

CENOZOIC EVOLUTION OF THE BARENTS AND KARA SEAS CONTINENTAL MARGINS

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The giant oil and gas fields discovered in the Barents and Kara Seas shelves yield evidence for huge reserves of hydrocarbons. In this context, studies of Cenozoic structures on the continental margin are important for the reconstruction of crustal motion and recent geodynamics. Late Cretaceous-Danian regressive, Paleocene-Eocene transgressive, Oligocene-Miocene regressive, Pliocene-Pleistocene regressive-transgressive and Holocene transgressive epochs of continental margin evolution are recognized. The most remarkable tectonic feature of Barents and Kara Seas continental margins is a Cenozoic system of deep troughs and grabens which follow in location of Devonian-Lower Cretaceous paleorifts. These depressions are divided by a number of major domes and uplifts. Cenozoic development of the Arctic was controlled by progressive penetration of processes of riftogenesis and spreading from North Atlantic into the Norwegian-Greenland and Eurasian basins, which constrained the contrasting character and circum-oceanic zoning of tectonic movements at continental margins. Cenozoic tectonics was dominated by sharp uncompensated subsidences of shelf basins reviving the intricate graben-rift systems of Barents-Northern Kara basin. Late Cretaceous-Cenozoic tectonic activity was the reason of the growth up of perspective structures, strong denudation and sometimes forming of new hydrocarbon resources or their destroying. The highest oil and gas perspective zones are recognized on slopes of horsts and grabens and local positive structures of anticline and non-anticline type. In general, Cenozoic tectonics were favourable for preservation and re-forming of oil & gas resources on the shelf.