

Geological History and Exploration, North Sea

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History of exploration

The history of exploration of the North Sea and the areas West of Britain was briefly described by reference to a series of slides showing the successive allocations of acreage in the U.K., Norway, Germany, Denmark and Ireland, since the first allocation in 1964 in Offshore Germany. This series of slides showed the initial exploration emphasis on the Southern North Sea following the discovery of the Groningen Gas Field in Northern Holland in 1959. The slides also illustrate the initial exploration emphasis on the extension of the Mid-North Sea High in British Waters which attracted much of the attention in the first round of licensing in U.K. Waters. This attention was eventually proved to be unjustified since the Rotliegendes Gas Fields were all discovered in the Southern North Sea south of the Mid-North Sea - Fyn-Ringkøbing Highs. The slides also illustrate the gradual extension northwards of exploration interest into the Northern North Sea and especially into the Viking Graben. The present U.K. licensing situation, including the various rounds of relinquishment, was shown illustrating clearly the present-day concentration on the five main basins of interest in U.K. Waters, that is (i) South North Sea, (ii) Northern North Sea (including the Viking Graben), (iii) West of Shetland Basins, (iv) Irish Sea Basins, and (v) Celtic Sea Basins.

Geological history

The geological history of the North Sea Basins was briefly described and the geological situation of the oil and gas fields discovered to date was briefly illustrated by reference to two slides showing respectively the gas fields of the Southern North Sea and the oil and gas fields of the Northern North Sea. A brief description of the age of the reservoirs together with an analysis of the regional distribution of the facies was given. Representative seismic sections of the Southern North Sea and of the Northern North Sea were briefly shown and discussed.

North Sea drilling activity

The build-up in activity over the years 1964-1972 was discussed and the number of wells drilled was analysed as between exploration, delineation and

development wells. Clearly the discovery of the Ekofisk Complex in Norway had a profound effect on exploration activity in the North Sea in 1970 and 1971. The activity since that date has built up steadily to its present remarkable level. A comparison was drawn between the North Sea and the Gulf of Mexico illustrating the large area at present licensed in the North Sea (some 130,000 sq miles under lease as opposed to only 7,000 sq miles under lease in the Gulf of Mexico). On the other hand the reserves discovered to date are approximately two and a half times those discovered over a much longer time span in the Gulf of Mexico. Finally, exploration objectives over the next decade were briefly discussed and a map was shown of the area North of 62°N in Norway and of the West Coast of Britain and Ireland showing the deep water prospects in these areas.

Since the events over the last year have rendered most of these slides out of date they are not published with this brief abstract.