

## **SEABED PETROLEUM IN THE EAST CHINA SEA:**

### *GEOLOGICAL PROSPECTS AND THE SEARCH FOR COOPERATION*

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#### **Geological Structure of the East China Sea**

The East China Sea is a semi-closed sea lying between the east bank of the Chinese mainland and the Pacific Ocean. It connects with the Yellow Sea on the north, from the north of the Yangtze River estuary to the Jeju Island of South Korea; on the south, with the South China Sea from the Nan'ao Island of Guangdong Province and the south of Taiwan Island, and on the east is separated from the Pacific Ocean by Kyushu Island of Japan, the Ryukyu Archipelago and Taiwan Island. The East China Sea has a total area of about 770,000 square kilometers with average water depth of 370 meters, of which the continental shelf covers 460,000 square kilometers with average water depth of 72 meters. The seabed terrain of the East China Sea mainly consists of the continental shelf and the Okinawa Trough Basin.

The continental shelf basin of the East China Sea is the largest Cenozoic sedimentary basin in offshore China. It covers 2.4 million square kilometers, consisting of, from north to south, Yangtze Trough, Zhedong Trough, Taipei Trough and Pengjiayu

Trough. With a maximum sediment thickness of over 10,000 meters, it is abundant in oil and gas resources.

### **Xihu Trough**

Xihu Trough, located within Zhedong Trough, has an area of 43,000 square kilometers with geological reserves of about 30 million tons of crude oil and 100 billion cubic meters of natural gas. Now the Pinghu oil and gas field is in operation. The natural gas cooperation program in Xihu Trough of the East China Sea has five foreign contract areas covering 22,108 square kilometers, three of which are exploration areas (12/21 area, 20/14 area and 27/05 area) and the other two are development areas (Chunxiao Area and Baoyunting Area). The partners are the China National Offshore Oil Corporation (CNOOC), holding 30 percent of the shares, Sinopec 30 percent, Unocal Corporation 20 percent and Shell 20 percent. The foreign companies shall bear the risk of prospecting the three exploration areas, and the four partners shall develop the two development areas together according to their ratio of shares. CNOOC will be the operator, and establish a joint management committee made up of the four partners with the Star Oil Company of Sinopec Corporation as the first chair of the committee. The foreign partners shall pay compensation for the resources that have been explored.

### **Lishui Trough**

This is one of the main areas on which the fourth round of exploration is focused. With an area of 14,700 square kilometers, it has been identified by the fourth round of cooperation with foreign partners as the trough with the richest oil and gas reserves.

These conclusions have been reached concerning the Lishui Trough:

- One condensate gas field has been proven to reach the bottom line for commercial production. In this field, the proved reserve of natural gas is 6 billion cubic meters.
- Two layers of Paleocene hydrocarbon source rock have been discovered, and the lower layer is richer than the upper one.
- There is a low risk in the lower trap assemblage.

There are still structure traps in the lower assemblage of the Trough to be drilled.

### **Yangtze River Trough**

This trough cover 16,000 square kilometers, including an area of 11,820 square kilometers covering the substructure unit of Jinshan Trough which is being explored with foreign cooperation. Compared with the nearby Xihu Trough, this area boasts the Paleocene source-reservoir-cap assemblage. Current seismic data also show that there exist several large areas of formation.

CNOOC plans to continue its cooperation with foreign companies to explore the areas around Lishui Trough and Yangtze Trough.

## **China's Position on Joint Development Efforts**

### *Japan, South Korea and Taiwan:*

A report released in 1969 by the Committee for the Coordination of Joint Prospecting for Mineral Resources in Asia Offshore Areas, which was set up by the United Nations Economic Commission of Asia and Far East in 1966, indicated that the continental shelves between Taiwan and Japan are probably one of the most prospective oil and gas reserve areas in the world. Subsequently, Japan, South Korea and the Taiwan authorities all respectively declared seabed exploration and development boundaries delimited by themselves. The three sides discussed jointly developing the oil resources of the East China Sea, and proposed establishing a private company for developing the East China Sea in order to avoid boundary issues. The Chinese side made a protest against it and pointed out that the establishment and activities of such a joint company violated the interests and rights of China. With strong opposition from the Chinese side, the Taiwan authorities retreated from the joint development, and the three sides' joint development attempt failed.

### *Japan and South Korea*

In June 1972, Japan and the ROK started to draft a bilateral agreement on joint development. The Ministry of Foreign Affairs of China stated, "according to the principle of natural prolongation of continental shelves, it is up to China to consult with relevant countries to decide how to delimit the continental shelves of the East China Sea. The establishment of a joint development zone by Japan and the ROK infringes China's

sovereignty. The Japanese side admitted that China had not been consulted. Nevertheless, in June, 1978, South Korea and Japan exchanged instruments of ratification, the agreement came into effect,, and the Chinese side made a strong objection once again.

### *China and Japan*

China and Japan both claim territorial sovereignty over Diaoyu Island, and diverge greatly on the delimitation of the East China Sea. The Chinese side maintains that the delimitation should be in accordance with the principle of equality and the principle of natural prolongation of continental shelves, while the Japanese side stands for the principle of a median line. In view of the situation, the Chinese leaders put forward the principled position of setting aside the dispute and pursuing joint development as early as 1978, which received a positive response from the Japanese side. However, in August 1979, the Japanese side changed its position and proposed that the adjacent waters of Diaoyu Island should be excluded from the proposed joint development zone.

After the 1980s, the Japanese government started to discuss nongovernmental seabed petroleum cooperation with the Chinese side in the East China Sea but continued to insist on excluding areas adjacent to Diaoyu Island from the zone. The oil circles of the two sides reached an extensive common understanding concerning the contents of joint development, but still diverged greatly on how to locate the joint development area. The Japanese side claimed that the joint development zone should straddle its unilaterally proposed “median line,” and meanwhile rejected the inclusion of the adjacent waters of

Diaoyu Island. The Chinese side claimed that the joint development zone should be limited within the disputed areas of the East China Sea, that is, the area between the Japanese-proposed median line and the Chinese-proposed natural prolongation of continental shelves. For the Diaoyu Island, the Chinese side proposed setting aside the dispute on the territorial sovereignty of the island and jointly developing its adjacent sea area. But the Japanese side refused to set aside the dispute on the Diaoyu Island, paralyzing relevant discussions.