

The Underground Gas Storage Potential of The Stanbury Basin

Underground storage of sales quality gas is a technique widely used to better manage variations in consumer demand. Both sales gas and ethane are currently stored in depleted raw gas reservoirs below the Moomba plant in northeastern South Australia. MESA has now identified subsurface geological conditions which may be suitable for development of underground gas storage within 100 km north of Adelaide in the Two Wells - Port Wakefield area.

The establishment of ~10 PJ of gas storage in the Adelaide area, which would provide approximately three weeks average supply, would have the following benefits:

- greater flexibility in operations of the Moomba-Adelaide pipeline
- a reduction in gas field operating costs
- facilitation of competition in gas supply
- assistance in reducing gas prices
- allow ETSA to be more competitive in electricity supply both locally and interstate
- greater physical security of supply.

Attempts during the 1980s to define potential areas for gas storage near Adelaide were abandoned when no suitable host rocks were defined. Recent work by MESA has identified an area where relatively undisturbed Cambrian rocks occur at depths of interest for gas storage (~500 m). The location of suitable sites for gas storage outside of depleted gas field reservoirs is a difficult task, although achieved in the vicinity of Paris and Moscow.

Suitable reservoirs, overlying sealing strata, and gas trapping mechanism must be identified and tested to ensure that gas can be safely stored and economically produced. MESA has developed a package of technical data on the storage possibilities of the Northern Adelaide Plains to attract private sector investment. The Department is also drafting proposed amendments to the Petroleum Act to ensure appropriate licensing and regulation of gas storage exploration and development activities.

If exploration for gas storage is undertaken in the area, the initial program is likely to involve a relatively small seismic survey plus the drilling of several wells to ~1,000 m. A data package containing results of the Gas Storage Project is now available on CD-ROM from MESA. For further information contact David Gravestock at MESA (ph. 08 8274 7633).