GAS HYDRATE RESEARCH IN NEW ZEALAND – OVERVIEW ON LATEST RESULTS

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ABSTRACT
Gas hydrates offshore New Zealand have recently attracted significant interest. New Zealand’s only known large gas field, the Maui field west of the North Island, is being depleted. Other sizeable conventional gas fields have not yet been discovered. The Hikurangi Margin east of New Zealand’s North Island on the other hand may contain economically promising gas hydrate deposits. Four major research cruises have been conducted in the past five years to study gas hydrates on this margin. We are analyzing results from these cruises as part of the first dedicated research programme for gas hydrates in New Zealand (GHR, Gas Hydrates Resources). Our key objectives include improving our knowledge of reservoir rocks, characterization of gas hydrate reservoirs, and a better understanding of the dynamics of gas hydrate systems. Furthermore, first steps towards production modelling for the Hikurangi Margin and an assessment of the impact of gas hydrate production to biological seafloor communities are planned. While focussing on the Hikurangi Margin, we are also searching for evidence for gas hydrates elsewhere. Finally, we present first results from the R/V Sonne voyage NEMESYS (New Zealand Methane Seep Systems) in March and April 2011 on the Hikurangi Margin.

Keywords: gas hydrates, New Zealand

NOMENCLATURE
BGHS: Base of gas hydrate stability
BSR: Bottom simulating reflection
CDP: Common depth point
EEZ: Exclusive Economic Zone
FRST: Foundation of Research, Science, and Technology
GHR: Gas Hydrate Resources
NEMESYS: New Zealand Methane Systems
NewVents: New Zealand Vent Sites
tcf: trillion cubic feet
TWT: Two-way traveltime [s]

INTRODUCTION
The presence for gas hydrates on the Hikurangi Margin east of New Zealand’s North Island has been inferred from the observation of bottom simulating reflections (BSRs) already in the 1980s [1]. BSRs have also been discovered on the Fiordland-Puysegur Margin to the southwest of...