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**Near Field Exploration in the NE Netherlands - Continuing Exploration Success with Increasing Knowledge and Improving Technology**

The NE of the Netherlands is the most prolific sector of the Southern Permian Basin. The area of less than 4000 km<sup>2</sup>, including the giant Groningen field, contains approximately half of the initial gas reserves of the Southern Permian Basin. At the end of the 1980s, it appeared that the area was effectively creamed. Since then, continuously improving technology and increasing knowledge, caused a remarkable continuation of exploration success.

Almost all the reserves in the area are in aeolian and fluvial Permian sandstone reservoirs of the Permian Rotliegend, which are charged from coal measures in the underlying Carboniferous, and sealed by the Ten Boer Claystone and the thick Zechstein salt sequence.

The revival of the NE Netherlands as one of the most attractive exploration areas of the Southern Permian basin resulted firstly from conventional 3D seismic coverage. The continuation of near field exploration success was the result of the identification of direct hydrocarbon indicators (i.e. flat spots and amplitude anomalies), prediction of sealing faults for extended gas columns, PreSDM seismic reprocessing to improve the structural definition of traps and 3D visualisation tools. It has proven to be essential that geophysical and geological knowledge and technologies are fully integrated; only then their full potential can be realised fully.

The continuing exploration effort since the late 1980s has resulted in the discovery of a total of circa 150 billion cubic metres of commercial gas reserves (5.3 Tcf) in an area that was previously considered to be fully creamed.