

Uncertainty Reduction through Development in the Vorwata Field, Tangguh Project

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The Vorwata gas field forms the cornerstone of the initial Tangguh LNG project. It was discovered in late 1996 in Berau Bay in the Bird's Head Area of Papua Province, Indonesia. The field will supply dry gas to the Tangguh LNG facilities which will start up in 2008. The initial Vorwata development will exploit gas at 1.46 Bcf/day using two platforms, two pipelines and up to 15 initial development wells.

Key reservoir uncertainties prior to development include reservoir connectivity, distribution of perched water and reservoir thickness/permeability. Uncertainties result from poor seismic image quality and lack of production data from the basin. Initial wells are each projected to deliver upto 270 mmscf/day if well-connected, high quality reservoir away from perched water is encountered. A program was designed to reduce development uncertainties and to optimise initial well requirements. Initially, a risk analysis was developed to measure the impact of reservoir uncertainty on well number required to assure gas deliverability.

A buried 4C OBC seismic was acquired in the core part of the field to improve understanding of perched water, reservoir thickness and permeability. Interference tests are planned during initial field development to address reservoir connectivity concerns. The LNG development requires early gas from a single well for fuel and commissioning.