The Limestone Coast Project – a unique geothermal project targeting 'blind' geothermal resources.

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INTRODUCTION

The Limestone Coast Project represents a new concept in the exploration for conventional geothermal resources, a first for Australia. It targets hot geothermal brines in buried (or blind) reservoirs. The key geological components of this new exploration model comprise:

- A region of high heat flow;
- A productive reservoir formation; and
- A thick low thermal conductivity layer acting as an insulating blanket.

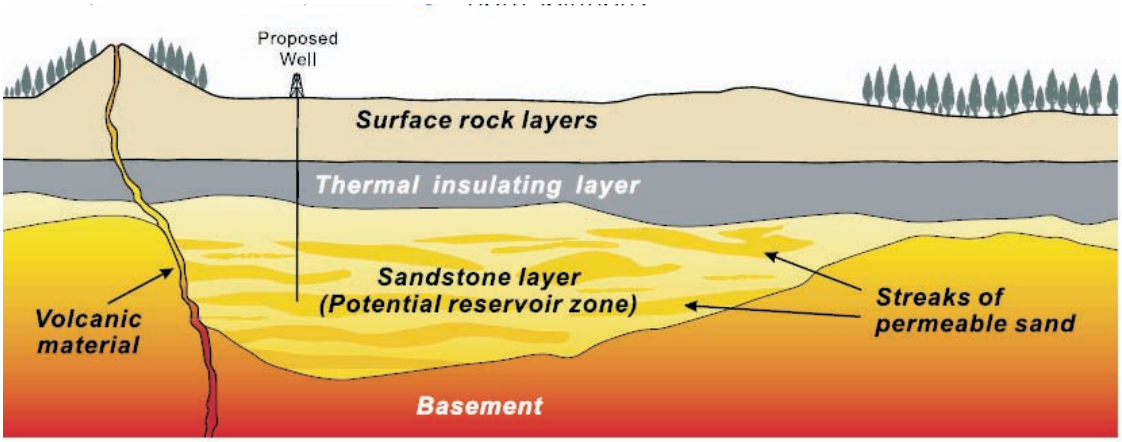

Figure 1. Basement heat source for a sedimentary reservoir.

A schematic diagramme illustrating the geological setting of the Limestone Coast Project is shown in Figure 1.

Extensive geological and geophysical studies as well as modelling have been carried out by Scopenergy, whom Panax recently acquired. This work has confirmed that all components are present in three buried sub-basins in the Limestone Coast area. High heat flow has been established through temperature measurements in 19 existing petroleum and 26 water wells. The regional presence of a productive reservoir formation (the Pretty Hill Formation) and the presence of a thick insulating layer has been inferred from detailed stratigraphic studies of petroleum wells in the nearby Penola Trough (Katnook wells), as well as from re-interpretation of open file seismic data, magnetic and gravity data.

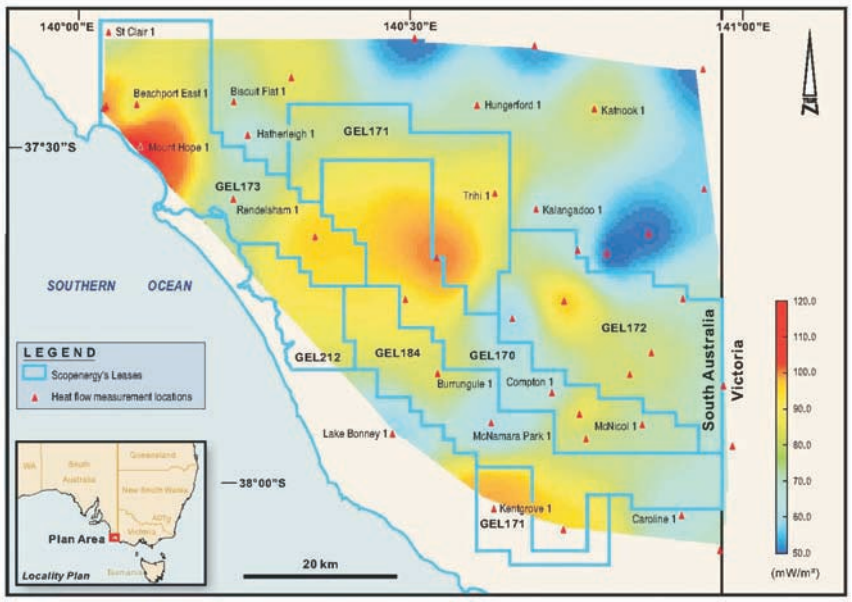

Figure 2. Heat flow map of the Limestone Coast Geothermal Project area. The areas shaded yellow to red indicate heat flow above 90 MW/m².

The high heat flow in the region (Figure 2) is attributed to a combination of the geologically speaking recent volcanism (4,000 to 2,000,000 years ago), crustal thinning during the Otway Basin initiation and anomalous basement heat production.

As a result of the studies carried out to date, three target areas have been delineated (see Figure 3):

- The Rivoli Trough;
- The Tantanoola Trough;
- The Rendelsham Trough.

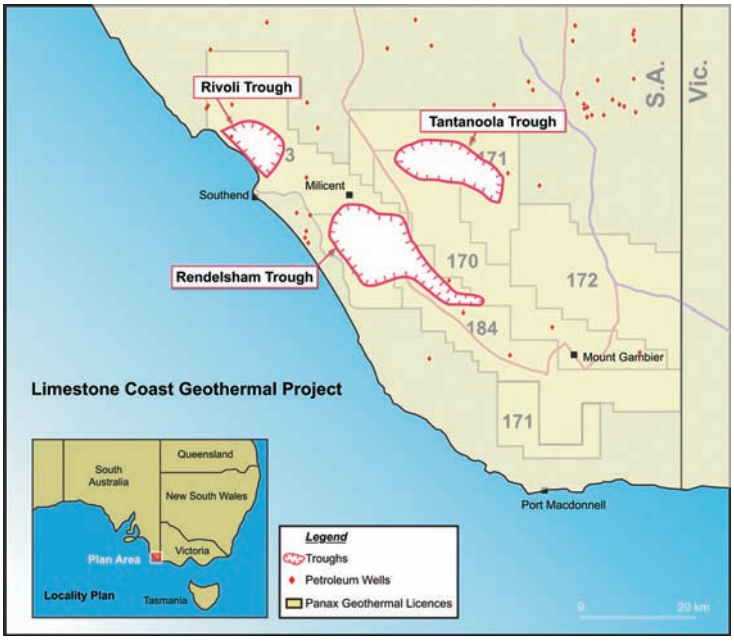

Figure 3. Outlined troughs indicate prospective geothermal areas.

Detailed work by Dr Gaeme Beardsmore has estimated that temperatures ranging from 170 °C – 200 °C will occur at depths of 3,500 m to 4,000 m.

Using this information, and SRK's Potential Reservoir volume estimate, GeothermEx (a prominent US based geothermal consultancy group) has estimated the total generating potential of the above three troughs. As there is not yet an accepted standard within the geothermal industry for the methodology for assessing the geothermal energy potential from a reservoir, GeothermEx used three different approaches; the US Geological Survey Approach, the Single Phase Heat Extraction Approach, and the *In-Situ* Vaporisation Model. Results compared closely, increasing confidence in the estimates, with results ranging from 1,590 MWe to 1,627 MWe for a 30 year life.

This project could represent a new geothermal exploration concept which will open up the potential for geothermal energy to be used globally in a range of geological settings.

Detailed plans are in place to drill a 'proof of concept' deep appraisal well in the first quarter of 2009 (January – March 2009).