

ICAM8 Abstracts

Arctic resources

Exploration in the western Barents Sea – Future hydrocarbon potential

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For decades, the Barents Sea was considered a gas-prone province with several large gas discoveries on the Russian and Norwegian side. Significant oil-finds were unknown from Russian waters, except for the Pechora Basin where the Fraznian - Domanik Petroleum System. The westward extension of this system is uncertain. In the Norwegian sector, exploration in the last 20 years has resulted in several oil and gas discoveries. The “Snøhvit”, Goliath, Castberg, Alta / Gotha and Wising oil and gas discoveries defines the western Barents Sea as an oil and gas province.

The unique mixture of multiple petroleum systems and the existence of numerous of play-types indicate that large undiscovered oil and gas volumes exist. Due to increased geological understanding and better quality geophysical data, oil companies are better at hydrocarbon prediction but tend to overestimate volumes. A major factor is the *in depth understanding* of burial, later uplift of certain geological strata and its impact on reservoirs, maturity/migration and traps. Interestingly, several recent discoveries show that even very shallow structures can contain high quality oil. The presence of Middle/Lower Triassic petroleum systems, in addition to the classical Upper Jurassic petroleum systems, indicate that large kitchen area for exiting plays. Stratigraphic traps represent potential future targets which may be more resistive to leakage following tectonic movements and recent glacio-isostatic uplift. A large range of different plays and petroleum systems need to be explored for more oil and gas to be discovered.