

# Onshore Energy Security Program — Onshore Petroleum Project

Between 2006 and 2011, Geoscience Australia has acquired deep crustal seismic reflection and magnetotelluric surveys as a major component of the Australian Government's Onshore Energy Security Program (OESP). All surveys have been conducted in collaboration with the relevant state or NT geological survey. The Seismic Acquisition and Processing Project provides precompetitive data for developing new geological frameworks for assessment of onshore hydrocarbon, geothermal and uranium resources. The Onshore Petroleum Project provides interpretation of the seismic data in frontier basins with petroleum potential and an assessment of the petroleum prospectivity of these basins. Seismic data can reveal basin and crustal architecture for potential hydrocarbons, image potential hot rocks (granites) for geothermal energy, and identify potential uranium deposit settings, such as craton margins and unconformities.

Over 4800 km of deep seismic reflection data have been collected from 2006 to 2009 for the Onshore Energy Security Program:

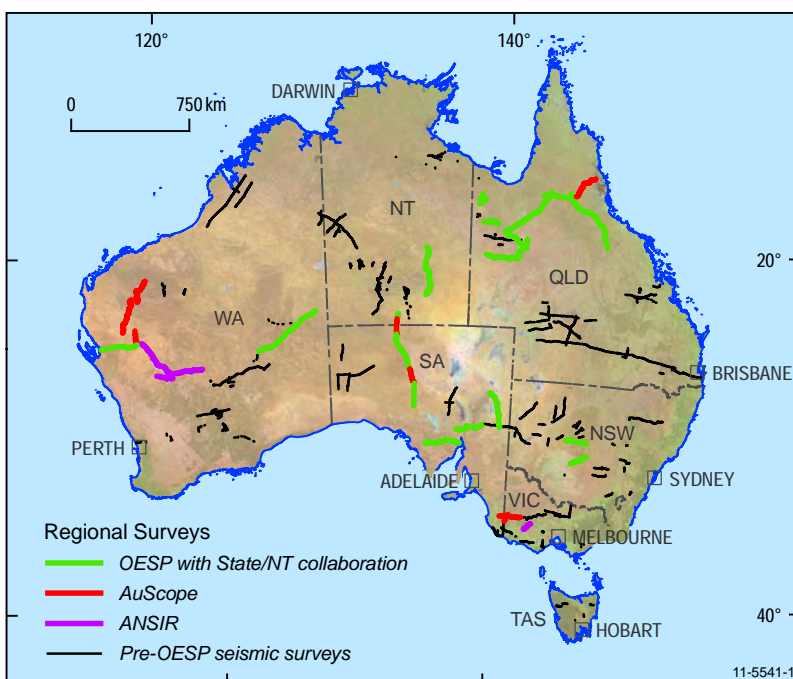


Figure 1. Locations of Onshore Energy Security Program seismic surveys across Australia.

1) 2006 Mt Isa (Qld)—900 km to identify uranium, petroleum and geothermal potential: Burke River Structural Zone of the Georgina Basin.

2) 2007 Mt Isa-Georgetown-Charters Towers (Qld)—1387 km to identify uranium, petroleum and geothermal energy systems: Millungera and Eromanga-Carpentaria basins.

3) 2008 Rankins Springs (NSW)—230 km to assess unexplored troughs in the southeast Darling Basin for hydrocarbon potential.

4) 2008 Gawler-Curnamona-Arrowie (SA)—550 km to evaluate geothermal and uranium potential, and to assess hydrocarbon potential in the Arrowie Basin.

5) 2008 Gawler-Officer-Musgrave-Amadeus (SA-NT)—635 km to identify uranium, petroleum and geothermal energy systems: eastern Officer Basin and the southern margin of the Amadeus Basin.

6) 2009 Georgina-Arunta—373 km to evaluate petroleum and uranium systems in the Georgina Basin, northeast Amadeus Basin and Arunta Region.

7) 2011 Yilgarn-Officer-Musgrave (WA)—487 km to evaluate and to assess hydrocarbon potential of the western Officer Basin in Western Australia.

8) 2011 Southern Carnarvon (WA)—259 km to identify petroleum and geothermal energy systems of the Byro Sub-basin of the onshore Carnarvon Basin, Western Australia.

Once it becomes available all data can be downloaded at: <http://www.ga.gov.au/minerals/research/national/seismic/index.jsp>

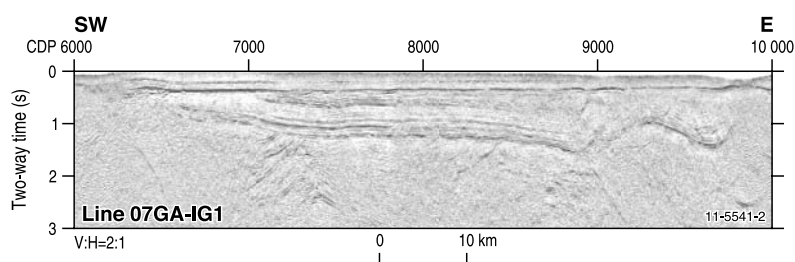


Figure 2. 2007 Mt Isa-Georgetown-Charters Towers (Qld) – Millungera and Eromanga-Carpentaria Basins.

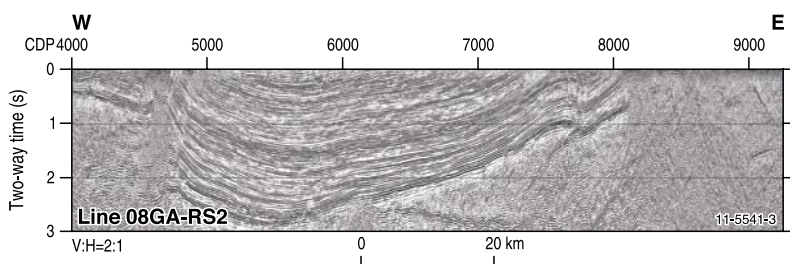


Figure 3. 2008 Rankins Springs (NSW) – South East Darling Basin

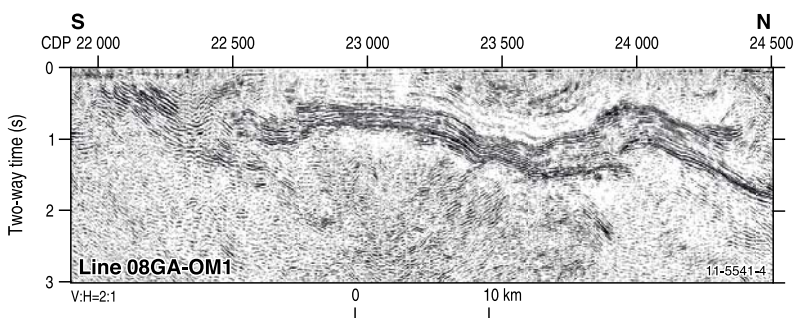


Figure 4. 2008 Gawler-Officer-Musgrave-Amadeus (SA-NT) – eastern Officer Basin

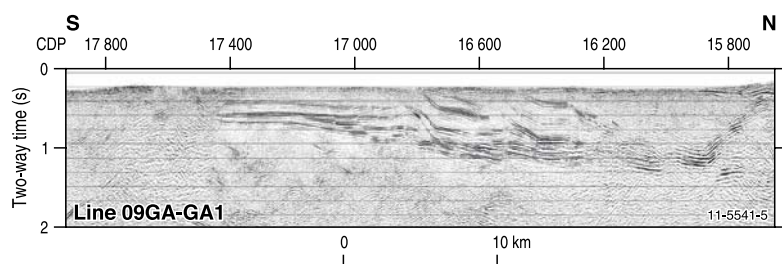


Figure 5. 2009 Georgina-Arunta (NT) – Amadeus Basin

During 2010 and 2011 several products from the onshore petroleum project became available:

1. The Arckaringa, eastern Officer and southern Amadeus Basins, IN: Geoscience Australia Record 2010/039: Extended abstracts from the GOMA Seismic and MT Workshop 2010 (R.J. Korsch) <http://www.ga.gov.au/servlet/BigObjFileManager?bigobjid=GA18799>
2. Carr, L.K. and Korsch, R.J., 2011. Architecture of the Amadeus and Georgina basins, Northern Territory, based on Deep Seismic Reflection Line 09GA-GA1. In: Annual Geoscience Exploration Seminar (AGES) 2011. Record of abstracts. Northern Territory Geological Survey, Record 2011-003, 81–85. [http://www.nt.gov.au/d/Minerals\\_Energy/Geoscience/index.cfm?header=Publications%20and%20Products](http://www.nt.gov.au/d/Minerals_Energy/Geoscience/index.cfm?header=Publications%20and%20Products)
3. Korsch, R.J., Struckmeyer, H.I.M., Kirkby, A., Hutton, L.J., Carr, L.K., Hoffmann, K.L., Chopping, R., Roy, I.G., Fitzell, M., Totterdell, J.M., Nicoll, M.G. and Talebi, B., 2011. Energy potential of the Millungera Basin: A newly discovered basin in north Queensland. APPEA Journal and Conference Proceedings, vol. 51, 295-332.
4. Geoscience Australia Record 2011/010: Gas shale potential of the Amadeus and Georgina Basins, Australia: preliminary insights. <http://www.ga.gov.au/servlet/BigObjFileManager?bigobjid=GA19305>

#### FOR FURTHER INFORMATION:

##### Interpretation

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