



AuScope Geothermal Demonstrators Latrobe Valley, Victoria, Australia

2010-06-15

AuScope aims to establish world-class research infrastructure to enable the characterisation of structure and evolution for the Australian continent. AuScope's Simulation, Analysis and Modelling capability makes it possible to draw together geological data-products and analysis software, for the purpose of developing quality scenario models. This allows researchers to test geological hypotheses and to answer large-scale "what-if" questions relevant to Australia's geological resources.

The following is an example "what-if" scenario. The model below shows the geothermal potential of Victoria's Latrobe Valley given the best available data. It shows the insulating effects of the coal and geothermal characteristics pioneered by Professor Mike Sandiford's research group, and thus building confidence in deep data-acquisition targeting. This activity has provided Geoscience Victoria with the opportunity to explore new engagements with the community using its value-added data products.

Leaders:

Steve Quenette (Monash University)
Dr Tim Rawling (GeoScience Victoria)
Alex Musson (University of Melbourne)
Prof Mike Sandiford (University of Melbourne)

Description:

The Latrobe Valley is nestled in Victoria's Gippsland Basin and provides, through large reserves of brown coal, more than 80% of the state's electricity. This resource-rich region is of particular interest to geothermal energy and CO₂ geosequestration in a future carbon-constrained and energy-avid economy.

This particular model (Figure 1) shows a 155°C geotherm within the depths of 3km and 5km with arbitrary values for material conductivities and basal heat flow. Other "what-if" parameter scenarios can be tried at the Geothermal Model Library (<http://www.underworldproject.org/geothermal>).

The AuScope software infrastructure Underworld (<http://www.underworldproject.org>) offers the novel capability of metre-scale resolution near the coal, yet resolving to depths of tens of kilometres. The 3D model and source data information can be found through the AuScope Discovery Portal's geothermal layer (<http://portal.auscope.org>).



Figure 1: 3D Underworld model of Latrobe Valley geothermal properties, visualised using gLucifer (to view and rotate interactively in 3D, open in Acrobat Reader v. 8.0 or higher).

For more information contact:
Steve Quenette (Steve.Quenette@monash.edu)