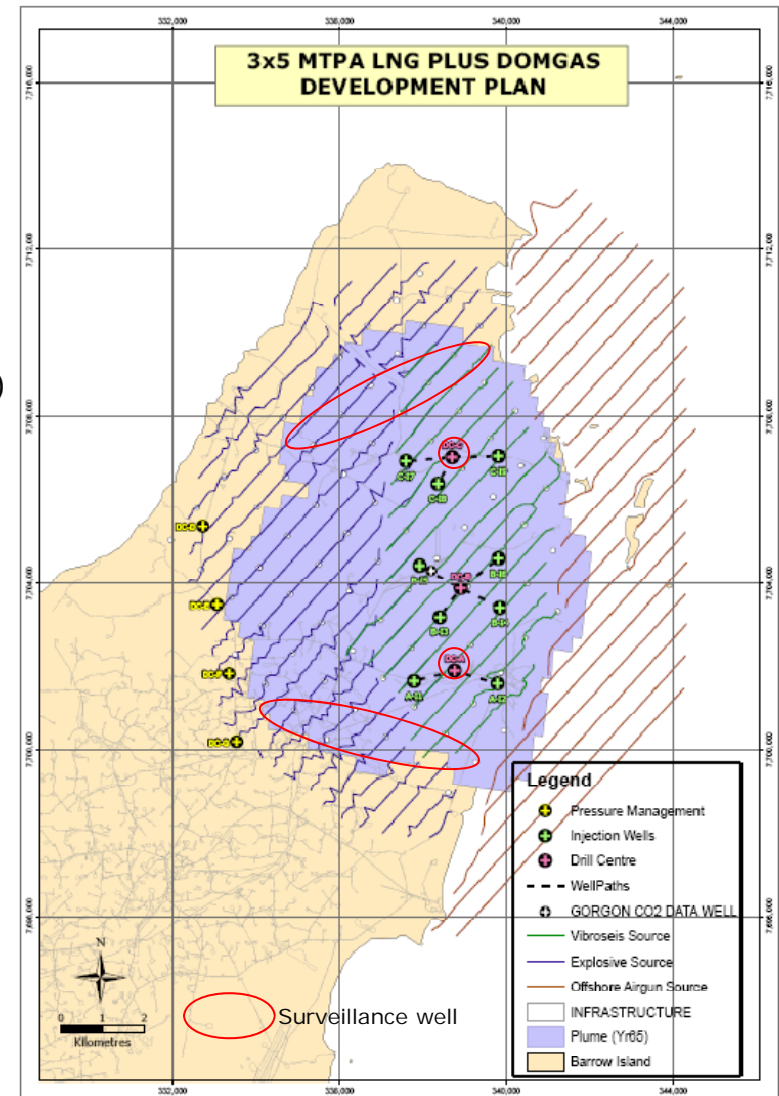
# Dupuy Containment Mechanisms

- Two main trapping mechanisms
  - CO<sub>2</sub> solution into formation water.
  - Residual gas trapping.
- Ideal rock has moderate permeability with many baffles = Dupuy Formation
- Other mechanisms
  - Large scale geometric trapping not required (smaller scale structural/stratigraphic trapping will occur).
  - Dupuy Fm - chemically inert so mineralogical trapping is a longer term effect.



# Integrated Monitoring Plan

- CO<sub>2</sub> Injection & Pressure Management Wells
  - Wellhead pressure and flow rate
  - Continuous down-hole pressure
  - PLT & casing/cement integrity logs
- Surveillance Wells – Vertical distribution and volumetric calculation
  - Continuous downhole pressure (Barrow Gp)
  - Saturation & casing/cement integrity logs
  - Vertical Seismic Profiling (VSP)
- 4D Surface Seismic – Lateral extent and broad vertical distribution
  - 3D baseline survey
  - Repeat 2D and 3D surveys determined by viability of seismic for monitoring plume position
- Soil Gas - Verification
  - Soil gas flux sampling over the 3D seismic source grid and at potential near-surface seepage points
- Surface – Safety & environment
  - Pressure sensors and CO<sub>2</sub> detection equipment within compression and pipeline facilities





## Moving forward

- Project received its Final Investment Decision September 2009
- Construction activities have commenced
- Injection of reservoir carbon dioxide anticipated end 2014

