Day: Wednesday 26 April **Session: 4**
Time: 5:25pm

New Zealand's Diverse Sedimentary Basins

Chris Uruski
OMV New Zealand Limited

OMV became active in New Zealand in 1999 after acquiring a 30% share of the Maari oil field. Since then, OMV's presence in New Zealand has steadily grown, resulting in the current position (Fig. 1) where OMV is the largest acreage holder of exploration and production licence acreage in New Zealand. Our exploration program is underpinned by our share in production from the Maari oil field and from the Maui and Pohokura gas-condensate fields.

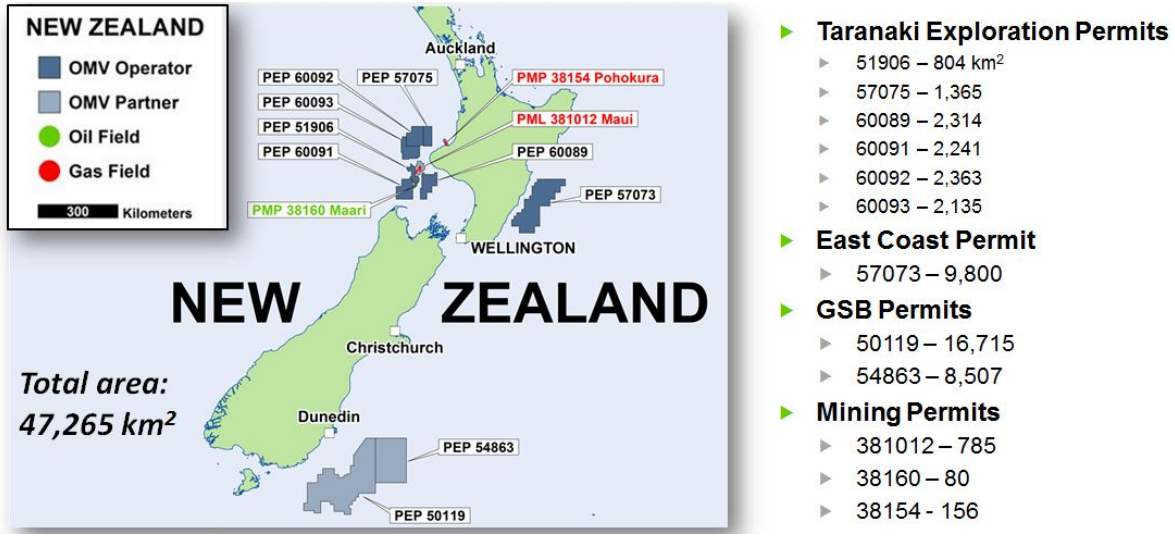

Figure 1: OMV's current acreage in New Zealand basins

Today, OMV is the operator or a partner in exploration permits in three major sedimentary basins around the country; Taranaki (NWNZ), the East Coast (NENZ) and the Great South Basin (SENZ; Fig. 2). The geology of these regions is varied and complex, while lightly explored with the drill bit.

The Taranaki Basin extends from onshore across the continental shelf and into the New Caledonia Trough, extending for more than 1,000km within New Zealand's maritime territory and forming a component of a much larger system of interconnected depocentres including the Northland and Reinga basins. Basin formation started with back-arc rifting along the Gondwana margin and continued with deposition of coal-bearing source rocks during the Late Cretaceous and Paleogene. Development of the present plate boundary through the Neogene led to inversion of many structures and the formation of the traps at Maui, Pohokura and Maari as well as other fields in the basin.

The East Coast Basin formed part of the Gondwana margin subduction complex until the Hikurangi Plateau docked and initiated a long development as a passive margin. Neogene subduction gathered up thick sediments deposited across the margin into a large-scale fold and thrust belt that has never been properly explored despite numerous oil and gas seeps onshore and good shows in all three offshore wells.

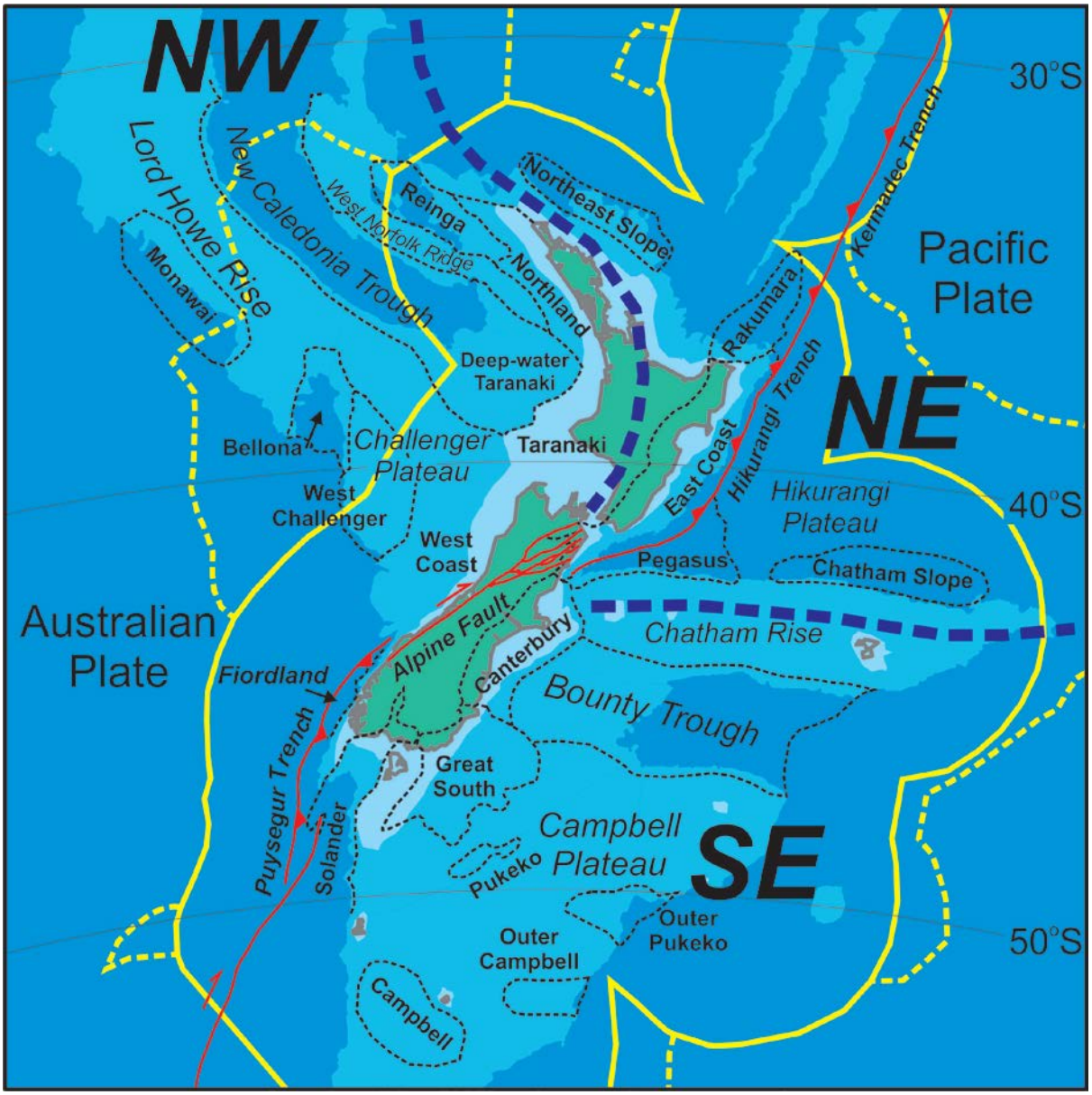

Figure 2: New Zealand's sedimentary basins are grouped by geographic location as well as geological history into three main regions; NW, NE and SE. The solid yellow curves denote New Zealand's exclusive economic zone and the dashed yellow curves mark the edge of New Zealand's extended continental shelf.

The Canterbury-Great South Basin is part of a relatively shallow region of continental crust that contains a number of depocentres. Rifting created accommodation space that was filled by thick sediments of Cretaceous age stating with terrestrial units including coal measures and eventually being inundated by marine deposits. Clastic sediments continued to be supplied to the western side of the basin, while carbonates were deposited in the east. Neogene compression affected only the western part of the basin. An active petroleum system is proven in this basin.

Understanding of the geology of these basins is the key to exploration success and OMV is increasing its understanding by data acquisition and by thorough application of science and knowledge combined with a considered investment policy

Speaker Biography

Chris Uruski worked for GNS Science around the fringes of the New Zealand petroleum industry for 25 years before taking the plunge and joining OMV about five years ago. Despite the change in role from gamekeeper to poacher he remains convinced that only the surface has been scratched of New Zealand’s petroleum potential.