



## ORAL PRESENTATION

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# New Zealand's Canterbury Great South Basin - An emerging Deep-Water Province in a Frontier Basin?

Alexander Wunderlich<sup>1</sup>, Jan Mayer<sup>1</sup>, Sarah Cutten<sup>1</sup>, Antony Harrison<sup>1</sup>, Callum Kennedy<sup>1</sup>, Alan Clare<sup>1</sup>

<sup>1</sup>OMV, New Zealand

*alexander.wunderlich@omv.com*

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The Canterbury Great South Basin covers about 160,000 km<sup>2</sup> off the southeast coast of the South Island of New Zealand. It formed during the Cretaceous as a rift basin and has experienced only very minor deformation (along its northwest margin) since then. The total sediment thickness is greater than eight km in the Central Sub-basin. Water depths range from 50 to 1600 metres.

Only 14 wells have been drilled in the basin, including in deep-water locations, but only one on 3D seismic. Despite being a frontier basin, 11 wells have encountered hydrocarbons in various syn- and post rift play intervals, and four technical successes have been made, proving a working petroleum system.

The eastern deep-water area of the basin, including acreage held by OMV New Zealand, is undrilled and the details of its history remain largely unknown. OMV has carried out a rigorous play-based exploration workflow that shows the main critical risks for the basin and the key syn- and post rift plays. It also offers the possibility to integrate dynamic well data and well failure mechanisms, so that early exploration activities can be focussed on the important aspects of the most valuable plays. This basin-focused approach and the in-depth petroleum system understanding forms the basis for OMV's subsequent play focused approach, which quantifies the various aspects of the system within each play and uses tools such as common risk segment mapping to highlight sweet spots within each play.

This approach has highlighted significant opportunities within the Cretaceous post-rift play, consisting of net transgressive shallow marine stacked sandstones that are compactionally draped over large basement highs. It also quantifies the exploration upside in OMV's operated PEP 50119, where we show that a proper basin and play focused workflow, coupled with an innovative pre-stack seismic interpretation workflow has added a material exploration opportunity for OMV with tremendous follow-up potential.

## SPEAKER BIOGRAPHY

Alexander Wunderlich is the Geoscience Team Lead for Australasia in OMV New Zealand. Alex holds a MSc in Geology from the TU Bergakademie Freiberg in Germany and the Colorado State University in Fort Collins, USA. He has worked in New Zealand since February 2015, having previously worked for OMV in Madagascar as an Exploration Geologist for the Company's operated and non-operated interests in the Morondava Basin, Eastern, and Western Africa. Prior to joining OMV Alex has worked in technical exploration positions for operating companies in Norway and Germany, focusing on the North Sea, Norwegian Sea, and the Barents Sea.