The large area of the Great South Basin (100,000 sq. km) and promising results from four of the eight petroleum wells make it one of the most prospective frontier basins around New Zealand. We present an overview of the tectonic setting of the basin, including reconstruction of its Cretaceous rift position adjacent to the Canterbury, Taranaki and Gippsland basins; we summarise results from previous exploration and discuss the implications for basin architecture and petroleum potential; and we present new seismic reflection data from the basin. We conclude that large volumes of gas, condensate and oil have been generated within the basin and petroleum is likely to be trapped in some large accumulations.